JAVANESE MODALS*

Jozina Vander Klok
McGill University

Javanese modals reveal interesting behaviour with respect to morphology and, more significantly, with respect to how the modal space is represented. The goals of this paper will be to first show that modals in Javanese are a distinct grammatical category, and secondly, to demonstrate that Javanese modals lexically encode both quantificational force and the type of modal base.

Section 1 describes how, on the syntactic level, modals in Javanese behave more like auxiliaries than verbs, but depart from this similarity with the addition of the affixes sa’- and –(n)é. I argue that, in this case, a morphological distinction between auxiliaries and modals warrants a separate grammatical category for modals. In §2 and §3, I turn to the second goal: how modality is represented in Javanese. Javanese modals are shown to have specified force as well as a selective modal base. Section 2 compares the fundamental organization of modality in Javanese to languages like English and St’át’imcets (Lilloet Salish). Section 3 then provides evidence how Javanese modality is unique, and looks at the modals mesthi ‘inevitable’, mungkin ‘may’, kudu ‘must’ and ento’, olèh ‘permit’ separately. These differences are illustrated with data from Pesisiran Javanese (Western Malay-Polynesian, Austronesian) of the ngoko speech level, spoken in Indonesia.

1. The Grammatical Status of Javanese Modals

As a first step, I show that modals in Javanese are a distinct grammatical category. In particular, this section illustrates that modals in Javanese are unlike verbs and closer to auxiliaries. For example, neither auxiliaries nor modals can take a DP argument (§1.1) or passivize (§1.2). However, while these modals are syntactically similar in nature to auxiliaries, they show unique behaviour with respect to morphological effects; namely the addition of the prefix sa’- and the suffix –(n)é (§1.4). The focus in §1 is on the modals mesthi ‘inevitable’ and kudu ‘must’. Please note that I have used wis ‘PAST’\(^1\) and either mesthi

---

\(^1\) I would like to thank Lathif Khuluq for sharing his language with me and making the study of Javanese possible. I thank Lisa Travis, Bernhard Schwarz, and Paul Hagstrom for their insightful guidance. Thank you also to the audiences at the McGill Bag Lunch, CLA08, and AFLAXV for their questions and comments, especially Lisa Mathewson, Henry Davis, Mark Donohue and Wayan Arka. All errors are my own.

\(^1\) The auxiliary wis ‘PAST’ may in fact be a perfective marker. Further research is necessary to fine tune this analysis.
‘inevitable’ or kudu ‘must’ as representative of the class of auxiliaries and modals respectively for the examples in §1.

1.1 Neither Auxiliaries nor Modals can take DP Arguments

Examples (1) and (2) demonstrate that modals and auxiliaries never license DP arguments, whereas verbs generally do (as shown in (2)b). The auxiliary wis ‘PAST’ can take a VP complement, as in (1)a, but not a DP complement, (1)b.

(1) a. cah kuwi wis [VP mangan]
    child the PAST eat
    ‘The child has eaten.’

    b. * konco-ku wis [DP gelang]
    friend-my PAST bracelet
    (‘My friend had a bracelet.’)

Similarly, a modal cannot have a DP argument as its complement, as shown by the ungrammaticality of (2)b for the modal mesthi ‘inevitable’.

(2) a. Dullah mesthi [VP ngerti [DP jawaban-é]]
    Dullah inevitable know answer-POSS
    ‘Dullah must know the answer.’

    b. * Dullah mesthi [DP jawaban-é]
    Dullah inevitable answer-POSS
    (‘Dullah certainly has the answer’)  

1.2 Neither Auxiliaries nor Modals can take Passive Morphology

With respect to passivization, auxiliaries and modals are noted to behave similarly, in contrast to verbs. Comparing the active sentence in (3) to its passive counterpart, we note that the passive prefix di- attaches to the verb masak ‘cook’, (4)a, but not to the auxiliary wis ‘PAST’, (4)b. Furthermore, the auxiliary plus verb is not seen as a complex predicate where di- attaches to both elements, illustrated by the ungrammaticality of (4)c.

(3) Aku wis masak sego
    1SG PAST cook rice
    ‘I have cooked the rice’

(4) a. Sego kuwi wis di-masak karo aku
    rice the PAST PASS-cook by me
    ‘The rice has been cooked by me.’

---

2 All examples are from fieldwork, unless otherwise noted.
b. * Sego kuwi di-wis masak karo aku
   rice the PASS-PAST cook by me

c. * Sego kuwi di-wis di-masak karo aku
   rice the PASS-PAST PASS-cook by me

Modals exhibit parallel behaviour, as shown in (5) and (6): the passive prefix *di-* may only attach to the verb, and not to the modal or both elements.

(5) Aku mesthi masak sego
    1SG inevitable cook rice
    ‘I must cook the rice’

(6) a. Sego kuwi mesthi di-masak karo aku
    rice the inevitable PASS-cook by me
    ‘The rice must be cooked by me.’

b. * Sego kuwi di-mesthi masak karo aku
    rice the PASS-inevitable cook by me

c. * Sego kuwi di-mesthi di-masak karo aku
    rice the PASS-inevitable PASS-cook by me

1.3 Both Auxiliaries and Modals can appear with Predicates

This subsection makes evident that both auxiliaries (7)-(9) and modals (10)-(12) can appear with predicates of type VP, PP, or AP, exemplifying again that auxiliaries and modals behave similarly.

(7) aku wis [VP mangan]
    I PAST eat
    ‘I ate.’

(8) kitowis [PP nang warong kuwi]
    we PAST to store the
    ‘I have been to the store.’

(9) aku wis [AP warèk]
    I PAST full
    ‘I’m already full.’

(10) Dullah kudu [VP ngomong boso Inggris]
    Dullah must speak language English
    ‘Dullah must speak English.’
1.4 Interaction with sa’…–(n)é

This section first shows that, again, modals and auxiliaries are unlike verbs: the prefix *sa’-* and the possessive suffix *(n)é* may attach to both modals and auxiliaries, but not to verbs. Secondly, this section shows that modals and auxiliaries are different: that is, different categorial effects arise depending on the class of the stem these morphemes attach to.

1.4.1 Auxiliaries

Example (13)b demonstrates that the addition of the affixes *sa’-* and *(n)é* derive prepositions when attached to auxiliaries. In such cases, *sa’-* and *(n)é* are both obligatory; these prepositions create adjuncts, which modify the main clause.

(13) a. Amina *wis* adus.
   *Amina PAST bathe*
   ‘Amina had already taken a bath.’

   *SA-PAST-POSS bathe, Amina sleep*
   ‘After taking a bath, Amina slept.’

   Other auxiliaries, including *mari* ‘PAST’, as shown in (14), and *durung* ‘not yet’, as in (15), display this behaviour as well.

(14) *Sa’-mari-né panén, wong wong dheso kuwi nanggap wayang*
   *SA-PAST-POSS harvest, person person village the ask shadow.play*
   ‘After the harvest, the villagers ask for a shadow puppet show.’

(15) Amina turu *sa’-durung-é* adus.
   *Amina sleep SA-not.yet-POSS bathe*
   ‘Amina slept before taking a bath.’
1.4.2 Modals

For modals, –(n)é shifts the meaning and derives adverbs. The prefix sa’- is optional for the epistemic modal mesthi, as in (16), and not permitted for the deontic modal kudu (17). Here, I focus only on the categorial-changing effects.

(16) Context: The photos are developed from the wedding, but the results are not so good. Even though the photographer was excellent, the lighting perfect, the weather great, unfortunately the picture did not turn out well.

a. gambar-é (sa’)-mesthi-né endah.
   picture-POSS SA-inevitable-POSS beautiful
   ‘The picture should have been beautiful’

These modals normally have a fixed position relative to other auxiliaries, but when they appear with –(n)é, they may also occur sentence initially (as in (17)a), after the verb (provided there is a pause) (as in (17)b), or, as usual, after the subject (as in (17)c). Examples (17)a and (17)b show that their syntactic position changes to be more free with this affix.

(17) Context: The consultant is describing with regret the situation of teachers today; unfortunately they are not great role models for students nowadays.

a. Kudu-né guru kuwi dadi panutan
   must-POSS teacher the become role.model

b. Guru kuwi dadi, kudu-né, panutan
   teacher the become, must-POSS, role.model

c. Guru kuwi kudu-né dadi panutan
   teacher the must-POSS become role.model
   ‘The teacher should be a role model.’

Further evidence that mesthiné and kuduné are adverbial-like is shown by the parallel distribution with speaker-oriented adverbs such as sa’jatiné ‘actually’, sa’temené ‘really’ and sa’beneré ‘in fact’.

(18) a. sa’-jati-né, cah kuwi pinter tapi polahé ora sinau, cah kuwi SA-teak-POSS child the smart but because not study, child the
   ora lulus.
   not succeed

3 The possessive suffix –(n)é changes the meaning of modal: descriptively, instead of relating the speaker’s degree of confidence about the proposition in question, –(n)é appears to relate the speaker’s regret about the proposition. In other terms, –(n)é seems to shift the modal to a counterfactual, a topic worthy of future research.
b. cah kuwi sa’jatiné pinter tapi polahé ora sinau, cah kuwi
child the actually smart but because not study, child the
ora lulus.
not succeed
‘Actually, the child is smart but because he didn’t study, the child
didn’t pass.

These morphological effects show that mesthi ‘inevitable’ and kudu
‘must’ in Javanese are distinct from auxiliaries and should therefore be analyzed
as a separate grammatical category.

In sum, the data presented in §2 has shown that modals are similar to
auxiliaries, but unlike verbs on the syntactic plane in that they cannot take DP
arguments, they cannot passivize, and they can both appear with VP, PP, and AP
predicates. However, modals are unique on the morphological plane in that the
possessive suffix –(n)é derives prepositions when attached to auxiliaries, but
derives adverbs when attached to modals. Thus, while auxiliaries and modals
may not be syntactically distinguishable aside from their distinct fixed positions,
their semantics are quite different: auxiliaries relay information about tense or
aspect, while modals relay the speaker’s degree of confidence about the
proposition. It is interesting that these two elements choose to differentiate only
with the interaction of morphology, suggesting that modals should not be
analyzed in the same class as auxiliaries. Instead, I argue that a separate
grammatical category is necessary for modals in Javanese. Furthermore, this
data highlights the fact that all aspects of the grammar, including morphology,
must be considered in determining grammatical status. I now turn to the second
goal of this paper, beginning with a brief comparison of modal systems.

2. Comparing Different Modal Systems

This section argues that modals in Javanese are distinctive from their
counterparts in both English and St’át’imcets (Lilloet Salish) in that they
lexically encode both quantificational force and the type of modal base.

Languages can vary on two different axes as shown by English and
St’át’imcets. English modals, on one hand, have a fixed quantificational force,
acting as either universal (i.e. must) or existential (i.e. may) quantifiers over
possible worlds, but the type of the modal base (epistemic, deontic,
circumstantial, etc.) may vary depending on the conversational background, as
Example (19) serves to illustrate this point: in English, the same lexical item,
must, may be employed for both epistemic contexts and deontic contexts.

(19) a. John must be at home
(in view of what I know – i.e. the lights are on) EPISTEMIC
b. John must go to school
   (in view of the law in Canada)  DEONTIC

Lilloet Salish, on the other hand, lexically specifies the type of modal base, distinguishing between deontic, circumstantial and several kinds of epistemic modality, but appears to allow variable quantificational force (Rullmann et al, to appear; Matthewson et al 2005, In press). Thus, as shown in Table 1, the modal system in English may be described as having specified force, but an unselective modal base. Lilloet Salish is the opposite, with unspecified force and a selective modal base.

<table>
<thead>
<tr>
<th>specified force</th>
<th>selective modal base</th>
<th>unselective modal base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Javanese</td>
<td>English</td>
<td></td>
</tr>
<tr>
<td>unspecified force</td>
<td>St’át’ímcets</td>
<td>?</td>
</tr>
</tbody>
</table>

Javanese is different from both English and Lilloet Salish in that it has a specific lexical word for each combination of force and modal base.

To view this comparison in a different light, let us consider the fundamental organization of modality: while Tables 2 and 3 simplify matters somewhat, the English modal system can be seen along a horizontal axis, while the modal system for Lilloet Salish is organized along a vertical axis.

Table 2. The modal system of English (Matthewson et al 2006:12)

<table>
<thead>
<tr>
<th></th>
<th>deontic</th>
<th>epistemic</th>
<th>circumstantial</th>
<th>future</th>
</tr>
</thead>
<tbody>
<tr>
<td>universal</td>
<td>must</td>
<td>must</td>
<td>must</td>
<td>will</td>
</tr>
<tr>
<td>existential</td>
<td>can</td>
<td>can</td>
<td>can</td>
<td>might</td>
</tr>
</tbody>
</table>

Table 3. The modal system of St’át’ímcets (Matthewson et al 2006:12)

<table>
<thead>
<tr>
<th></th>
<th>deontic/irrealis</th>
<th>epistemic</th>
<th>circumstantial</th>
<th>future</th>
</tr>
</thead>
<tbody>
<tr>
<td>universal</td>
<td>ka</td>
<td>k’a</td>
<td>ka-…-a</td>
<td>kelh</td>
</tr>
<tr>
<td>existential</td>
<td>ka</td>
<td>k’a</td>
<td>ka-…-a</td>
<td>kelh</td>
</tr>
</tbody>
</table>

That is, whereas English modals have a fixed quantificational force, but may typically take varying types of modal bases (Table 2), modals in Lilloet Salish have a fixed modal base, but typically vary in quantificational force (Table 3).

On the basis of these opposing modal systems, Rullmann et al (to appear) speculate that there is an inverse correlation: that is, all languages must specify exclusively for either force or modal base. If such a complementary distribution between the specification of quantificational force and the specification of the modal base is cross-linguistically valid, there should be no languages that have ‘fully specified’ modals (where all cells in Table 2/3 have a different lexical

---

4 See Rullmann et al (to appear) for details and data.
element) and no languages that have ‘underspecified’ modals (where there is only one element for all the cells).

Preliminary research suggests that Javanese is different from both English and Lilloet Salish, and employs a lexical restriction on both quantificational force and the type of modal base, resulting in ‘full-specification’ (Table 4). Importantly, these results suggest that an inverse correlation between force and modal base type cannot be held, as hypothesized in Rullmann et al (to appear).

<table>
<thead>
<tr>
<th>Javanese modals</th>
<th>deontic</th>
<th>epistemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>universal</td>
<td>kudu</td>
<td>mesthi</td>
</tr>
<tr>
<td>existential</td>
<td>ento, olèh</td>
<td>mungkin</td>
</tr>
</tbody>
</table>

I now turn to the supporting evidence for this claim, drawn from literary sources as well as elicitation, in §3.

3. **Javanese Modals encode for Force and type of Modal Base**

The focus will be on epistemic and deontic modals in this section. I argue that the Javanese modal system is fully specified; there is a different lexical word for each type of modal (see Table 4 above). Clues to how the modal space is carved in Javanese may begin with variable translations procured from grammars (Horne 1961), dictionaries (Robson et al 2002), and fieldwork, as in Table 5.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>mesthi</td>
<td>must</td>
<td>inevitable</td>
<td>must</td>
<td>should</td>
</tr>
<tr>
<td></td>
<td>probably</td>
<td>natural</td>
<td></td>
<td>certainly</td>
</tr>
<tr>
<td></td>
<td>of course</td>
<td>predictable</td>
<td></td>
<td></td>
</tr>
<tr>
<td>kudu</td>
<td>must</td>
<td>really have to</td>
<td>must</td>
<td>should</td>
</tr>
<tr>
<td></td>
<td>have to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mungkin</td>
<td></td>
<td>may</td>
<td></td>
<td>possibly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>possibly</td>
<td></td>
<td>likely</td>
</tr>
<tr>
<td>ento&lt;sup&gt;9&lt;/sup&gt;</td>
<td>receive</td>
<td>to receive</td>
<td>permission to</td>
<td>allowed to</td>
</tr>
<tr>
<td>olèh</td>
<td>get</td>
<td>permission</td>
<td>permission to</td>
<td>may, can</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 Future research is necessary to determine how circumstantial and future modals behave in Javanese. Considering that both deontic and epistemic modals lexically specify for quantificational force, it might be that circumstantial and future modals do as well.

6 I follow the approach to fieldwork outlined in Matthewson (2004).

7 The examples in Section 4 are inspired from work in Rullmann et al (to appear).

8 Indonesian, Malay online dictionary: http://www.websters-online-dictionary.com/translation/Javanese/
The attentive reader will notice that certain modals in Javanese have the same translation in English: both mesthi and kudu may be translated as must, suggesting that these modals are universal, and both mungkin and ento’, olèh may be translated as may, suggesting that these modals are existential. I now examine each modal in turn.

3.1  

**Mesthi as a Universal Epistemic Modal**

The modal mesthi ‘inevitable’, I argue, is best interpreted as a universal epistemic modal. Preliminary evidence that mesthi does not allow for variable force or conversational background comes from elicitation in (20) and (21). Example (20) shows that mesthi ‘inevitable’ allows a universal reading, but mungkin ‘may’, the other epistemic modal, does not, as it is not accepted in this context. The consultant clearly rejects mungkin, stating “It’s awkward here”.

(20) Context: Ahmed is calling for his dog. The dog is not coming. Ahmed looks for the dog all over the house, but he cannot find him. Then he looks outside in the yard. Ahmed still cannot find the dog. The dog must have escaped.

    a. asu kuwi mesthi wis ucul
        dog the inevitable already get.loose
        ‘The dog must have escaped.’

    b. # asu kuwi mungkin wis ucul
        dog the may past get.loose

It is apparent in (21) that mesthi ‘inevitable’ is felicitous in an epistemic context. However, the unacceptability of kudu ‘must’, the other universal modal, in this context suggests that kudu cannot be interpreted as an epistemic modal.

(21) Context: Given that the professor has written so many papers, and has many publications, and when he lectures, he is so knowledgeable, the students concluded that the professor is intelligent.

    a. Guru gedhé kuwi mesthi pinter
        teacher big the inevitable smart
        ‘The professor must be intelligent.’

    b. # Guru gedhé kuwi kudu pinter
        teacher big the must smart

---

9 The modal ento’ is found to be spelled a number of different ways: èntoq (Horne 1961), èntuk (Robson et al 2002), and ento’ (fieldwork). I will be using ento’ for the remainder of this paper.
Textual examples from ‘Beginning Javanese’ by Elinor Horne support the claim that mesthi is restricted to a universal epistemic context. In (22), the subject, based on what she knows about Pardi, clearly believes the medicine to resolve his stomach ache.

(22)  Context: Pardi has a stomach ache now because he ate too many unripe mangoes. (Horne 1961:409)

Taq-tambanané, mesthi énggal mari
me-given.medicine, inevitable fast recover
‘I’ll give him some medicine; that’ll fix him up fast.’

In sum, mesthi ‘inevitable’ is best interpreted as a universal epistemic modal; mesthi is consistently offered in such contexts in fieldwork. Moreover, this modal is not felicitous in existential epistemic contexts, and we will see in §3.3 that mesthi is also not felicitous in deontic contexts. It was noted as well that mungkin ‘may’ is not felicitous in epistemic universal contexts (cf.(20)); we turn to this modal next. Finally, we noted that kudu ‘must’ is not felicitous in epistemic contexts (cf. (21)); we will investigate this modal in §3.3 below.

3.2 Mungkin as an Existential Epistemic Modal

The modal mungkin ‘may’ is argued to be lexically restricted to existential epistemic contexts. Data from elicitation support this claim in (23) and (24). Consider the context in (23), the same as (20), except for the now viable possibility that the dog may be locked in the shed. As soon as there is possibility on the scene, mesthi is no longer acceptable. The infelicity of mesthi (23)b affirms that this modal cannot be interpreted as an existential modal; a different lexical word, mungkin ‘may’, is most appropriate here.

(23)  Context: Ahmed is calling for his dog. The dog is not coming. Ahmed looks for the dog all over the house, but he cannot find him. Then he looks outside in the yard. Ahmed still cannot find the dog, but maybe the dog is locked in the shed. The dog may have escaped.

    a.  asu kuwi mungkin wis ucul
do the the may PAST get.loose
    ‘The dog may have escaped.’

    b.  # asu kuwi mesthi wis ucul
do the inevitable PAST get.loose

Another elicited example in (24) supports this claim. With using mungkin in this context, the consultant comments that “It is a prediction; Dullah is not so sure that the dog ate the food; maybe the cat did”, showing that mungkin is
indeed existential. That *mesthi* is not acceptable as an existential modal is also reiterated by the consultant: “You cannot say *mesthi* in this context because [it means] you are sure that the dog has eaten it.”

(24) Context: Dullah went to a big dinner at his parent’s house. There was a lot of food leftover. The next day, Dullah wanted to eat some of the leftover food, but he couldn’t find it – the dog may have eaten it.

a. asu kuwi **mungkin** wis mangan panganan kuwi
dog the probably already eat food the
‘The dog may have eaten the food’

b. # asu kuwi **mesthi** wis mangan panganan kuwi
dog the inevitable already eat food the

Example (26) follows a test based on the predictions of the logical schemas in (25)\(^\text{10}\), in which the second proposition asserts that the first proposition is perhaps false.

(25) a. ◊ \(\phi\) ∧ ◊¬ \(\phi\) CONTINGENCY
b. □\(\phi\) ∧ ◊¬ \(\phi\) CONTRADICTION

In particular, this test predicts that only an existential quantifier gives non-contradictory results. Therefore, that (26) is accepted by the consultant clearly establishes that the modal *mungkin* ‘may’ can only be existential; it is not universal.

(26) Context: It looks like Aminah has left the party; her bag is gone, but she might have taken it into the bathroom. So: Aminah may have left, but maybe she hasn’t left yet.

a. Aminah **mungkin** wis bali, tapi **mungkin** waé dhèwèké isèh
Aminah may PAST return, but may just 3SG yet
durung bali
not.yet return
‘Aminah may have left, but maybe she hasn’t left yet.’

b. **Mungkin** Aminah wis lungo.
may Aminah PAST go
‘Maybe Aminah already left.’

10 Following Rullmann et al, to appear, 7.
may Aminah not yet return
‘Maybe Aminah hasn’t left yet.’

In short, the data in §3.2 indicates that mungkin ‘may’ can only be interpreted as an existential epistemic modal as it consistently requires such specific contexts. This modal was shown to be not felicitous in universal epistemic contexts (cf. (23) and (24)), and the logical predictions of (25) confirms that mungkin can only be existential.

3.3 Kudu as a Universal Deontic Modal

Another Javanese modal, kudu ‘must’, is also argued to lexically specify for both quantificational force and the type of modal base: I claim that kudu is best interpreted as a universal deontic modal. The elicited example in (27) illustrates this claim. The context specifies the force as universal, and specifies the conversational background as deontic (imagine a parent saying this to his son). For this context, only kudu ‘must’ is acceptable. Moreover, the infelicity of mesthi ‘inevitable’ in this context shows that this modal cannot be deontic, but only epistemic. The consultant clearly rejects mesthi, as a new context is offered for (27)b, one that is noticeably epistemic in nature: “Your son usually wakes up early, so you predict that he will wake up early for his birthday as well”.

(27) Context: My son should wake up early tomorrow morning so he can enjoy his birthday.

a. ana-ku kudu tangi luweh isu’ sesok
   son-my must get.up early morning tomorrow
   ‘My son should wake up early tomorrow morning.’

b. # ana-ku mesthi tangi luweh isu’ sesok
   son-my inevitable get.up early morning tomorrow

The following two examples are taken from Horne’s Beginning Javanese. In (28), kudu ‘must’ is shown to be employed in a universal deontic context. The consultant was asked if the modal ento’ ‘permit’ could also be employed in this context; the infelicity of ento’ ‘permit’ here shows that ento’ does not allow for a universal interpretation.

(28) Context: A pound of rice usually lasts for three days, and there are two pounds left now. So I have to make the remaining rice last for six more days. (Horne 1961:269)

a. Dadi aku kudu njedhengaké turahan beras kuwi kanggo
   become I must be.enough remain rice the for
   nem dinô menêh
six day again
‘So I have to make the remaining rice last for six more days.’

b. # Dadi aku ento’ njedhengaké turahan beras kuwi kanggo become I permit be.enough remain rice the for nem dinô menèh six day again (fieldwork)

Finally, in another textual example in (29), the reader will note that the translation in Horne’s grammar is given as must, lexically specified as universal in English, suggesting that kudu is also universal.

(29) Context: The housekeeper starts to cook in the kitchen by noon. A servant girl helps her. (Horne 1961:100)

Jèn tjah-tjah pôdhô bali sôngkô sekolah, si-mbôq kudu rampong when child-child PL back from school, mother must finish ‘When the children get back from school, the housekeeper must be finished.’

Thus, the modal kudu is consistently given for universal deontic contexts, it is not felicitous in epistemic contexts (cf. (21) in §3.1), or in existential deontic contexts, a matter to which we turn now in §3.4. Therefore, it is argued that kudu ‘must’ is best interpreted as lexically specified for both quantificational force (i.e. as universal), and for the type of modal base (i.e. as deontic).

3.4  Ento’, olêh as an Existential Deontic Modal

The fourth cross-section of force and modal base, existential deontic, is demonstrated by two modals in Javanese: ento’ and olêh. The modal ento’ ‘permit’ is used to illustrate the following examples; olêh behaves exactly the same. In example (30) from fieldwork, we note that ento’ ‘permit’ is offered for existential deontic contexts. This example also confirms that kudu ‘must’ is interpreted only as universal, shown by the unacceptability of (30)b for this context.

(30) Context: According to the rules of the hospital, only family members are allowed to enter the patient’s room during visiting hours. But since you are a really close friend, the nurse says that you may come in.

a. awakmu ento’ melbu you permit enter ‘You may come in.’
b. # awakmu **kudu** melbu
   you must enter
   ‘You may come in.’

Consider next the context in (31), offered by the consultant to help explain the interpretation of **ento’**, which is clearly existential (i.e. you may or may not carry a rock) and deontic (i.e. the doctor has granted permission for you to do so) in nature. Furthermore, this sentence cannot mean ‘I am able to carry a three tonne rock’; the modal **iso** ‘can’ would instead be employed.

(31) Context offered: The doctor allows me to carry a large rock because I’m healthy now.

   aku **ento’** ngangkat watu telong ton
   I permit carry rock three tonne
   ‘I can carry a three tonne rock.’

These two examples above have shown that **ento’** and **olêh** are consistently given for existential deontic contexts. Furthermore, the modal **ento’** ‘permit’ is not felicitious in universal deontic contexts, as seen in (28)b in §3.3. Therefore, these modals are argued to be best interpreted as lexically specified for both existential quantification and for a deontic modal base.

4. Conclusion

In conclusion, I have argued that the modals **mesthi** ‘inevitable’ and **kudu** ‘must’ behave similarly to auxiliaries, but display unique categorial effects with respect to the addition of the affixes **sa’-…-ne**, suggesting that modals should be treated as a separate grammatical category.

As well, I have presented data in Pesisiran Javanese that supports a fully specified modal system where quantificational force and the type of modal base are both lexically restricted.

<table>
<thead>
<tr>
<th>Table 5. Modal distinctions</th>
</tr>
</thead>
<tbody>
<tr>
<td>specified force</td>
</tr>
<tr>
<td>Javanese</td>
</tr>
<tr>
<td>unspecified force</td>
</tr>
</tbody>
</table>

The data presented in this paper suggests that the complementary hypothesis (Rullmann et al, to appear), in which upper left and lower right cells remain blank (see Table 5), is not cross-linguistically valid. It will be interesting to pursue how circumstantial and future modality are represented in Javanese.
References


