The syntax of modality in Tigrinya

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1 Background on Modality

1.1 The Modal Force

- **(Weak) Possibility Modals.** A modal operator may express what is possible or expected under only some circumstances (Kratzer 1977, 1981).

(1) *Possibility modal*
     According to what is permitted, Nicole **can** leave early.

(2) *Possibility modal*
     According to what we know, Nicole **might** leave early.

- **(Strong) Necessity Modals.** A modal operator may express what is necessary or required under all circumstances (Kratzer 1977, 1981).

(3) *Necessity modal*
     According to what is required, Nicole **should** leave early.

(4) *Necessity modal*
     According to what we know, Nicole **must** leave early.

1.2 The Modal Base

- **Root Modality.** A modal operator may express what is possible or necessary on the basis of some contextually salient normative standard (circumstances, permissions, goals, desires, etc.).

(5) *Root possibility modal*
     (According to what is permitted), Nicole **can** leave early.

(6) *Root necessity modal*
     (According to what is required), Nicole **should** leave early.

- **Epistemic Modality.** A modal operator may express what is possible or necessary on the basis of what is known.

(7) *Epistemic possibility modal*
     (According to what we know), Nicole **might** leave early.

(8) *Epistemic necessity modal*
     (According to what we know), Nicole **must** leave early.

1.3 The Grammaticalization of Verbal Modality

- **Language Variation.** Languages may differ in whether the modal base/force is grammaticalized as part of the modal or context-dependent (e.g., Matthewson 2010, Deal 2011)

(9) *Modal force is grammaticalized on modals in English*

    a.   {*Root/Epistemic*} *possibility modal*
       Nicole **may** leave early.

    b.   {*Root/Epistemic*} *necessity modal*
       Nicole **must** leave early.

(10) *Modal base is grammaticalized on modals in St'át'imcets [st̓ʼæt̓ʼjəmxət͡ʃ]*

    a.   *Epistemic* {*possibility/necessity*} *modal*

       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.'

    b.   *Root* {*possibility/necessity*} *modal*

       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.'

- **Syntactic Category.** Verbal modals may show the properties of either auxiliary verbs or main verbs (see Ross 1969, Napoli 1981, Picallo 1990, Cardinaletti & Shlonsky 2004, Barbiers 2006)

(11) *Modal auxiliary verbs invert with the subject in English*

    a.   **Can** Nicole leave early?

    b.   **Might** Nicole leave early?

(12) *(Pseudo-)Modal predicates trigger* do-*insertion in English*

    a.   **Is** Nicole **able** to leave early?

    b.   **Does** Nicole **have** to leave early?

(13) *Verbal modals show properties of both verbs and auxilairies*

    a.   *Verbal modals have participial forms in Dutch*

       Jan had dat best **gekund**
       Jan had that best could.PTCP
       'John would very well have been able to do that'

    b.   *Verbal modals appear in infinitival forms in Dutch*

       Jan had dat best **kunnen**   doen
       Jan had that best could.INF do.INF
       'John would very well have been able to do that'

1.4   Srtuctural Variation in Verbal Modality

- **The Verbal Spine.** Differences in the modal base correspond to a difference in structural height/semantic scope (Picallo 1990, Brennan 1993, Cormack & Smith 1998, Cinque 1999, Nauze 2008, Hacquard 2010).

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

(15)   *Epistemic modals are structurally higher than root modals*

    a. %Nicole **might can** leave early.   (*epistemic > root*)
        "It's possible that Nicole is able to leave early"

    b. *Nicole **can might** leave early.   (*root > epistemic*)

(16)   *Epist./root modals are interpreted differently with respect to negation*

    a. Nicole **might not** leave early.   (*epistemic > root*)
        "It's *possible* that it's *not* the case that Nicole leaves early"

    b. Nicole **cannot** leave early.   (*root > epistemic*)
        "It's *not* the case that Nicole is *able* to leave early"

- **Mono-Clausal v. Bi-Clausal.** Differences in syntactic category and modal force correspond to structural differences (cf. Cinque 2006, Grano 2015).

(17)   [$_{CP}$ Nicole { **can / might** } leave early]
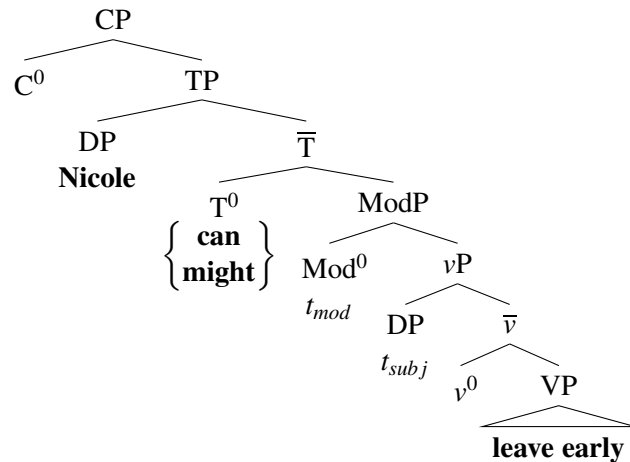
(18)   [$_{CP}$ Nicole **needs** [$_{TP}$ to leave early]]
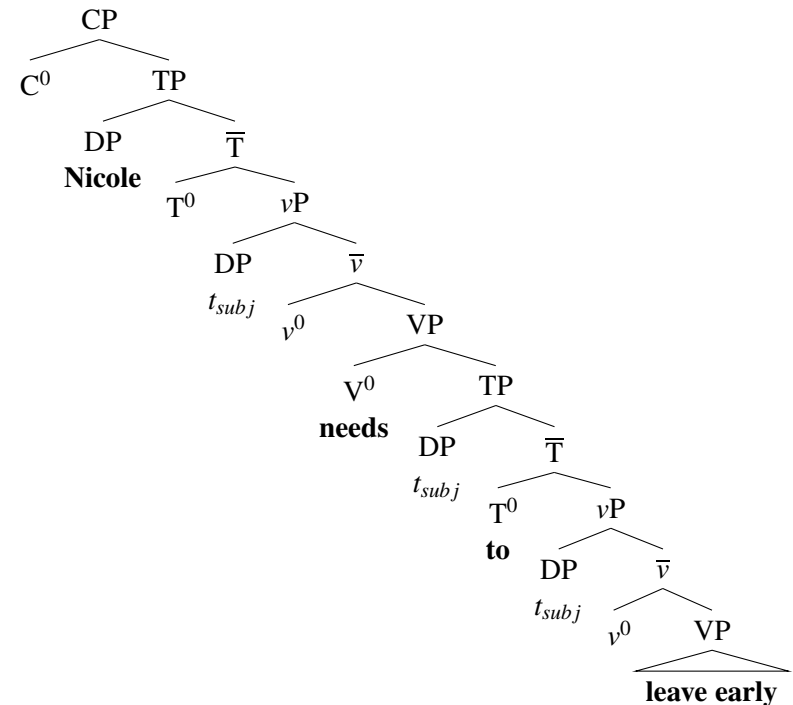
2   Overview of Modality in Tigrinya

- **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).

    (19)   *Modal auxiliaries in mono-clausal structures*   (20)   *Pseudo-modal verbs in bi-clausal structures*

    [CP Ɂit-a   səbəjti   [vP ti-xəjid   ] **ti-xəwwɨn**   ]

          that-FS woman.F   S3FS-leave.IPFV   S3FS-might.IPFV

          'The woman might leave.'

    [CP [CP Ɂit-a   səbəjti   kɨ-ti-xəjid   ] **jɨ-gɨbbaɁ-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.

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

    [CP ⎡*expl*⎤ [CP Ɂit-a   səbəjti   kɨ-ti-xəjid   ] **jɨ-gɨbbaɁ-a**   ]

                    that-FS woman.F PROS-S3FS-leave.IPFV   S3MS-need.to.IPFV-O3FS

          'The woman needs to leave.'

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

    [CP Ɂit-a   səbəjti₁   [CP ⎡PRO₁⎤ kɨ-ti-xəjid   ] **ti-xɨɁɨl**   ]

          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

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.

(23) 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*)

(24) 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 /ħlw/ 'have to/must' encode strong (necessity) root and epistemic modality.

(25) 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*)

(27) 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*)

(26) 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*)

(28) 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.

(29) 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 /ħlw/ 'have to/must'.

(30) niss-u n-ət-i   bani   bäliʕ-wo   **ki-∅-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/, **/ħlw/**	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 /*gbʕ*/ 'need to.'

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

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

(32)   *The root* /gbʕ/ *is a verb*

[CP [CP ki-t-käjjɨd   ] **jɨ-gɨbbaʕ**   ]
         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).

(33)   [CP **nɨssa** [CP t_{subj} ki-**t**-mäṣṣiʕ   ] **tɨ**-xiʕil   näjr-**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).

(34)   [CP *expl* [CP (**nɨssɨxa**)   ki-**t**-käjjɨd   ] **jɨ**-gɨbbaʕ   ]
              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).

(35)   [CP (**nɨssɨxa**)   *expl* [vP t_{obj} [CP ki-**t**-käjjɨd   ] **jɨ**-gɨbbaʕ-**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).

(36)   [CP **nɨssa** [vP t_{subj} [CP t_{subj} ki-t-məs's'iʕ   ] ʔallew-**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.

(37) a. [CP ʔit-a səbəjti [vP t_{subj} 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 /hlw/ 'have to' embed Exceptional Object Marking constructions.

(38) 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]

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

[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.'

- **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.

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

[CP ʔit-a   səbəjti   [vP **(*ki)**-ti-xəjid   ] ti-xəwwin   ]
       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.

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

[CP **ʔit-a   səbəjti**   [vP ti-xəjid   ] {**ti**/***ji**}-xəwwin   ]
       that-FS woman.F   S3FS-leave.IPFV   S3FS/S3MS-might.IPFV
'The woman might leave.'

(42)   *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).

(43)   *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]

(44)   *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.'

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

ʔɨt-i   səbʔaj **n-ət-a**   **dəbdabe** ts'ɨhif-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.

(46)   *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.

  (47) 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.
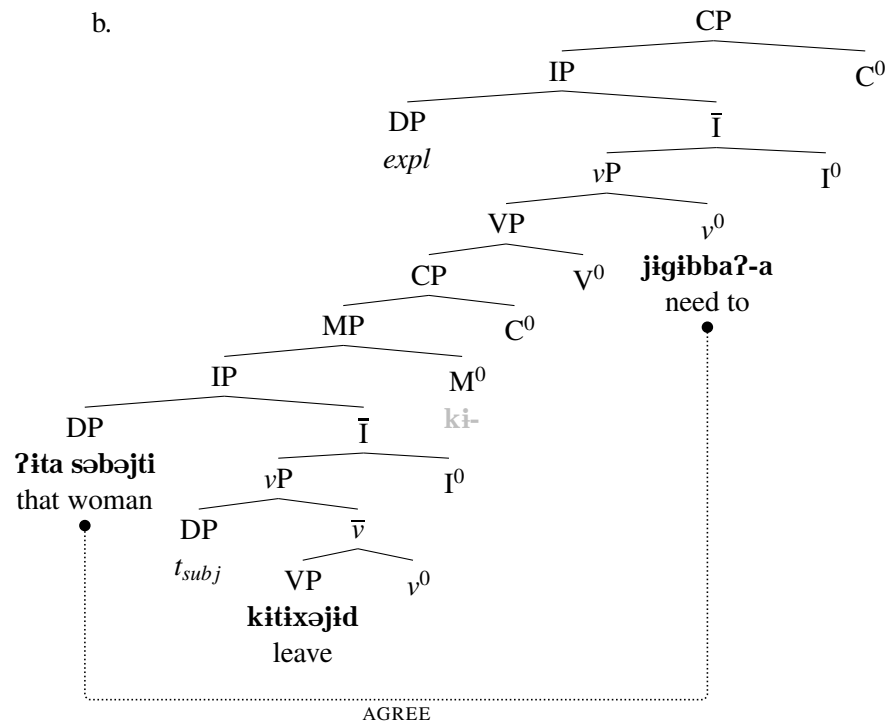
- **Weak Pseudo-Modal Verbs**. The weak pseudo-modal verb /xʔl/ 'able to' embeds Subject Control constructions.

  (48) a. [CP ʔit-a   səbəjti₁   [CP PRO₁ ki-ti-xəjid   ]
            that-FS woman.F   PROS-S3FS-leave.IPFV

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

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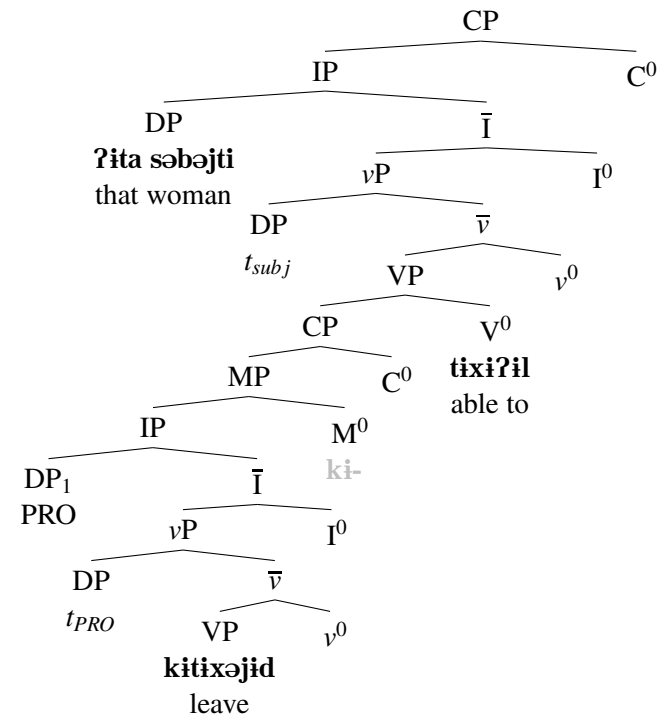
- **Evidence.** The split can be initially motivated by the facts summarized in Table 4 and further developed in the next sections.

	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]

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

[$_{CP}$ ʔit-a   səbəjti$_1$ [$_{CP}$ PRO$_1$ ***(kɨ)**-ti-xəjid   ] ti-xiʔil   ]
    that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-able.to.IPFV
'The woman can leave.'

(50) *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.

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

[$_{CP}$ ʔit-a   səbəjti$_1$ [$_{CP}$ PRO$_1$ ki-ti-xəjid   ] {**tɨ**/***jɨ**}-xiʔil   ]
    that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS/S3MS-can.IPFV
'The woman can leave.'

(52) *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.

(53)   *The weak modal verb cannot appear with object markers*

[CP **ʔɨt-a**   **səbəjti**₁ [CP PRO₁ ki-ti-xəjid   ] **tɨ-xɨʔɨl-{*a}**   ]
that-FS woman.F   PROS-S3FS-leave.IPFV   S3FS-can.IPFV-O3FS
'The woman can leave.'

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

[CP *expl* [CP **ʔɨt-a**   **səbəjti**   ki-ti-xəjid   ] ji-gɨbbaʔ-**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.

(55)   *Strong modal verbs carry object marking the cross-references an embedded argument.*

[CP *expl* [CP (**b-bɨkeri**) Sɛgɛn (**b-bɨkeri**) niʕaʔ-a   maj   ki-ti-seti   ] **jɨ**-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.'

(56)   *EOM predicates carry object marking that cross-references an embedded subject*

[CP (***ʔab dʒärdin**) Tesfaj   [CP (**ʔab dʒärdin**) ʔane ki-ɨ-hɨggɨz-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.

(57)   *The weak root modal verb carries subject agreement that cross-references the matrix subject*

[CP (***bɨ-bɨkeri**) Sɛgɛn [CP PRO (**bɨ-bɨkeri**) maj   ki-ti-seti   ] **tɨ**-xɨʔil   ]
INS-glass Segen.F   INS-glass   water PROS-S3FS-drink.IPFV   S3FS-able.to.IPFV
'Segen can drink water with a glass.'

(58)   *Subject Control predicates subject agreement that cross-references the matrix subjects*

[CP (***bɨ-rsas**) Tɛsfay [CP (**bɨ-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.

(59) *No accusative case marking on the embedded subjects of strong root modals*

    *[CP *expl* [CP **n-ət-a**   **səbəjti**   kɨ-ti-xəjid   ] jɨ-gɨbbaʔ-a   ]

                   DOM-that-FS woman.F PROS-S3FS-leave.IPFV S3MS-need.to.IPFV-O3FS

    'The woman needs to leave.'

(60) *Nominative marking on the embedded subjects of suspected EOM predicates*

    [CP Tesfay [CP **ʔane** kɨ-ʔɨ-hɨggɨz-o   ] jɨ-ts'bəjə-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).

(61) *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.

(62) *The Tirgrinya Verbal Spine*

```
                        ModP
              AspP              Mod⁰
        vP          Asp⁰       /xwn/
   VP       v⁰                 might
   |      /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).

(63) *Clausal possession usage of* /gbʔ/
nɨ-ʔaj   ʔɨt-i   gäza   jɨ-gɨbbaʔ(-anni)
DOM-me that-MS house.M S3MS-belong.IPFV-O1S
'The house belongs to me.' (Yohannes 2016:220, (26b))

(64) a. *S-level copular usage of* /hlw/
ʔɨt-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   ħabti   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 /kʔl/ 'able to' serves only as a modal operator.

(65) ʔit-a   səbəjti   kɨ-tɨ-xəjid   **tɨ-xiʔɨl**
      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	—
/gbʔ/, /hlw/	strong	root/epis	*v*	Exceptional Object Marking
/xʔl/	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 kɨ-clause embedding predicates.

(66) *Suspected EOM predicate in Tigrinya*

Tɛsfay [CP ʔanɛ kɨ-ʔɨ-ħiggɨz-o   ] jɨ-tsʼbəjə-ni
Tesfay   I   PROS-S1S-help.IPFV-O3MS   S3MS-expect.IPFV-O1S
'Tesfay expects me to help him.'

(67) *Suspected Subject Control predicate in Tigrinya*

Tɛsfay₁ [MP PRO₁ dʒalba k-ɨ-siʔɨl   ] 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).

(68) *Weak epistemic modal in Amharic*

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

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

anta   lɨ-t-hed   jɨ-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*

ɨ-ssuwa lɨ-tɨ-mätʼa   tɨ-ččɨl-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.

   (70)   *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.'

   (71)   *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)).

   (72)   *"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)

   (73)   *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).