Tense and Auxiliaries in Jambi Malay

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This paper describes some syntactic and semantic properties of tense, aspectual, and modal auxiliaries in the variety of Malay spoken in Jambi City (Jambi Province, Indonesia). In addition to describing TAM auxiliaries, this paper demonstrates the ways in which auxiliaries behave differently from main verbs in the language. Moreover, this paper argues that the modal auxiliary *biso* 'can' occupy two distinct syntactic positions. I support this claim with evidence based on the properties of *biso* when it occurs in constructions with aspectual markers, modals, and certain kinds of syntactic fronting.

1. Introduction[1]

Jambi Malay is a Malay variety spoken in Jambi Province, southeastern Sumatra. The focus of this paper is on the variety spoken in the city of Jambi (see also Yanti, 2010). This paper has two main purposes. The first is to describe tense, aspectual markers, and modal auxiliaries in Jambi Malay (henceforth, JM). The second purpose is to provide a syntactic analysis to explain observed ambiguities in the interpretation of the modal auxiliary *biso* 'can'.

This paper is organized as follows. Section 2 presents a very brief description of how tense is expressed in the language. Section 3 describes the properties of aspectual auxiliaries, modal auxiliaries, and constructions with multiple auxiliaries. This section also illustrates how auxiliaries differ from main verbs. Section 4 accounts for an ambiguity in the interpretation of the modal auxiliary *biso* 'can' and proposes a syntactic analysis that accounts for this ambiguity.

2. Tense

In JM, the overt presence of the expression of tense in a clause is optional and, if present, is not morphologically marked on verbs. The inventory of tense markers consists entirely of free lexemes. Thus, sentences like (1), for example, can express events that have occurred in the past, are currently in progress, or will occur in the future, depending upon the context in which they are used.

(1)   a.   *abaŋ*   *aku*   *manciŋ*
          older.brother   1SG   ACT.fishing.rod
          'My older brother went fishing.'/
          'My older brother is fishing.'/
          'My older brother is going fishing.'

b. *ali kərjo*
    Ali work
    'Ali worked.'/
    'Ali is working.'/
    'Ali is going to work.'

Although the timeframe when an event took place can be entirely context-dependant, adverbs of time can also be used to specify when an event took place. The following are common temporal adverbs in JM: *kəmaren* 'yesterday', *dulu* 'before/old time', *səmalam* 'last night', *malam tadi/tadi malam* 'last night', *tadi* 'earlier/just now', *səkaraŋ* 'now, kageʔ* 'later', *besoʔ* 'tomorrow', and *luso* 'the day after tomorrow'. The adverbs of time *kemaren* 'yesterday' and *səkaraŋ* 'now' in (2) below, for example, specify when an event took place.

(2) a. *abaŋ   aku   manciŋ   kəmaren*
         older.brother 1SG   ACT.fishing.rod   yesterday
         'My older brother went fishing yesterday.'
         *'My older brother is going fishing.'
         *'My older brother is fishing.'

     b. *ali   kərjo səkaraŋ*
         Ali   work   now
         'Ali is working now.'
         *'Ali worked.'
         *'Ali is going to work.'

In (2), the adverb of time appears sentence-finally. Note that adverbs of time can also appear in different positions in the sentences, such as before the verb, as in (3)a, or before the surface subject, as in (3)b.

(3) a. *abaŋ   aku kəmaren   manciŋ*
         older.brother 1SG yesterday ACT.fishing.rod
         'My older brother went fishing yesterday.'

     b. *səkaraŋ ali   kərjo*
         now   ali   work
         'Ali is working now.'

3. Auxiliaries

This section is divided into four sub-sections. Section 3.1 and section 3.2 describe the aspectual auxiliaries and modal auxiliaries, respectively. Section 3.3 describes multiple auxiliaries and their possible word orderings. Section 3.4 presents pieces of evidence showing that auxiliaries are different from main verbs.

3.1. Aspectual Auxiliaries

Unlike languages such as French and English wherein aspect is often marked via bound verbal morphology, JM marks the aspect using different free lexical items, which are often freely omitted (see e.g. Sneddon 1996, Arka 2013). JM aspectual markers, which I refer to as aspectual auxiliaries, include *lagi* 'PROG', *sədaŋ* 'PROG', *masi* 'still', *la* 'PFCT', *baru* 'just', *pərna* 'ever', *bəlum* 'not yet', and *naʔ* 'FUT'. When aspectual auxiliaries co-occur with a verb, they appear to the left of the verb, as shown below.

(4) a. *dioʔ lagi baco buku=ɲo di   kamar*
   3 PROG read book=3 LOC room
   'He is reading his book in the bedroom.'

  b. *pintu dəpan la   di-pasaŋ kami*
   door front PFCT PASS-set 1
   'The front door has been installed by us.'

  c. *kəluargo=ɲo naʔ dataŋ*
   family=3 FUT come
   'Her family will come.'

In addition, aspectual auxiliaries cannot appear in other positions, such as immediately post-verbal position, as in (5)a, or in sentence-final position, as in (5)b and (5)c.

(5) a. **dioʔ baco lagi buku=ɲo di   kamar*
   3 read PROG book=3 LOC room
   'He is reading his book in the bedroom.'

  b. **pintu dəpan di-pasaŋ kami la*
   door front PASS-set 1 PFCT
   'The front door has been installed.'

  c. **kəluargo=ɲo dataŋ   naʔ*
   family=3 come FUT

   'Her family will come.'

It should be remembered; however, that sentences (5)a and (5)b are grammatical if *lagi* means 'again' and *la* functions as an emphatic marker, as shown respectively in (6)a and (6)b below. These two sentences simply show that the instances of *lagi* and *la* in (6) are homophonous to those in (5) and this paper does not focus on this issue.

(6) a. *dioʔ baco lagi buku=ɲo di   kamar*
   3 read again book=3 LOC room
   'He read his book again in the bedroom.'

  b. *pintu dəpan di-pasaŋ kami la*
   door front PASS-set 1 EMPH
   'It was us who installed the front door.'

3.2. Modal Auxiliaries

Modal auxiliaries in JM include *biso, təlap, bole, harus,* and *məsti*.

biso and *təlap*

Biso is used to express ability, permission, and possibility. Therefore, sentences (7), (8), and (9) below are ambiguous and their interpretations depend on the context in which they are used.

(7) *maria biso kərjo sampe malam*
 Maria can work until night
 a. 'Maria is able to work until night.'
 b. 'Maria is permitted to work until night.'
 c. 'It is possible that Maria will work until night.'

(8) *oraŋ-tu   biso baŋun gəreja=ɲo lagi*
person-DEM.DIST can build   church=3   again
a. 'They are able to build their church again.'
b. 'They are permitted to build their church again.'
c. 'It is possible that they will build their church again.'

(9) *ida biso dataŋ kageʔ malam*
Ida can come later   night
a. 'Ida is able to come tonight.'
b. 'Ida is permitted to come tonight.'
c. 'It is possible that Ida will come tonight.'

Similar to *biso, təlap* is used to express ability. However, unlike *biso, təlap* is not ambiguous as it cannot be used to express possibility or permission.

(10) *dioʔ təlap bayar utaŋ-tu*
3   can pay   debt-DEM.DIST
'He is able to pay the debt.'
*'He is permitted to pay the debt.'
*'It is possible that he will pay the debt.'

bole

Bole is used to express permission, as exemplified in the following examples.

(11) *besoʔ   kau bole ŋantar   motor=ɲo*
tomorrow 2SG may ACT.deliver motorcycle=3
'You may deliver the motorcycle tomorrow.'

harus and məsti

Both *harus* and *məsti* are used to convey obligation.

(12) *amin harus jual tana=ɲo dulu*
Amin must sell land=3   before
'Amin must sell his land first.'

(13) *edi məsti jəmput anaʔ=ɲo*
Edi must pick.up child=3
'Edi must pick his son up.'

Similarly to aspectual auxiliaries, when they appear with a verb, modal auxiliaries must appear to the left of the verb. Sentences are judged ungrammatical when these auxiliaries appear in immediate post-verbal position, as in (14)a, (14)c, and (14)d, or in sentence-final position, as in (14)b.

(14) a.   **dioʔ bayar təlap utaŋ-tu*
3   pay   can debt-DEM.DIST
'He is able to pay the debt.'

b. *besoʔ   kau   ɲantar   motor=ɲo   bole²
    tomorrow   2SG   ACT.deliver motorcycle=3   may
    'Tomorrow you may deliver the motorcycle.'

c. *oraŋ-tu   baɲun biso gəreja=ɲo lagi
    person-DEM.DIST build can church=3   again
    'They can build their church again.'

d. *amin jual harus tana=ɲo dulu
    Amin   sell must land=3   first
    'Amin must sell his land first.'

3.3. Multiple Auxiliaries

More than one auxiliary may occur in a clause. When two auxiliaries co-occur, the combination can be between two aspectual auxiliaries, between two modal auxiliaries, or between an aspectual auxiliary and a modal auxiliary.

The following combinations of aspectual auxiliaries are among those attested in JM: *masi bəlum, la pərna, bəlum pərna, bəlum naʔ*, as exemplified in the following sentences.

(15) a. jalan=ɲo masi bəlum di-baeʔ-i
         street=3 still not.yet PASS-good-APPL
         'The street is still not fixed yet.'

   b. budaʔ-tu   la   pərna kə   səŋati
       kid-DEM.DIST PFCT   ever to   Sengeti
       'They have been to Sengeti.'

   c. kami bəlum pərna kərjo di   kota
       1   not.yet ever work LOC   city
       'We have never worked in a city.'

   d. dioʔ bəlum naʔ ŋaŋkat   anaʔ
       3   not.yet FUT ACT.lift child
       'She does not yet want to adopt a child.'

Attested combinations of modal auxiliaries include *məsti təlap, harus biso*, and *biso harus*, as illustrated in the following examples.

(16) a. kito məsti təlap kərjo sampe malam
         1PL   must   can   work until   night
         'We need to be able to work until night.'

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² This string is felicitous in Jambi Malay only with special intonation, i.e. there is a significant pause before *bole* and in a context like that shown below:

(i) A: bole aku ŋantar   motor=ɲo   besoʔ?
         may   1SG ACT.deliver motorcycle=3 tomorrow
         'May I deliver the motorcycle tomorrow?'

     B: besoʔ   kau   ŋantar   motor=ɲo?   bole
         tomorrow 2SG   ACT.deliver motorcycle=3 may
         'Are you delivering the motorcycle tomorrow? Okay, you may.'

As shown above, *bole* forms a separate sentence.

b.   *abaŋ*   *aku*   *harus* *biso* *bayar* *sewo-tu*
     older.brother   1SG   must   can   pay   rent-DEM.DIST
     'My older brother needs to be able to pay the rent.'

c.   *abaŋ*   *aku*   *biso*   *harus* *bayar* *sewo-tu*
     older.brother   1SG   can   must   pay   rent-DEM.DIST
     'It is possible that my older brother must pay the rent.'

Note that sentence (16)b and sentence (16)c are only different with respect to the order of the modal auxiliaries. However, the meanings of the two sentences are different. I shall return to this issue later, in section 4.

When an aspectual auxiliary and a modal auxiliary co-occur, the aspectual marker generally precedes the modal auxiliary, as shown below.

(17) a. *dioʔ*   *la*   *təlap* *bayar* *utaŋ-tu*
          3   PFCT   can   pay   debt-DEM.DIST
          'He has been able to pay the debt.'

      b. *budaʔ-tu*   *bəlum*   *biso*   *baco*
          kid-DEM.DIST   not.yet   can   read
          'They haven't been able to read.'
          'They haven't been allowed to read.'

      c. *adeʔ*   *aku*   *la*   *bole* *bawaʔ* *motor=ɲo*   *deweʔ*
          younger.sibling   1SG   PFCT   may   ride   motorcycle=3   alone
          'My younger brother has been allowed to ride his own motorcycle.'

      d. *abaŋ*   *aku*   *lagi* *biso* *baleʔ* *bulan* *dəpan*
          older.brother   1SG   PROG   can   return   month   front
          'My older brother is able to return next month.'

      e. *kantor-tu*   *masi*   *harus* *ŋasi*   *te.ha.er*
          office-DEM.DIST   still   must   ACT.give   holiday.bonus
          'That office still has to give holiday bonus.'

Although an aspectual auxiliary generally appears before a modal auxiliary, the modal auxiliary *biso* needs to precede the aspectual marker if it is used to express possibility, as shown in (18) below. In section 4, I shall use this fact as a piece of evidence to support the claim that *biso* is generated in two different syntactic positions.

(18) a. *budi*   *biso*   *la*   *jual*   *motor=ɲo*
          Budi   can   PFCT   sell   motorcycle=3
          'Budi has probably sold his motorcycle.'

      b. **budi*   *la*   *biso*   *jual*   *motor=ɲo*
          Budi   PFCT   can   sell   motorcycle=3
          'Budi has probably sold his motorcycle.'

More than two auxiliaries can also be present together, as exemplified below.

(19) a. *oraŋ-tu*   *bəlum*   *pərna* *harus* *naeʔ*   *ojek*
          person-DEM.DIST   not.yet   ever   must   go.up   motor.taxi
          'They have never needed to take a motor taxi.'

b. *anaʔ aku masi bəlum biso ŋomoŋ*
child 1SG still not.yet can ACT.speak
'My child still cannot talk.'

3.4. Auxiliaries vs. Main Verbs

In Indonesian, aspectual and modal auxiliaries appear between the surface subject and the main verb (see among others: Sneddon 1996, Musgrave 2013, Arka 2013, Grangé, 2013). In previous sections, I have shown that JM also demonstrates similar pattern. The question one may raise is whether or not auxiliaries are different from main verbs in JM.

In this section, I shall show that auxiliaries do pattern differently from main verbs with respect to fronting facts, word order facts, and verbal morphology.

The first argument for claiming that auxiliaries and main verbs are different in JM is based on fronting facts. Notice that aspectual markers and modal auxiliaries can be fronted to form a yes-no question (see examples (20)a and (20)b) or for emphatic reasons (see example (20)c).[3]

(20) a. *lagi_i kau t_i pake pena-tu?*
PROG 2SG use pen-DEM.DIST
'Are you using the pen?'

b. *bole_i dioʔ t_i dataŋ kageʔ?*
may 3 come later
'May he come later?'

c. *la_i aku t_i cuci baju-tu*
PFCT 1SG wash garment-DEM.DIST
'I **have** washed the clothes.'

Unlike auxiliaries, main verbs cannot be fronted, as demonstrated by the ungrammaticality of the following sentences.

(21) a. **pake_i kau lagi t_i pena-tu?[4]*
use 2SG PROG pen-DEM.DIST
'Are you using the pen?'

b. **dataŋ_i dioʔ bole t_i kageʔ?*
come 3 may later
'May he come later?'

c. **cuci_i aku la t_i baju-tu*
wash 1SG PFCT garment-DEM.DIST
I have washed the clothes.'

The second argument to support the claim that auxiliaries and main verbs are distinguished in JM is based on the word order facts.[5] As previously shown, the main

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[3] Note that when the auxiliary is fronted for emphatic reason, the speaker tries to emphasize on the fact expressed in the auxiliary. Sentence (20)c, for example, can be used to emphasize on the fact that the subject has done the action of washing.

[4] This sentence is grammatical if it means 'are you using the pen again?' Note that *lagi* for this translation means 'again'.

[5] Thanks to Timothy McKinnon for raising this point.

verb can occur following the auxiliary, but the auxiliary cannot occur following the main verb. In addition to many other examples in this paper, sentences in (22) below show that the main verb follows the auxiliary.

(22) a. *kami   la   ŋirim   paket-tu   kə ani*
       1   PFCT ACT.send package-DEM.DIST to   Ani
      'We have sent the package to Ani.'

    b. *pəsərta=ɲo   bole   bayar ɔŋkos=ɲo besoʔ*
       participant=3 may   pay   fee=3   tomorrow
      'The participants may pay the fee tomorrow.'

In contrast, the following examples show that the main verb cannot precede the auxiliary (also see examples (5) and (14)).

(23) a. **kami   ŋirim   la   paket-tu   kə ani*
       1   ACT.send PFCT package-DEM.DIST   to   Ani
      'We have sent the package to Ani.'

    b. **pəsərta=ɲo bayar bole ɔŋkos=ɲo besoʔ*
       participant=3 pay   may fee=3   tomorrow
      'The participants may pay the fee tomorrow.'

The third argument showing that auxiliaries and main verbs are different is based on verbal morphology. Jambi Malay exhibits a variety of verbal affixes, such as the nasal prefix *ŋ-* for active voice, the passive *di-* for passive voice, and the applicative suffix *–i* (see Cole, Herman and Yanti, 2008; Yanti, 2010). Main verbs in Jambi Malay can take these affixes while aspects and modals lack of these affixes. In active voice, most verbs, such as *cuci* 'wash' and *taŋkap* 'catch' can take the nasal prefix *ŋ-* (see (24)), while aspectual auxiliaries and modal auxiliaries such as *la* 'PFCT' and *harus* 'must' cannot take the nasal prefix *ŋ-*, as in (25).[6]

(24) a. *maʔ   ɲuci   baju-tu*
      mother ACT.wash garment-DEM.DIST
      'Mother washes the clothes.'

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[6] Note that some verbs in the City dialect of JM, such as *tiduʔ* 'sleep', *jalan* 'walk', *lari* 'run' also do not take the nasal prefix, as exemplified below.

(i) a. *kami biaso tiduʔ/*niduʔ   malam*
    1   usual sleep ACT.sleep   night
    'I usually sleep late.'

  b. kawan aku   lari /*ŋ-lari   kəncaŋ nian
    friend 1SG   run   ACT-run   quick   very
    'My friend runs very quickly.'

However, these verbs can take the nasal prefix when the applicative suffix *–i* is present or take other prefixes.

(ii) a. *kami niduʔ-i   anaʔ kami jam   lapan*
    1   ACT.sleep-APPL child 1   hour eight
    'We put our child to sleep at eight.'

  b. *kawan   aku bə-lari   kəncaŋ nian*
    friend 1SG INTR-run quick   very
    'My friend runs very quickly.'

b. *plisi-tu   naŋkap   maliŋ-tu*
police-DEM.DIST ACT.catch   thief-DEM.DIST
'The police caught the thief.'

(25) a. **maʔ   ŋ-la   cuci   baju-tu*
mother ACT-PFCT wash   garment-DEM.DIST
'Mother has washed the clothes.'

b. **plisi-tu   ŋ-harus   taŋkap   maliŋ-tu*
police-DEM.DIST ACT-must   catch   thief-DEM.DIST
'The police must catch the thief.'

It should be clarified that the ability to take verbal morphology like the nasal prefix is merely a way of differentiating the behavior of auxiliaries from content words (including nouns), and not from verbs in particular.

In addition, when the nasal prefix co-occurs with the auxiliaries, it only attaches to the verb, and not to the aspectual or modal auxiliary:

(26) a. *maʔ   harus ɲuci   baju-tu*
mother must   ACT.wash garment-DEM.DIST
'Mother must wash the clothes.'

b. **maʔ   ŋ-harus   cuci   baju-tu*
mother ACT-must wash   garment-DEM.DIST
'Mother must wash the clothes.'

(27) a. *plisi-tu   la   naŋkap   maliŋ-tu*
police-DEM.DIST PFCT ACT.catch   thief-DEM.DIST
'The police have caught the thief.'

b. **plisi-tu   ŋ-la   taŋkap   maliŋ-tu*
police-DEM.DIST ACT-PFCT catch   thief-DEM.DIST
'The police have caught the thief.'

Much like the active voice prefix *ŋ-*, whereas main verbs in the language can take the passive *di-* prefix, neither the aspectual auxiliary nor the modal auxiliary can take this prefix. Examples follow.

(28) a. *baju-tu   la di-cuci   maʔ*
garment-DEM.DIST PFCT PASS-wash   mother
'The clothes have been washed by mother.'

b. *maliŋ-tu   harus di-taŋkap plisi-tu*
thief-DEM.DIST   must PASS-catch police-DEM.DIST
'The thief must be caught by the police.'

(29) a. **baju-tu   di-la   cuci   maʔ*
garment-DEM.DIST PASS-PFCT wash   mother
'The clothes have been washed by mother.'

b. **maliŋ-tu   di-harus taŋkap   plisi-tu*
thief-DEM.DIST   PASS-must catch   police-DEM.DIST
'The thief must be caught by the police.'

In summary, auxiliaries in JM are different syntactically from main verbs.

4. An Analysis of *Biso*

Before turning to an analysis of *biso*, it is necessary to discuss the possible position of
auxiliaries in JM. I have shown that when auxiliaries co-occur with a main verb, they
need to appear to the left of the main verb. In addition, I have demonstrated that
auxiliaries show behavior different from that of main verbs, and are thus a distinct
category of lexemes. Based on these facts, the possible structure for (4)a, repeated in (30)
below, can roughly be represented as in (31).

(30) *dioʔ lagi   baco buku=ɲo di   kamar*
     3   PROG   read book=3   LOC room
     'He is reading his book in the bedroom.'

(31)
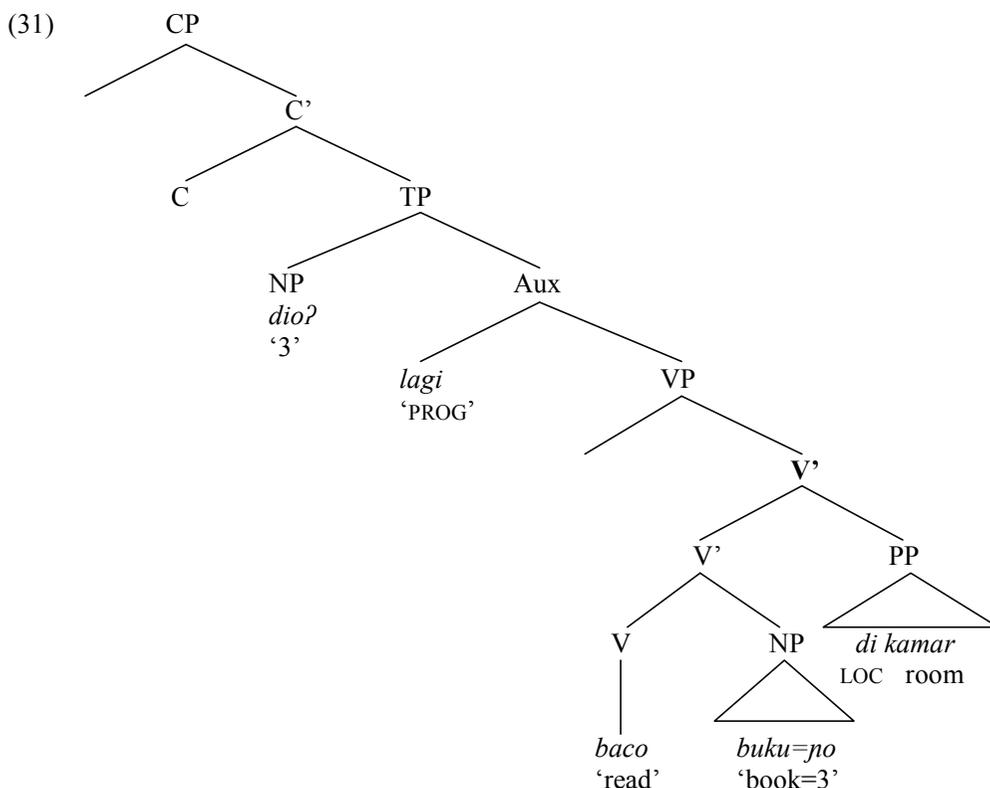
As shown in the structure above, the auxiliary is in a position different from that of the
main verb. The position of the auxiliary shown in (31), however, can be analyzed in two
different ways. The first analysis treats the auxiliary as the head of an intermediate
projection; whereas a second analysis treats the auxiliary as an adverbial modifier that
adjoins to VP. I shall next argue that the first analysis which treats the auxiliary as the
head of an intermediate projection is superior.

Section 3.3 shows that multiple auxiliaries are possible in JM. When an aspectual
auxiliary and a modal auxiliary co-occur, for example, the aspectual auxiliary generally
precedes the modal auxiliary (see examples in (17)). Example (17)c is repeated below.

(32) *adeʔ   aku la   bole bawaʔ motor   deweʔ*
     younger.sibling 1SG PFCT may ride   motorcycle alone
     'My younger brother has been allowed to ride his own motorcycle.'

Sentence (32) is ungrammatical if the modal auxiliary precedes the aspectual marker, as shown below.

(33) *adeʔ   aku bole la   bawaʔ motor   deweʔ
       younger.sibling 1SG may PFCT ride   motorcycle   alone
       'My younger brother has been allowed to ride his own motorcycle.'

If auxiliaries are in fact adverbs, it is expected that sentence (33) would be grammatical. Such a restriction can be explained if auxiliaries are in head positions. So, I claim that auxiliaries are heads in JM.

Now, let us turn our discussion to *biso*. In section 3.2, I showed that *biso* is ambiguous in its interpretation because it can be used to express ability, permission, and possibility, as illustrated in examples (7) to (9), repeated below as (34) to (36).

(34) *maria biso kərjo sampe malam*
       Maria can work until   night
       a. 'Maria is able to work until night.'
       b. 'Maria is permitted to work until night.'
       c. It is possible that Maria will work until night.'

(35) *oraŋ-tu   biso baŋun gəreja=ɲo lagi*
       person-DEM.DIST can build   church=3   again
       a. 'They are able to build their church again.'
       b. 'They are permitted to build their church again.'
       c. 'It is possible that they will build their church again.'

(36) *ida biso dataŋ kageʔ malam*
       Ida can come later night
       a. 'Ida is able to come tonight.'
       b. 'Ida is permitted to come tonight.'
       c. 'It is possible that Ida will come tonight.'

Given the ambiguous interpretations in (34) through (36), it could be claimed that the modal auxiliary *biso* is ambiguous and that its interpretation is determined by some pragmatic means or by the context in which the sentence is used. However, I shall argue that the ambiguity of *biso* follows from the fact that JM distinguishes between root (abilitative and permissive) *biso* and epistemic *biso*. The claim that epistemic modals and root modals have two distinct syntactic positions can also been found in other studies of the world's languages. Picallo (1990), for example, claims that modal verbs in Catalan have two base positions: a higher position which corresponds to epistemic interpretations and a lower position which corresponds to root interpretations. Likewise, Cinque (1999:56) also locates epistemic modals in a higher position than root modals, as shown in the following hierarchy.

(37) $Mood_{speech\ act}$ > $Mood_{evaluative}$ > $Mood_{evidential}$ > $Mod_{epistemic}$ > T(Past) > T(Future) > $Mood_{(ir)realis}$ > Mod_{root} / $Aspect_{habitual}$ / T(Anterior) > $Aspect_{perfect}$ > $Aspect_{progressive}$ / $Aspect_{completive}$ / Voice > V

In section 4.1, I propose two syntactic positions where the modal auxiliary *biso* can be generated. In section 4.2 through 4.4, I present various types of evidence in support of the proposed structure. Specifically, I provide evidence having to do with aspectual auxiliaries, fronting, and adjacent modals. In section 4.5, I provide more data to show that the proposed structure can account for more facts.

4.1. The Base-generated Structure of *Biso*

In this section, I shall present the structure of clauses that contain *biso*. Let us first consider a sentence that contains *biso* and which is ambiguous, such as in (7)/(35), repeated below.
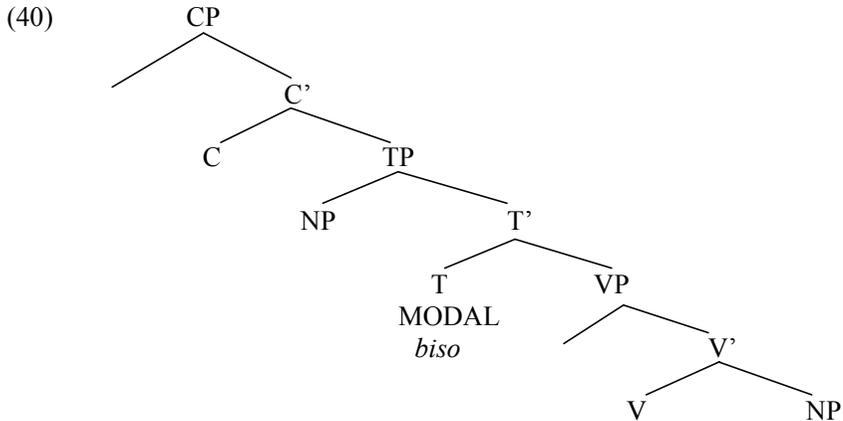
(38) *oraŋ-tu*   *biso baŋun* *gəreja=ɲo lagi*
     person-DEM.DIST can build   church=3   again
     a. 'They are able to build their church again.'
     b. 'They are permitted to build their church again.'
     c. 'It is possible that they will build their church again.'

At the beginning of section 4, I claim that auxiliaries are heads. I shall now claim that the ambiguity of (7)/(35)/(38) follows from the fact that, in a sentence with this word order, *biso* can be generated in two different syntactic positions. The modal auxiliary *biso* that receives the root (abilitative or permissive) interpretation is base-generated as the head of an intermediate projection between TP and VP, a position which I will now refer to as 'VP$_a$'. This structure is illustrated below.[7]

(39)
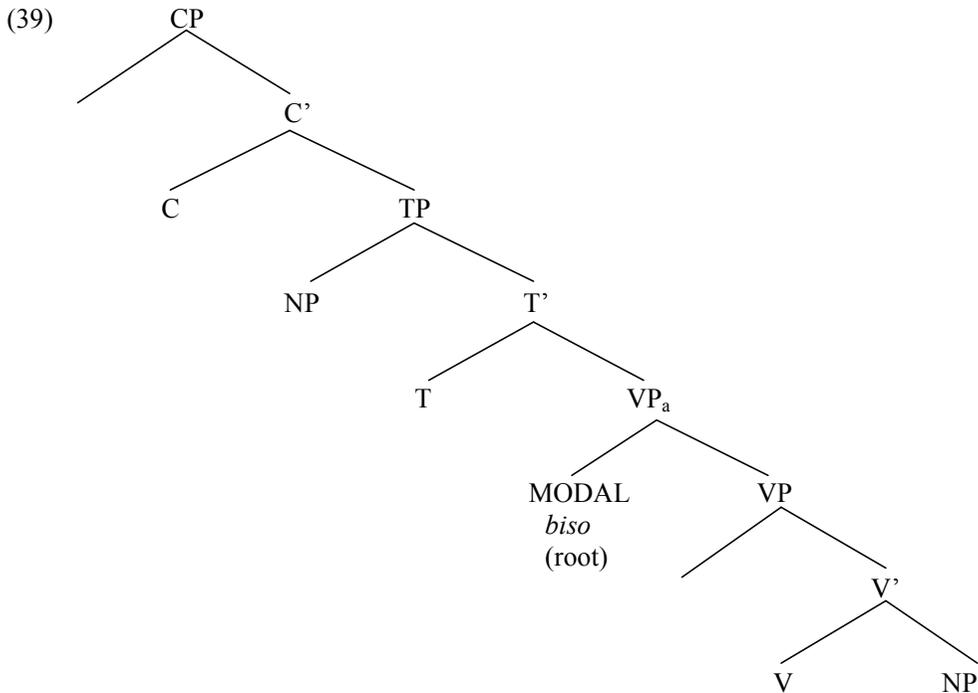
In contrast, the modal auxiliary *biso* that receives an epistemic interpretation is base-generated as the head of TP; thus, the clause structure can be as shown below:

---

[7] Cole, Hara and Yap. (2008) propose a similar position for Type I Auxiliary in Peranakan Javanese.

(40)

```
              CP
             /  \
                 C'
                /  \
               C    TP
                   /  \
                  NP   T'
                      /  \
                     T    VP
                   MODAL  /  \
                    biso      V'
                             /  \
                            V    NP
```

In what follows, I shall present various pieces of evidence in support of the proposed structures represented in (39) and (40).

4.2. Evidence from Aspectual Auxiliaries

As I described in section 3.3, an aspectual auxiliary such as *lagi* 'PROG', la 'PFCT', or *masi* 'still', can co-occur with a modal auxiliary, like *biso* 'can'. I also mentioned that, despite the fact that aspectual auxiliaries typically precede the modal auxiliaries, when *biso* co-occurs with an aspectual auxiliary, the aspectual auxiliary can either precede or follow *biso*. Interestingly, as I have mentioned, the interpretation of *biso* depends on the position of the aspectual auxiliary. If *biso* follows the aspectual auxiliary, *biso* can only have the root (abilitative or permissive) interpretation, as shown in (41). However, if *biso* precedes the aspectual marker, the abilitative and permissive interpretations are suppressed and only the epistemic interpretation is possible, as shown in (42).

(41) a. *maria la   biso ŋambeʔ baraŋ=ɲo*
          Maria PFCT can ACT.take thing=3
          'Maria has been able to take her stuff.'
          'Maria has been permitted to take her stuff.'
          *'It is possible that Maria has taken her stuff.'

      b. *oraŋ-tu   lagi   biso dataŋ*
          person-DEM.DIST PROG   can   come
          They currently are able to come.'
          'They are being permitted to come.'
          *'It is possible that they are coming.'

      c. *ali   masi biso nanam   maŋgo di   kəbon-tu*
          Ali   still can ACT.plant mango LOC   garden-DEM.DIST
          'Ali is still able to plant mangoes in that garden.'
          'Ali is still permitted to plant mangoes in that garden.'
          *'It is possible that Ali are still planting mangoes in that garden.'

(42) a. *maria biso la   ŋambeʔ baraŋ=ɲo*
          Maria can PFCT ACT.take thing=3
          'It is possible that Maria has taken her stuff.'
          *'Maria has been able to take her stuff.'
          *'Maria has been permitted to take her stuff.'

b. *oraŋ-tu   biso lagi dataŋ*
    person-DEM.DIST can PROG come
    'It is possible that they are coming.'
    *'They currently are able to come.'
    *'They are being permitted to come.'

c. *ali   biso masi nanam   maŋgo*
    Ali   can still ACT.plant mango
    'It is possible that Ali are still planting mangoes in that garden.'
    *'Ali is still able to plant mangoes in that garden.'
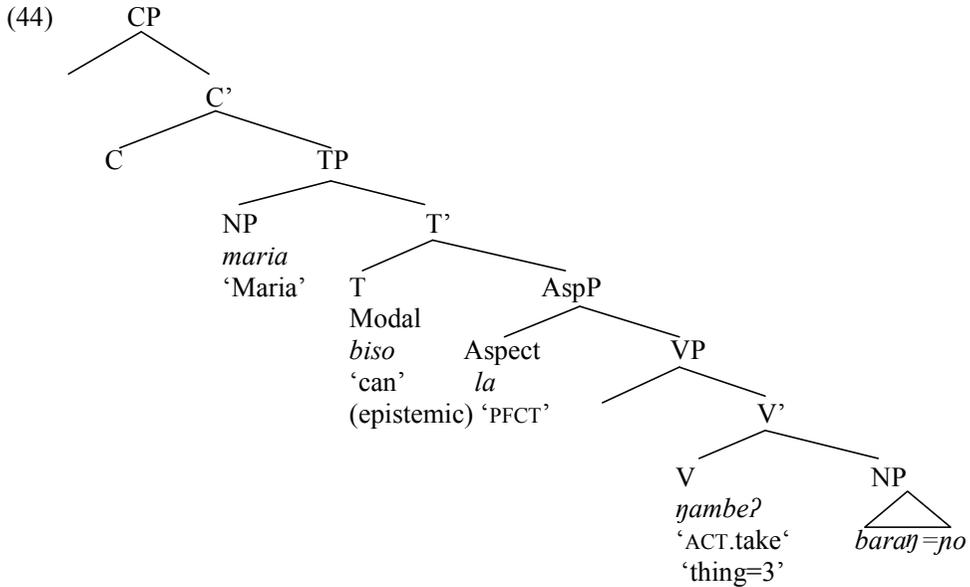   *'Ali is still permitted to plant mangoes in that garden.'

The aspectual auxiliary *la* in (41)a, *lagi* in (41)b, and *masi* in (41)c, precede *biso*. Although they are grammatical, these sentences are not ambiguous in their interpretation. They can receive a root (abilitative and permissive) interpretation, but not an epistemic interpretation. In contrast, when the aspectual auxiliary follows *biso*, as shown in the sentences in (42), the only available interpretation is that of possibility. The abilitative and permissive interpretations are not possible in this construction.

Now let us consider how the proposed structures would handle these facts. Assuming that the aspectual auxiliary is generated in AspP, between TP and VP$_a$, it would follow that when *biso* appears after the aspectual auxiliary, it only receives the root reading; whereas, when *biso* precedes the aspectual auxiliary, it only receives the epistemic reading.

Example (43) roughly illustrates the structure of (41)a in which *biso* follows the aspectual marker *la* 'PFCT'.

(43)
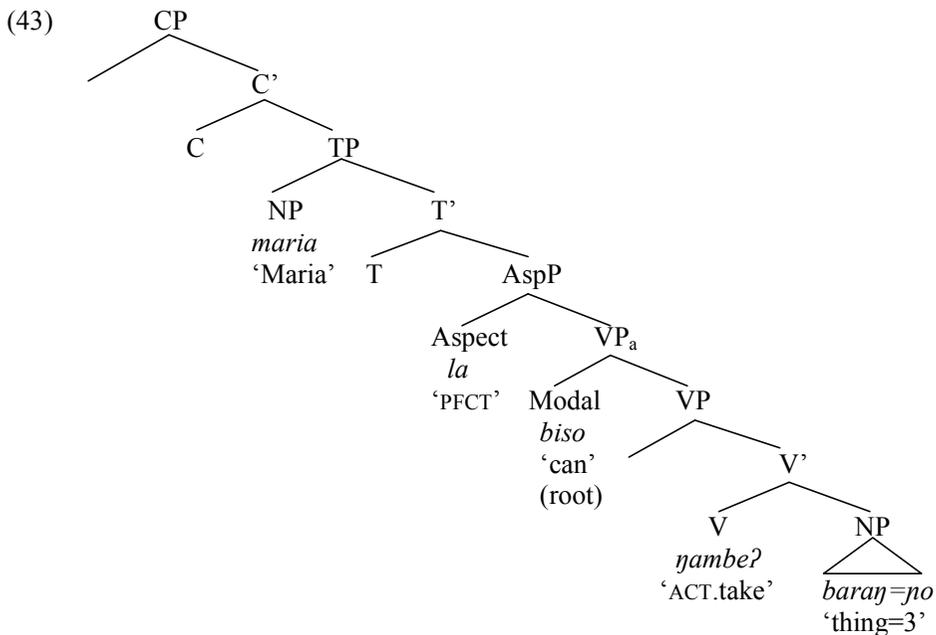
In contrast, (44) roughly illustrates the structure of (42)a in which *biso* precedes the aspectual marker *la* 'PFCT'.

(44)

```
                          CP
                          |
                          C'
                     ┌────┴────┐
                     C         TP
                          ┌────┴────┐
                         NP         T'
                        maria  ┌────┴────────┐
                       'Maria' T            AspP
                              Modal    ┌─────┴──────┐
                              biso  Aspect         VP
                              'can'   la      ┌─────┴────┐
                           (epistemic) 'PFCT'            V'
                                              ┌──────────┴────┐
                                              V              NP
                                            ŋambeʔ          /\
                                           'ACT.take'    baraŋ=ɲo
                                            'thing=3'
```

As shown in (44), the epistemic *biso* is generated in T, above the aspectual marker. Therefore, *biso* can only receive the epistemic interpretation.

In contrast, the hypothesis that *biso* is ambiguous and that its interpretation is determined by some kind of pragmatic means cannot account for the fact that different word orders trigger different interpretations. If the ambiguity of the sentences containing *biso* occurs because *biso* is ambiguous, then the word order should play no role in the interpretation of *biso*. The data in this section have clearly shown that different word orders *do* trigger different interpretations of *biso*.

4.3. Evidence from Fronting

Further evidence in favor of this analysis comes from fronting constructions. JM allows the fronting of *biso* to the position preceding the subject of the clause, as shown in (45) below. However, when *biso* is fronted, it no longer is ambiguous. The fronted *biso* can only be interpreted epistemically.

(45) a. biso *ida   la   ambeʔ   panci-tu*
         can Ida   PFCT   take   pot-DEM.DIST
         'It is possible that Ida has taken the pot.'
         *'It is the case that Ida has been able to take the pot.'

    b. *biso budi   la   bukaʔ   pintu-tu*
         can Budi   PFCT   open   door-DEM.DIST
         'It is possible that Budi has opened that door.'
         *It is the case that Budi has been able to open that door.'

Let us now examine how the interpretation of (45) can be explained based on the proposed syntactic structure. If the fronted *biso* is base-generated in the epistemic modal position, i.e. in T, as shown by the structure in (40)/(44), then *biso* undergoes head-movement to C in order to get the word order in (45). This is illustrated below (I only show the structure for (45)b).

(46)
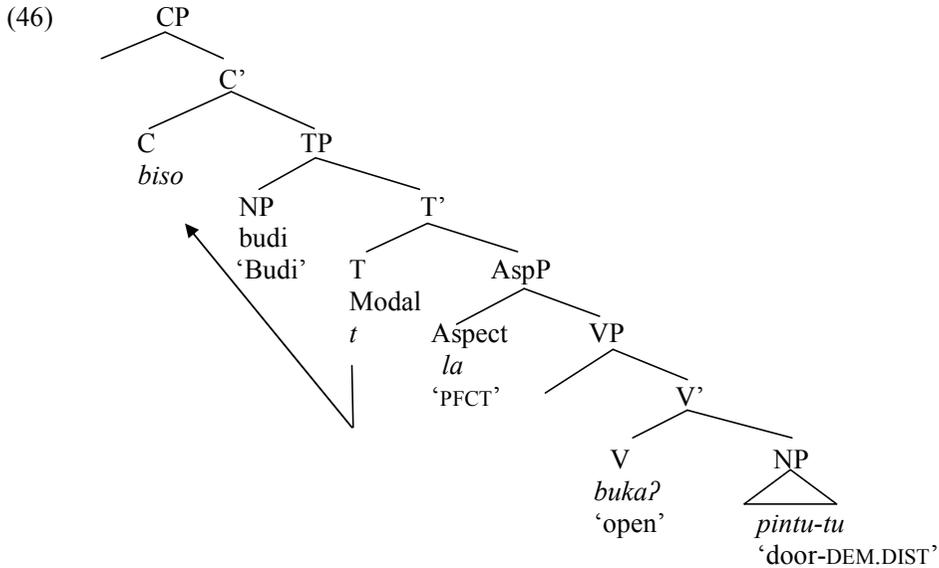
As illustrated in (46), epistemic *biso* has moved from T to C, and thus fronted *biso* in (45) is interpreted epistemically.

Let us now examine whether or not the fact that the fronted *biso* cannot receive the root interpretation can be predicted. If fronted *biso* is base-generated as the head of VP_a, as shown by the structure in (39)/(43), it must undergo cyclic head movement, first to T and then to C, as illustrated in (47) below. However, this movement is ruled out because the movement of *biso* to T is blocked by *la* (which is generated in the head of the AspP) due to the Head Movement Constraints (Travis, 1984) which states that an X^0 category can only move to a position that governs its maximal projection.

(47)
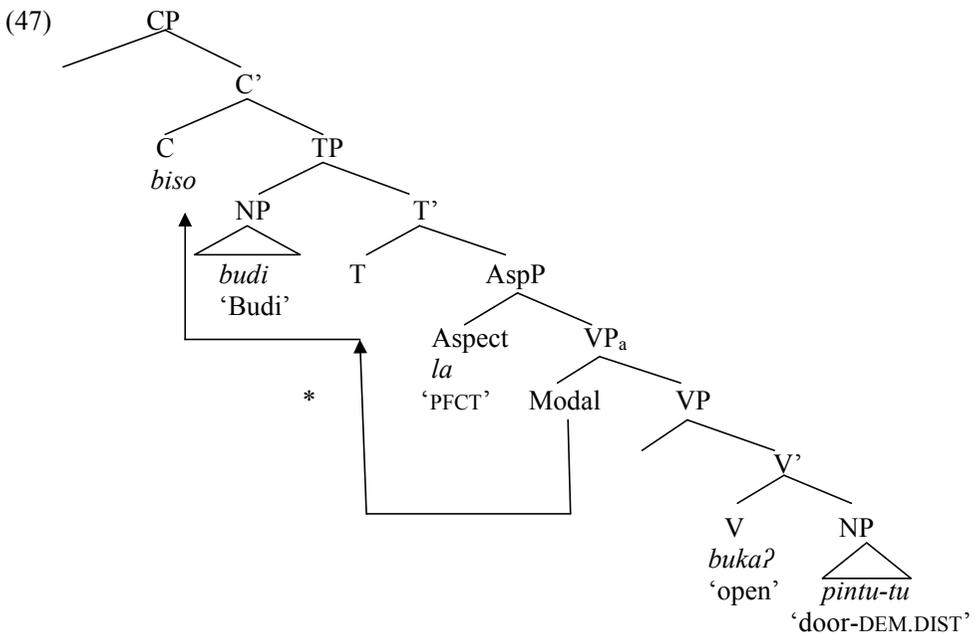
In short, the fact that *biso* in (45) only receives an epistemic interpretation indicates that the fronted *biso* is the epistemic *biso,* which is base-generated in T, and not the root *biso,* which is a head in VP$_a$.

4.4. Evidence from Adjacent Modals

JM also allows the modal auxiliary *biso* to co-occur with another modal (see section 3.3). As with aspectual auxiliaries, the modal that co-occurs with *biso* can either precede or follow *biso*. This is illustrated by the examples in (48) below.

(48) a. *kau   harus   biso   ŋaŋkat   meja=ɲo*
       2SG   must   can   ACT.lift   table=3
       'You must be able to lift the table.'
       *'It is possible that you must lift the table.'

   b. *kau   biso   harus   ŋaŋkat   meja=ɲo*
      2SG   can   must   ACT.lift   table=3
      'It is possible that you must lift the table.'
      *'You must be able to lift the table.'

(48)a, in which *biso* follows *harus* 'must', only gets the root interpretation. In contrast, when *biso* precedes *harus,* as in (48)b, the sentence only exhibits the epistemic interpretation. The fact that *biso* only receives one interpretation with one word order and another interpretation with another word other further supports the claim that *biso* is projected in two different syntactic positions.

4.5. More data

If the analysis that the epistemic *biso* and root *biso* are generated in different syntactic positions, it would be expected that these two types of *biso* can co-occur in the same clause.[8]

Sentence (49) below contains two instances of *biso*.

(49) *Ali   biso   biso   beli   motor-tu*
     Ali   can   can   buy   motor-DEM.DIST

Surprisingly, sentence (49) is grammatical only with an epistemic reading and thus must be translated as 'Ali might buy the motorcycle'. In fact, *biso biso* is interpreted as containing a distinct reduplicated form of *biso,* which happens to mean 'perhaps'. This fact appears problematic for the current analysis.

Despite the fact that (49) appears to provide a counter argument to the proposed analysis, the following sentences are grammatical.

(50) a. *robi   biso   harus   biso   bəraŋkat   besoʔ*
        Robi   can   must   can   leave   tomorrow
        'Robi probably has to to be able to leave tomorrow.'

   b. *susi   biso   daʔ   biso   dataŋ   kageʔ malam.*
      Susi   can   NEG   can   come   later   night
      'Susi may not be able to come tonight.'

The sentences in (50) also contain two *biso*'s; however, unlike sentence (49), in these sentences, the two *biso*'s are not adjacent. The aspectual auxiliary *harus* 'must' in (50)a and the negative marker *daʔ* in (50)b intervene between two *biso*'s and the sentences are judged grammatical. More importantly, both epistemic and root interpretations are present.

In addition, there are also two *biso*'s in the sentences in (51) below. In these sentences, one *biso* is higher than the surface subject and the other *biso* appears immediately before the main verb. Much like the sentences in (50), the sentences in (51) are also judged grammatical.

(51) a. *biso ali la biso beli motor-tu*
        can Ali PFCT can buy motorcycle-DEM.DIST
        'Ali has probably been able to buy that motorcycle.'

   b. *biso robi harus biso bəraŋkat besoʔ*
        can Robi must can leave tomorrow
        'Robi probably has to be able to leave tomorrow.'

The fact that sentences in (50) and (51) are grammatical and contain both epistemic and abilitative interpretations supports the claim that *biso* can occupy two syntactic positions because *biso* simultaneously occurs in both syntactic positions in these sentences. Reasons for the ungrammaticality of (49) are unknown.

5. Conclusion

This paper has presented a description of tense, aspectual, and modal auxiliaries in Jambi Malay. Aspectual auxiliaries and modal auxiliaries in JM pattern like the auxiliaries in European SVO languages in that they must appear to the left of the main verb. It has been shown that these auxiliaries are better treated as heads. In addition, this paper has provided an analysis of *biso* 'can'. The fact that the modal auxiliary *biso* can have either a root (abilitative or permissive) interpretation or an epistemic (possibility) interpretation can be accounted for by proposing two distinct syntactic positions for *biso*. This claim is supported by the relationship between the word order and interpretation of sentences that contain aspectual markers and *biso,* sentences that involve fronting, sentences in which *biso* co-occurs with another modal, and sentences in which *biso* occurs twice.

Abbreviations

1	first person	2	second person
3	third person	ACT	active
APPL	applicative	ASP	aspect
DEM	demonstrative	DIST	distal
FUT	future	INTR	intransitive
JM	Jambi Malay	LOC	locative
PASS	passive	PFCT	perfective
PL	plural	PROG	progressive
SG	singular	SVO	Subject Verb Object

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