The syntax of modality in Tigrinya

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1 Introduction

1.1 The Syntax of Modality

- **Base-Conditioned Argument Structure.** Early generative analyses hypothesized that the modal base (root v. epistemic) corresponds to a thematic difference that is reflected in the syntax (Jackendoff 1972, Picallo 1990, Brennan 1993; cf. Postal 1974, Bhatt 1998, Wurmbrand 1999, Barbiers 2006).

(1) *Epistemic modals claimed to be raising structures*
Nicole$_1$ **might** [t_1 leave early]

(2) *Root modals claimed to be control structures*
Nicole$_1$ **must** [PRO$_1$ leave early]

- **Ordering Source-Conditioned Argument Structure.** There are more recent claims that the flavor/ordering source of root modals corresponds to thematic differences that are reflected in the syntax (Brennan 1993, Nauze 2008; cf. Bhatt 1998, Wurmbrand 1999, von Fintel & Iatridou 2009).

(3) *Circumstantial root modals claimed to be intransitive*
Plants$_1$ **can** [t_1 grow here]
"It's possible for plants to grow here."

(4) *Deontic/dynamic root modals claimed to be transitive*
Nicole$_1$ **can** [PRO$_1$ swim]
"Nicole has an ability to swim."

- **Force-Conditioned Modal Argument Structure?** A conceivable, although under-realized and under-explored, possibility is that differences in the modal force (necessity/strong v. possibility/weak) correspond to factors that are reflected in the syntax (e.g., Milsark 1974, Hackl & Nissenbaum 2012).

(5) *Hypothetical: strong modals are raising structures*
Nicole$_1$ **should** [t_1 leave early]

(6) *Hypothetical: weak modals are control structures*
Nicole$_1$ **can** [PRO$_1$ leave early]

- **Encoding Modal Force v. Base.** It is after all a point of cross-linguistic variation whether modal elements encode their strength/quantificational force or their base (e.g., Matthewson 2010, Deal 2011); compare English and St'át'imcets [st͡ɬʼæt͡ɬʼjəmxət͡ʃ].

(7) *Epistemic modal base encoded on* [k'a]*; context-dependent force*
wá7=**k'a** s-t'al   l=ti=tsítcw-s=a   s=Philomena
be=EPIS STAT-stop in=DET=house-3S.POSS=EXIS nom=Philomena
'Philomena **{must / might}** be in her house.'

(8) *Deontic modal base encoded on* [ka]*; context-dependent force*
lán=lhkacw=**ka**   áts'x-en ti=kwtámts-sw=a
already=2S.SUBJ=DEON see-DIR DET=husband-2S.POSS=EXIS
'You **{must / may}** see your husband now.'

1.2   Modality in Tigrinya

- **Verbal Modal Argument Structure.** A proper analysis of modality in Tigrinya (Ethiosemitic, Eritrea and Ethiopia; SOV) appears to reveal a force-conditioned split in the argument structure of verbal modals.

- **Our Claims.** This talk will provide an alternative account of this observation that makes three specific claims:[1]

    – *§4 Auxiliary v. Main Verb Modals*. We substantiate the claim that modality is expressed with auxiliaries and pseudo-modal verbs (e.g., Yohannes 2016).

    (9)   *Modal auxiliaries in mono-clausal structures*

    [CP Ɂit-a   səbəjti   [vP ti-xəjid   ] **ti-xəwwin**   ]
    that-FS woman.F   S3FS-leave.IPFV   S3FS-might.IPFV
    'The woman might leave.'

    (10)   *Pseudo-modal verbs in bi-clausal structures*

    [CP [CP Ɂit-a   səbəjti   ki-ti-xəjid   ] **ji-gibbaɁ-a**   ]
    that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
    'The woman needs to leave.'

    – *§5 Strong v. Weak Modal Argument Structure*. The argument structure of pseudo-modal verbs correlates with their strength (*pace* Yohannes 2016, Gebregziabher 2021.

    (11)   *Strong pseudo-modal verbs are unaccusative Exceptional Object Marking (i.e., long-distance agreement) constructions*

    [CP   expl   [CP Ɂit-a   səbəjti   ki-ti-xəjid   ] **ji-gibbaɁ-a**   ]
    that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
    'The woman needs to leave.'

    (12)   *Weak pseudo-modals verbs are transitive Subject Control constructions*

    [CP Ɂit-a   səbəjti$_1$ [CP   PRO$_1$ ki-ti-xəjid   ] **ti-xiɁil**   ]
    that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-able.to.IPFV
    'The woman can leave.'

    – *§6 Modal Categories*. The force-correlated difference in argument structure is more plausibly linked to a correlation with the grammatical category of the pseudo-modal verbs.

	Force	Base	Category	Argument Structure
/kwn/	weak	epis	Aux	—
/gbɁ/, /hlw/	strong	root/epis	*v*	Exceptional Object Marking
/xɁl/	weak	root/epis	V	Subject Control

Table 1: Summary of verbal modal elements in Tigrinya

2   Background on Tigrinya

2.1   Ethnographic Information

- **Classification.** Tigrinya is an Ethio-Semitic language closely related to Tigré and Amharic and more distantly to Arabic and Hebrew.

- **Distribution.** Tigrinya is spoken by approximately 9 million people mainly in central Eritrea as the national language and in the Tigray region in northern Ethiopia.
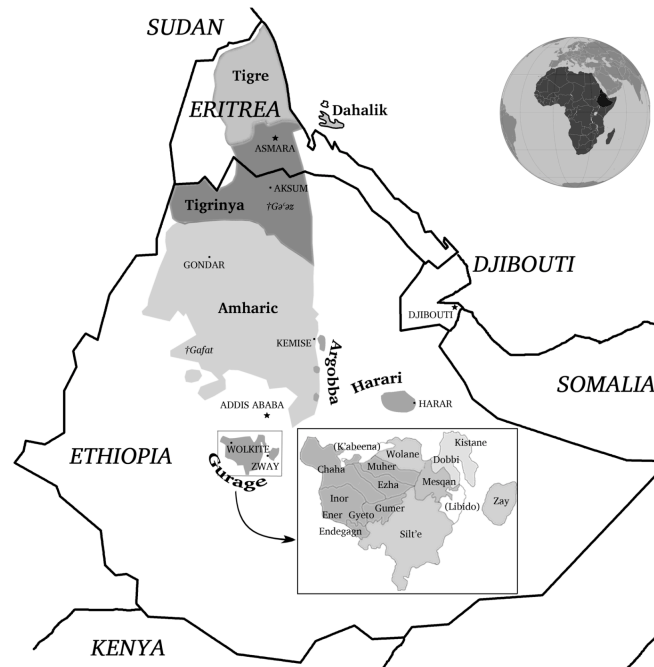

Figure 1: Adapted from The Semitic Languages (Weninger 2011); credit: Ronny Meyer

2.2   Grammatical Properties

- **Head-Finality.** Tigrinya is a fairly rigid head-final language with canonical SOV(Aux) word-order.

(13) Binyam mäts'ḥaf yɨ-ts'ḥif   näbbär-∅
      Binyam book   S3MS-write.IPFV AUX.PAST-S3MS
      'Binyam was writing a book.'   (Yohannes 2016:232, (38b))

- **Nominative-Accusative Alignment.** Subjects of transitive and intransitive predicates are morphologically aligned with unmarked nominative case.

(14) *Grammatical subjects are morphologically aligned*

 a. **ʔɨt-a** **t'ɨrmuz** tä-säbir-a
  that-FS bottle.F DT-break.PFV-S3FS
  'The bottle broke.'

 b. **Yonas** n-ät-a t'ɨrmuz säbir-u-wa
  Yonas.M DOM-that-FS bottle break.PFV-S3MS-O3FS
  'Yonas broke the bottle.' (Kifle 2011:56, (55a–b))

- **Nonconcatenative Root Morphology.** Tigrinya possesses a triconsonantal root system, in which TAM information is expressed through transfixed vowel templates.

- **Agglutinative Subject Agreement.** Subject agreement morphemes on verbal elements vary between prefixal and suffixal paradigms on the basis of tense/aspect.

(15) *Perfective verb form*
säbär-**ä**
break.PFV-S3MS
'He broke.'

(16) *Imperfective verb form*
jɨ-säbbir
S3MS-break.IPFV
'He breaks.'

- **Agglutinative Object Marking.** The structurally highest definite/specific internal argument is obligatorily cross-referenced by an object marker on verbal predicates as the result of an AGREE relation (Kifle 2011, Gebregziabher 2013, 2021, Overfelt 2022).

(17) a. Yonas **n-ät-a** **t'ɨrmuz** säbir-u-**wa**
  Yonas.M DOM-that-FS bottle break.PFV-S3MS-O3FS
  'Yonas broke the bottle.' (Kifle 2011:56, (55a–b))

b.
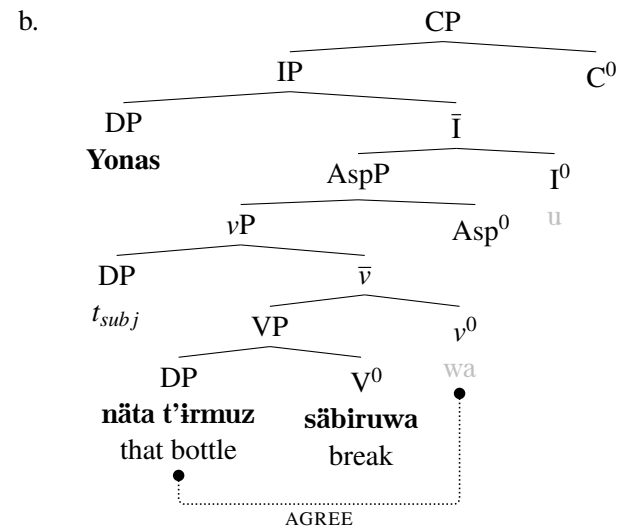
3   Basic Properties of Tigrinya Modals

3.1   Encoding Modality in Tigrinya

- **Encoding Modality.** In general, modal elements in Tigrinya are specified for their modal force, while the modal base is context-dependent.[2]

- **A Weak Modal.** The root /xʔl/ 'able to/can' encodes weak (possibility) root and epistemic modality.

(18) ʔit-a   səbəjti   ki-ti-xəjid   **ti-xiʔil**
      that-FS woman.F PROS-S3FS-leave.IPFV S3FS-able.to.IPFV
      'The woman can leave.' (*root*)

(19) ʔit-a   məftəħ ab   borsa ki-ti-hilu   **ti-xiʔil**   ʔi-jja
      that-FS key.F   LOC bag PROS-S3FS-COP S3FS-able.to.IPFV AUX-S3FS
      'The key could be in her bag.' (*epistemic*)

- **A Pair of Strong Modals.** The roots /gbʔ/ 'need to/should' and /hlw/ 'have to/must' encode strong (necessity) root and epistemic modality.

(20) ʔit-a   səbəjti   ki-ti-xəjid   **ji-gibbaʔ-a**
      that-FS woman.F PROS-S3FS-leave.IPFV S3MS-need.to.IPFV-O3FS
      'The woman needs to leave.' (*root*)

(22) səgən ʔaʁ'ədim-a ki-ti-bits'iħ   **ʔall-o-wa**
      Segen early-FS   PROS-S3FS-arrive.IPFV have.to.PFV-S3MS-O3FS
      'Segen has to arrive early.' (*root*)

(21) ʔit-a   məftəħ ab   borsa ki-ti-hilu   **ji-gibbaʔ-a**
      that-FS key.F   LOC bag PROS-S3FS-COP S3MS-need.to.IPFV-O3FS
      'The key should be in her bag.' (*epistemic*)

(23) ʔit-a   məftəħ ab   borsa ki-ti-hilu   **ʔall-o-wa**
      that-FS key.F   LOC bag PROS-S3FS-COP have.to.PFV-S3MS-O3FS
      'The key has to be in her bag.' (*epistemic*)

- **A Weak Epistemic Modal.** The root /kwn/ 'might' encodes weak (possibility) epistemic modality.

(24) ʔit-a   səbəjti   ti-xəjid   **ti-xəwwin**
      that-FS woman.F S3FS-leave.IPFV S3FS-might.IPFV
      'The woman might leave.'

- **Strong Epistemic Modality.** Strong epistemic modality also comes from the combination of /kwn/ 'might' and /hlw/ 'have to/must'.

(25) niss-u n-ət-i   bani   bäliʕ-wo   **ki-Ø-xəwwin**   **ʔall-o-wo**
      he   DOM-that-FS bread.M eat.PFV-O3MS PROS-S3MS-might.IPFV have.to.PFV-S3MS-O3MS
      'He must have eaten the bread.'
      Lit. *He has to might have eaten the bread.

	Force	Base
/kwn/	weak	epis
/gbʔ/, **/hlw/**	strong	root/epis
/xʔl/	weak	root/epis

Table 2: Inventory of verbal modal elements in Tigrinya

3.2   Previous Analyses of Tigrinya Modals

- **Grammaticalization.** Yohannes (2016) proposes a categorial difference between the auxiliary /kwn/ 'might' and a clause-embedding verb /gbʔ/ 'need to.'

(26) *The root* /kwn/ *is an auxiliary*

[CP binyam [vP siwwa   sätj-u   ] **ji-xäwwɨn**   ]
      Binyamj   local.beer drink.PFV-S3MS   S3MS-might.IPFV
'Binyam might have drunk local beer.'   (Yohannes 2016:205, (18g))

(27) *The root* /gbʔ/ *is a verb*

[CP [CP kɨ-t-käjjɨd   ] **ji-gɨbbaʔ**   ]
            PROS-S2MS-help.IPFV   S3MS-must.IPFV
'You need to go.'   (Yohannes 2016:207, (19a))

- **Optional Raising-to-Subject.** In Yohannes 2016 modal verbs are treated as unaccusative predicates that appear in several syntactic frames.[3]

  - *Raising-to-Subject*. Modal verbs may appear in Raising-to-Subject configurations as indicated by shared agreement with the logical subject (Yohannes 2016:204).

(28) [CP **nissa** [CP t_{subj} kɨ-$\boxed{\text{t}}$-mäṣṣiʔ   ] $\boxed{\text{ti}}$-xiʔil   näjr-$\boxed{\text{a}}$
          she   COMP-S3FS-come.IPFV   S3FS-able.to.IPFV AUX.PAST-S3FS
'It could have been possible for her to come.'   (Yohannes 2016:204, (17c))

  - *Expletive with Embedded Subject*. Expletive matrix subjects appear with embedded subjects, as indicated by default subject agreement on the modal verb (Yohannes 2016:213).

(29) [CP *expl* [CP (**nissɨxa**)   kɨ-$\boxed{\text{t}}$-käjjɨd   ] $\boxed{\text{jɨ}}$-gɨbbaʔ   ]
                  you.NOM.MS COMP-S2MS-help.IPFV   S3MS-must.IPFV
'You need to go.'   (Yohannes 2016:207, (19a))

  - *Promotion of the Matrix Applied Object*. Expletive subjects appear with topicalized and nominative marked applicative objects, as indicated by default subject agreement and object marking on the modal verb (Yohannes 2016:217).

(30) [CP (**nissɨxa**)   *expl* [VP t_{obj} [CP kɨ-$\boxed{\text{t}}$-käjjɨd   ] $\boxed{\text{jɨ}}$-gɨbbaʔ-$\boxed{\text{akka}}$]]
          you.NOM.MS   COMP-S2MS-help.IPFV   S3MS-must.IPFV-O2MS
'You need to go.'   (Yohannes 2016:207, (19b))

- **Obligatory Raising-to-Object-to-Subject.** Embedded arguments are promoted to matrix subject via a Spec,Appl, as indicated by nominative case on the logical subject and object marking on the modal (Gebregziabher 2021).

(31) [CP **nɨssa** [VP t_{subj} [CP t_{subj} kɨ-t-məs's'i?   ] ʔallew-$\boxed{\text{wa}}$]]
          she   FUT-S3FS-come.IPFV   HAVE.PFV-O3FS
'She has to come.'   (Gebregziabher 2021:104, (43))

4   Auxiliary v. Main Verb Modals: A Categorial Difference

> **Claim I:** *Modality is expressed with both modal auxiliaries and pseudo-modal verbal elements (see also Yohannes 2016).*

4.1   A Preview : Modal Auxiliaries v. Modal Verbs Modality

- **Epistemic Modal Auxiliary.** The epistemic auxiliary /kwn/ 'might' appears in mono-clausal structures.

(32) a. [CP ʔit-a   səbəjti   [vP tsubj ti-xəjid   ] ti-xəwwin   ]
          that-FS woman.F   S3FS-leave.IPFV S3FS-might.IPFV
          'The woman might leave.'

   b.

- **Strong Modal Verbs.** Strong pseudo-modal main verbs /gbʔ/ 'need to' and /ħlw/ 'have to' embed Exceptional Object Marking constructions.
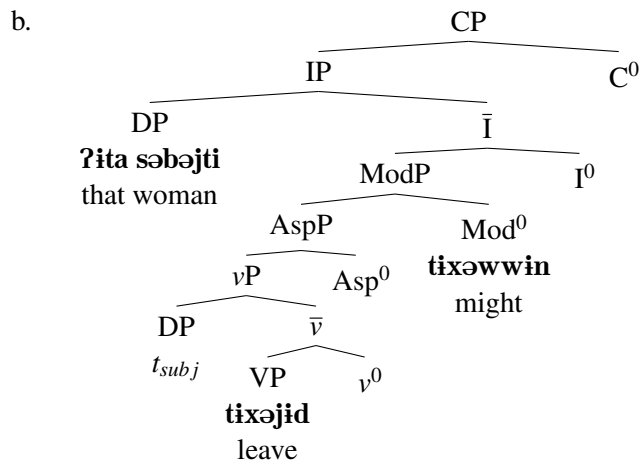
(33) a. [CP *expl* [CP ʔit-a   səbəjti   ki-ti-xəjid   ]
                    that-FS woman.F PROS-S3FS-leave.IPFV
          ji-gibbaʔ-a   ]
          S3MS-need.to.IPFV-O3FS
          'The woman needs to leave.'

   b.
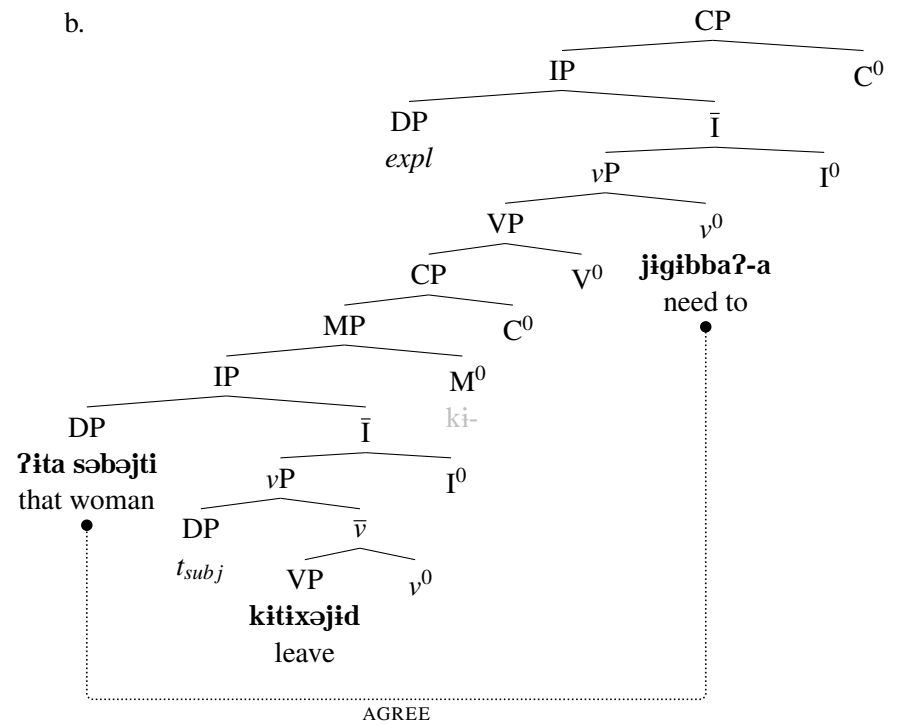
- **Evidence.** The split can be initially motivated by the facts summarized in Table 3 and further developed in the next sections. (Ask about Appendix A for additional evidence.)

	Force	Base	Category	Complement Type	Default Subject Agreement	Object Marking
/kwn/	weak	epis	**Aux**	∅	*	*
/gbʔ/, /hlw/	strong	root/epis	**verb**	*ki-*	✓	✓

Table 3: Summary of the properties of modal elements in Tigrinya (version 1/2).

4.2   Complement Type

- **Mood-marked Complement of Strong Modal Verbs.** Pseudo-modal verbs combine with lexical verbs inflected for aspect and necessarily marked with the prefix *ki-*, identified as a prospective mood marker located in a high MoodP (Yohannes 2016; see also Stolen 2013).[4]

(34)   *Strong modals must appear with mood-marked verbs*

    [CP *expl* [CP ʔɨt-a   səbəjti   ***(kɨ)**-tɨ-xəjɨd   ] jɨ-gɨbbaʔ-a   ]
                   that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
    'The woman needs to leave.'

- **Bare Complement of Epistemic Modal Auxiliary.** The epistemic auxiliary combines with (extended projections of) the predicate, which contains aspectual information but precludes the high MoodP.

(35)   *Epistemic modal auxiliaries cannot appear with mood-marked verbs*

    [CP ʔɨt-a   səbəjti   [vP **(*kɨ)**-tɨ-xəjɨd   ] tɨ-xəwwɨn   ]
          that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-might.IPFV
    'The woman might leave.'

4.3   Subject Agreement on the Modal Element

- **Obligatory Subject Agreement on Epistemic Modal Auxiliary.** Epistemic modals, like auxiliaries, do not license default agreement and must agree with the logical subject along with the main verb.

(36)   *Epistemic modals must agree with the logical subject*

    [CP **ʔɨt-a**   **səbəjti**   [vP tɨ-xəjɨd   ] {**tɨ**/***jɨ**}-xəwwɨn   ]
          that-FS woman.F   S3FS-leave.IPFV   S3FS/S3MS-might.IPFV
    'The woman might leave.'

(37)   *Aspectual auxiliaries must agree with the grammatical subject*

[CP **ħanti səbəjti** [vP may   ti-səti   ] ʔall-{**a/*o**}   ]
    one.FS woman.F   water.M S3FS-drink.IPFV   AUX.PRES-S3FS/S3MS
'A woman is drinking water.'

- **Default Subject Agreement on Strong Modal Verbs.** Default subject agreement is obligatory, reflecting the absence of an external argument, the availability of a null expletive subject, and the unavailability of Raising-to-Subject (*pace* Yohannes 2016, Gebregziabher 2021).

(38)   *Strong modals necessarily show default subject agreement*

[CP *expl* [CP **ʔɨt-a   səbəjti** ki-ti-xəjɨd   ] {***tɨ/jɨ**}-gɨbbaʔ-a   ]
             that-FS woman.F PROS-S3FS-leave.IPFV   S3FS/S3MS-need.to.IPFV-O3FS
'The woman needs to leave.'

4.4   Object Agreement on the Modal Element

- **No Object Agreement on Epistemic Modal Auxilairy.** Epistemic modals, like auxiliaries, cannot cross-reference arguments with object marking morphology.[5]

(39)   *Epistemic modals cannot carry object marking morphology*

[CP **ʔɨt-a   səbəjti** [vP ti-xəjɨd   ] ti-xəwwɨn-**(*a)**   ]
    that-FS woman.F   S3FS-leave.IPFV   S3FS-might.IPFV-O3FS
'The woman might leave.'

(40)   *Aspectual auxiliaries cannot carry object marking morphology*

ʔɨt-i   səbʔaj **n-ət-a**   dəbdabe ts'ɨħif-u-**wa**   ʔall-o**(*-wa)**
that-MS man.M DOM-that-FS letter.F   write.PFV-S3MS-O3FS AUX.PRES-S3MS-O3FS
'That man has written the letter.'   (Keffyalew Gebregziabher, p.c.)

- **Object Agreement on Strong Modal Verbs.** Strong modal verbs (optionally) carry object marking that cross-reference the logical subject, as a result of an exceptional (long-distance; e.g., Bhatt & Keine 2017) agreement relationship between v^0+V^0 and the highest embedded argument.

(41)   *Strong modals (optionally) cross-references the logical subject with object marking.*

[CP *expl* [CP **ʔɨt-a   səbəjti** ki-ti-xəjɨd   ] jɨ-gɨbbaʔ-**a**   ]
             that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
'The woman needs to leave.'

5 Strong Modal Verbs v. Weak Modal Verbs: An Argument Structure Difference

> **Claim II:** *The argument structure of a pseudo-modal verb is correlated with its strength.*

5.1 A Preview : Strong v. Weak Modality Force

- **Strong Pseudo-Modal Verbs**. Strong pseudo-modal verbs /gbʔ/ 'need to' and /ħlw/ 'have to' embed Exceptional Object-Marking constructions.

  (42) a. [$_{CP}$ *expl* [$_{CP}$ ʔit-a səbəjti ki-ti-xəjid   ]
              that-FS woman.F PROS-S3FS-leave.IPFV

      ji-gibbaʔ-a   ]
      S3MS-need.to.IPFV-O3FS
      'The woman needs to leave.'

  b.
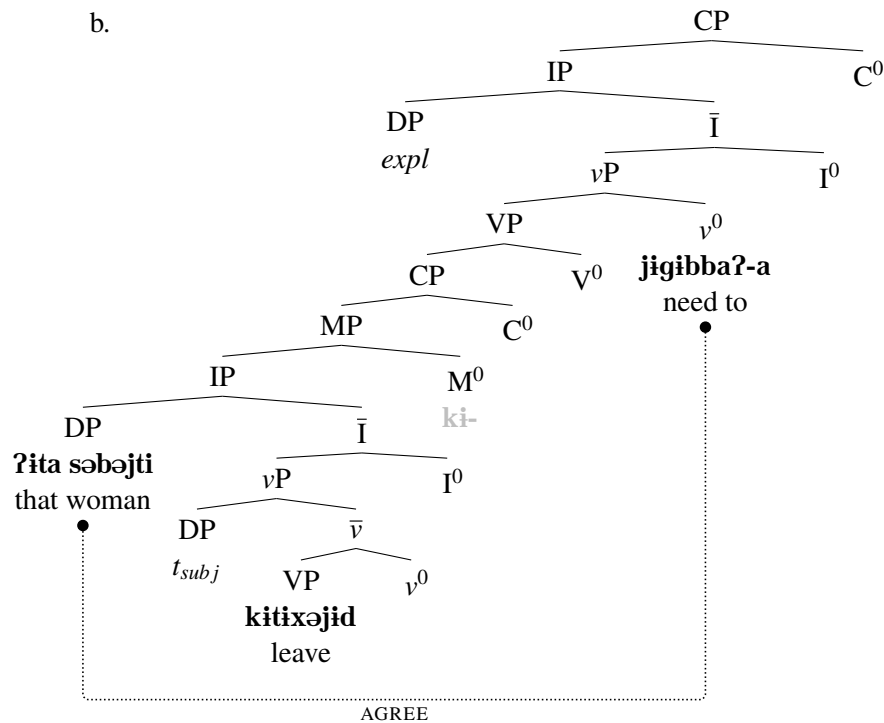
- **Weak Pseudo-Modal Verbs**. The weak pseudo-modal verb /xʔl/ 'able to' embeds Subject Control constructions.

  (43) a. [$_{CP}$ ʔit-a səbəjti$_1$ [$_{CP}$ PRO$_1$ ki-ti-xəjid   ]
              that-FS woman.F   PROS-S3FS-leave.IPFV

      ti-xiʔil   ]
      S3FS-able.to.IPFV
      'The woman can leave.'

  b.
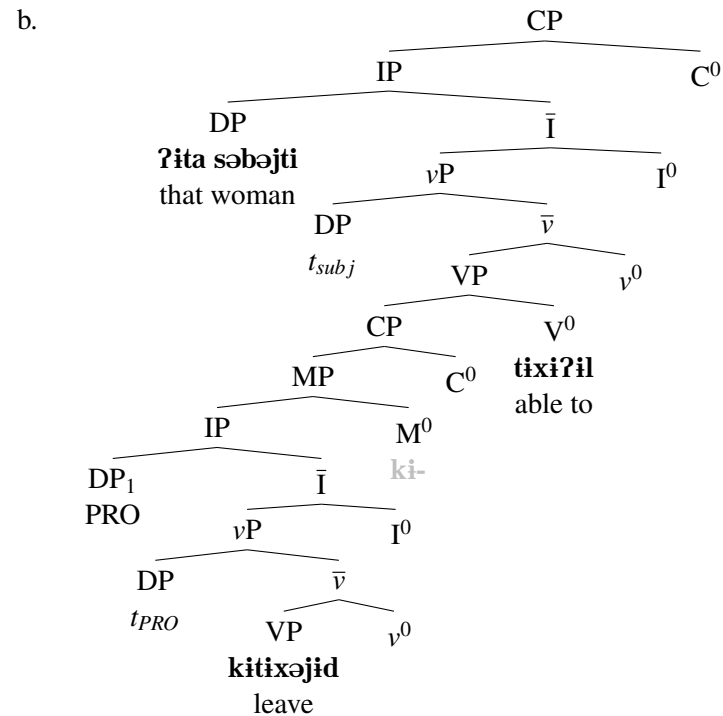
- **Evidence.** The split can be initially motivated by the facts summarized in Table 4 and further developed in the next sections.

	Force	Base	Category	Complement Type	Default Subject Agreement	Object Marking
/kwn/	weak	epis	Aux	∅	*	*
/gbʔ/, /hlw/	strong	root/epis	verb	*ki-*	✓	✓
/xʔl/	**weak**	**root/epis**	**verb**	**kɨ-**	*****	*****

Table 4: Summary of the properties of modal elements in Tigrinya (version 2/2)

5.2   Arguments for the Split

- **Mood-marked Complements.** The weak modal verb obligatory appears with *ki-* marked predicates, indicating a clausal complement containing the high MoodP, comparable to that of strong modals.[6]

(44)   *The weak modal verb must appear with mood-marked verbs*

[CP ʔit-a   səbəjti₁   [CP PRO₁ ***(kɨ)**-ti-xəjid   ] ti-xiʔil   ]
    that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-able.to.IPFV
'The woman can leave.'

(45)   *The strong modal verbs must appear with mood-marked verbs*

[CP *expl* [CP ʔit-a   səbəjti   ***(kɨ)**-ti-xəjid   ] ji-gibbaʔ-a   ]
            that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
'The woman needs to leave.'

- **Subject Agreement.** Unlike the strong modal verbs, the weak modal verbs takes the logical subject as an argument resulting in obligatory subject agreement.

(46)   *The weak modal verb must agree with the logical subject*

[CP ʔit-a   səbəjti₁   [CP PRO₁ ki-ti-xəjid   ] {**tɨ**/***jɨ**}-xiʔil   ]
    that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS/S3MS-can.IPFV
'The woman can leave.'

(47)   *Strong modal verbs cannot agree with the logical subject*

[CP *expl* [CP ʔit-a   səbəjti   ki-ti-xəjid   ] {***tɨ**/**jɨ**}-gibbaʔ-a   ]
            that-FS woman.F PROS-S3FS-leave.IPFV   S3FS/S3MS-need.to.IPFV-O3FS
'The woman needs to leave.'

- **Object Marking.** Assuming that specificity/Case represent a visibility condition on object marking, the element PRO fails to trigger OM on weak modal verbs.

(48) *The weak modal verb cannot appear with object markers*
   [CP **ʔit-a   səbəjti**₁ [CP PRO₁ ki-ti-xəjid   ] **ti-xiʔil-{*a}**   ]
      that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-can.IPFV-O3FS
   'The woman can leave.'

(49) *Strong modals (optionally) cross-references the logical subject with object marking.*
   [CP *expl* [CP **ʔit-a   səbəjti**   ki-ti-xəjid   ] ji-gibbaʔ-**a**   ]
            that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
   'The woman needs to leave.'

5.3   Argument Structure Differences

- **Strong Modal Verbs as EOM Predicates.** With respect to word order and agreement, the syntax of strong modals is similar to other EOM predicates.

(50) *Strong modal verbs carry object marking the cross-references an embedded argument.*
   [CP *expl* [CP (**b-bikeri**) ⃞**Sɛgɛn**⃞ (**b-bikeri**) niʕaʔ-a   maj   ki-ti-seti   ] **ji**-gibbaʔ-⃞**a**⃞   ]
            INS-glass Segen.F INS-glass PRON.DOM-3FS water PROS-S3FS-drink.IPFV   S3MS-need.to-O3FS
   'Segen needs to drink water with a glass.'

(51) *EOM predicates carry object marking that cross-references an embedded subject*
   [CP (***ʔab dʒärdin**) Tesfaj   [CP (**ʔab dʒärdin**) ⃞**ʔane**⃞ ki-u-higgiz-o   ] ji-ts'bəje-⃞**ni**⃞
      LOC garden Tesfay.M   LOC garden   I   PROS-S1S-help-O3MS   S3MS-expect.IPFV-S1S
   'Tesfay expects me to help him in the garden.'

- **Weak Modals Verbs as Control Predicates.** With respect to word order and agreement, the syntax of weak modals is similar to Control predicates.

(52) *The weak root modal verb carries subject agreement that cross-references the matrix subject*
   [CP (***bi-bikeri**) ⃞**Sɛgɛn**⃞ [CP PRO (**bi-bikeri**) maj   ki-ti-seti   ] ⃞**ti**⃞-xiʔil   ]
      INS-glass   Segen.F   INS-glass   water PROS-S3FS-drink.IPFV   S3FS-able.to.IPFV
   'Segen can drink water with a glass.'

(53) *Subject Control predicates subject agreement that cross-references the matrix subjects*
   [CP (***bi-rsas**) ⃞**Tɛsfay**⃞ [CP (**bi-rsas**)   dʒalba ki-i-siʔil   ] fəttin-⃞**u**⃞   ]
      INS-pencil Tesfay.M   INS-pencil boat   PROS-S1S-draw.IPFV   try.IPFV-S3MS
   'Tesfay tried to draw a boat with a pencil.'

- **Against Raising-to-Object.** The logical subject of strong modal verb, like other potential EOM predicates, carries nominative case and cannot carry accusative case morphology.

(54) *No accusative case marking on the embedded subjects of strong root modals*
      *[CP *expl* [CP **n-ət-a**   səbəjti   kɨ-tɨ-xəjɨd   ] jɨ-gɨbbaʔ-a   ]
                DOM-that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS
      'The woman needs to leave.'

(55) *Nominative marking on the embedded subjects of suspected EOM predicates*
      [CP Tesfay [CP **ʔane** kɨ-ʔɨ-hɨggɨz-o   ] jɨ-tsʼbəjə-ni   ]
          Tesfay   I   PROS-S1S-help.IPFV-O3MS   S3MS-expect.IPFV-O1S
      'Tesfay expects me to help him.'

- **Against Backward Raising and Restructuring.** Ask about Appendix B for additional discussion.

6   Strong Modal Verbs v. Weak Modal Verbs: Another Categorial Difference

> **Claim III:** *Argument structure differences between modal verbs are more plausibly linked to their status as either* v *or* V.

6.1   A Preview: Another Categorial Difference

- **Lexical v. Functional Modal Verb.** The correlation between the force of a pseudo-modal and its argument structure reflects factors related to a difference in the category of pseudo-modal verbs.

	Force	Base	Category	Argument Structure
/kwn/	weak	epis	Aux	—
/gbʔ/, /hlw/	strong	root/epis	*v*	Exceptional Object Marking
/xʔl/	weak	root/epis	V	Subject Control

Table 5: Summary of modals in Tigrinya

- **Strong Functional Modal Verb.** Strong modals are light verbs, identified as v^0 (Kratzer 1994, Chomsky 1995), that determine and project their own unaccusative argument structure.

- **Weak Lexical Modal Verb.** As a lexical verb V^0, the weak modal can and does combine with transitivizing argument structure.
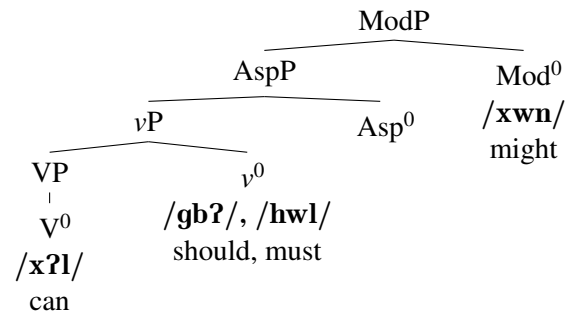
6.2   Hierarchical Positions

- **The Modal Hierarchy**. Modal elements are commonly found in predictable positions within a hierarchy of modal elements (Picallo 1990, Brennan 1993, Cormack & Smith 1998, Cinque 1999, Nauze 2008, Hacquard 2010).

(56)   *The Modal Hierarchy*
       Epistemic Necessity > Epistemic Possibility > TAM > Root Necessity > Root Possibility

- **The Tigrinya Verbal Spine**. The syntax for verbal modal elements in Tigrinya that has been proposed here roughly corresponds to the expected hierarchy.

(57)   *The Tirgrinya Verbal Spine*

```
                    ModP
              _____|_____
           AspP              Mod⁰
        ____|____            /xwn/
      vP       Asp⁰          might
   ___|___
 VP      v⁰
  |    /gbʔ/, /hwl/
 V⁰    should, must
 /xʔl/
  can
```

6.3   Semantic Bleaching

- **Light Verbs are Semantically Bleached.** Light verbs contribute relatively little to the meaning of the predicate, which tends to depend instead on the type of complement that appears (e.g., Jespersen 1965, Marantz 1984, Butt 2010)

- **The Flexibility of Strong Modal Verbs.** Beyond modality, the strong modal verbs /*gbʔ*/ 'need to' and /*hlw*/ 'have to' express possession and serve as s-level copulas depending on their complement (Kifle 2011, Yohannes 2016, Gebregziabher 2021, Cacchioli 2023).

(58)   *Clausal possession usage of* /gbʔ/
       ni-ʔaj   ʔit-i   gäza   ji-gibbaʔ(-anni)
       DOM-me   that-MS house.M   S3MS-belong.IPFV-O1S
       'The house belongs to me.' (Yohannes 2016:220, (26b))

(59)   a.   *S-level copular usage of* /hlw/
            ʔit-i   tämäharaj ʔab-t-i   gäza   ʔall-o
            that-MS   student.M LOC-that-MS house   COP.PFV-S3MS
            'The student is in the house.'

       b.   *Clausal possession usage of* /hlw/
            han-ti   habti   ʔall-o-ni
            one-FS   sister.F have-S3MS-O1S
            'I have one sister.' (Lit.: 'One sister is to me.')

- **A Dedicated Weak Modal Verb.** To the best of our knowledge, the root $/k?l/$ 'able to' serves only as a modal operator.

(60) ?it-a   səbəjti   ki-ti-xəjid   **ti-xi?il**
      that-FS woman.F PROS-S3FS-leave.IPFV S3FS-can.IPFV
      'The woman can leave.'

7   Conclusion

- **Summary.** Modality in Tigrinya is encoded on verbal elements that differ along the dimension of category and argument structure, but which do not permit raising (*pace* Yohannes 2016, Gebregziabher 2021).

	Force	Base	Category	Argument Structure
/kwn/	weak	epis	Aux	—
/gb?/, /hlw/	strong	root/epis	*v*	Exceptional Object Marking
/x?l/	weak	root/epis	V	Subject Control

Table 6: Summary of modals in Tigrinya

- **Looking Ahead.** We anticipate our analyses for EOM and Subject Control to be extendable to other, non-modal ki-clause embedding predicates.

(61) *Suspected EOM predicate in Tigrinya*

Tɛsfay [CP ?anɛ ki-?i-ħiggɨz-o   ] ji-ts'bəjə-ni
Tesfay   I   PROS-S1S-help.IPFV-O3MS S3MS-expect.IPFV-O1S
'Tesfay expects me to help him.'

(62) *Suspected Subject Control predicate in Tigrinya*

Tɛsfay₁ [MP PRO₁ dʒalba k-ɨ-si?il   ] fəttin-u
Tesfay   boat   PROS-S1MS-draw.IPFV   try.PFV-S3MS
'Tesfay tried to draw a boat.'

- **Beyond Tigrinya.** Verbal modal elements in the closely related language Amharic show behavior similar to, though distinct from, what we have seen in Tigrinya (Lumsden & Halefom 2011, Yimam 2011, Yohannes 2016, Leung & Halefom 2017).

(63) *Weak epistemic modal in Amharic*

anta   säw   ti-räda ji-hon-al
you.NOM.MS person S2-help S3-may-AUX.S3MS
'You might help people.'(Yohannes 2016:235, (41g))

(64) a. *Strong root modal in Amharic*

anta   li-t-hed   ji-ggäb-(h)-al
you.NOM.MS COMP-S3FS-go S3MS-must-O2MS-AUX.S3MS
'You need to go.'(Yohannes 2016:245, (48a–b))

   b. *Strong possibilitiy modal in Amharic*

i-ssuwa li-ti-mät'a   ti-ččil-all-äčč
she   COMP-S3FS-go S3FS-can-AUX-S3FS
'The woman is able to come.'(Yohannes 2016:235, (41h))

Acknowledgements

Notes

[1]Unless otherwise noted, the data presented here were collected by Gioia Cacchioli. Fieldwork was carried out with three Eritrean native speakers of Tigrinya. Transcription conventions in Tigrinya are subject to significant individual variation. We have attempted to account for this with consistent glossing practices following Leipzig conventions.

[2]Despite our choice of translation, it is unclear at this point which modal readings (i.e., ordering sources) are compatible with each of these root modals. This is an ongoing aspect of the current research.

[3]Yohannes (2016) observes that modal pseudo-verbs can also appear with deverbal nominalized complements

[4]The prefix *ki-* is observed in several other environments, including future constructions, temporal constructions, and (non-)finite complementation.

[5]To the best of our knowledge the same facts hold for grammatical objects.

[6]We have found two instances of the root kʔl 'can' appearing with a bare verb. This can be interpreted as evidence for an auxiliary version of the root kʔl, but this has to be left for future work.

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Appendix A

- **Distribution of Negation.** As with other auxiliaries, sentential negation appears on the main verb and not the epistemic modal.

(65)   *Sentential negation appears on the main verb, not the epistemic modal*

    a. *nsxa   walaħadɛ sɛb ti-ħigiz   **ʔaj**-ti-xiwwin-**n**
        you.NOM.MS none.MS man S2MS-help.IPFV NEG-S2MS-might.IPFV-NEG
        Intended: 'It's not possible that you help anyone.'

    b. nsxa walaħadɛ sɛb **ʔaj**-∅-ti-ħigiz-**in**   ti-xiwwin
        you none.MS man NEG-PURP-S2MS-help.IPFV-NEG S2MS-might.IPFV
        'It might be that you do not help anyone.'

(66)   *Sentential negation appears on the main verb, not auxiliaries*

    a. *henok   k-i-särix   **ʔaj**-konä-**n**
        Henok.M PROS-S3MS-work.IPFV NEG-AUX.PRES-S3MS-NEG
        Intended: 'Henok won't work.'

    b. henok   **ʔaj**-∅-∅-särix-**in**   ʔijj-u
        Henok.M NEG-PURP-S3MS-work.IPFV-NEG AUX.PRES-S3MS
        'Henok won't work.'   (p.c., Milena Abraham)

- **"Double Modals".** The proposed analysis correctly predicts that epistemic modals can co-occur above strong and weak modals (see also Yohannes 2016:203, (16f)).

(67)   *"Double-modal" construction with strong + epistemic modals*

    [CP *expl* [CP nissixa   maj ki-ti-sɛtti   ] **ji-gibbiʔ-ka ji-xəwwin**   ]
                   you.NOM.FS water PROS-S2FS-drink.IPFV   S3MS-need.to S3MS-might.IPFV
    'You might need to drink water.'   (epistemic > strong root)

(68)   *Double-modal construction with weak + epistemic modal in Tigrinya*

    [CP nissixa₁   [CP PRO₁ sɛb   ki-ti-ħiggiz   ] **ti-xiʔil   ti-xəwwin**   ]
        you.NOM.FS   person PROS-S2FS-help.IPFV S3FS-able.to S3FS-might.IPFV
    'You might be able to help people.'   (epistemic > weak root)

Appendix B

- **Against Restructuring.** The presence of object marking does not obviously correlate with other grammatical properties of the predicate or the clause and the embedded predicate serves as its own tense/aspect DOMain.

- **Against Backward Raising-to-Object.** Though we can't rule out a covert A-movement account (Potsdam & Polinsky 2012), the lack of Raising-to-Subject might also be taken to indicate a lack of Raising from ki- clauses generally; Amharic has also been claimed to lack Raising (Lumsden & Halefom 2011).