The syntax of verbal modality in Tigrinya

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Abstract: This paper investigates how verbal modality is syntactically grammaticalized in Tigrinya (Ethiosemitic, Eritrea and Northern Ethiopia; SOV). We argue that modality is expressed through a weak epistemic auxiliary, as well as clause-embedding modal predicates that are lexically encoded as either a strong/necessity or weak/possibility modal. The modal base for these elements is contextually determined. Moreover, we demonstrate a correlation in the language between the force of the modal predicates and their argument structure (unaccusative/transitive). The weak modal predicate projects Subject Control constructions and the strong modal predicates project what we refer to as Exceptional Object Marking constructions (analogous to Exceptional Case Marking in English). Although this difference in argument structure is correlated with the modal force of a predicate, we suggest that the causal force behind the correlation is more plausibly tied to a difference in syntactic category, whereby strong modal predicates are v^0 light verbs and the weak modal predicate is a lexical verb V^0. The results of this paper contribute descriptively to our knowledge of the understudied language Tigrinya, as well as theoretically to the typological picture of the expression of modality cross-linguistically. (188 words)

Keywords: syntax, modality, Ethiosemitic, Tigrinya

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The syntax of verbal modality in Tigrinya

1 Introduction

Early generative work on the syntactic realization of modality hypothesized a correlation between the base of a modal (epistemic or root) and the syntactically projected argument structure. Jackendoff (1972), for instance, proposed that epistemic modals have a Raising syntax, while root modals have a syntax comparable to modern Control structures (see also Picallo 1990, Brennan 1993).

(1) *Epistemic modals claimed to have a raising syntax*
Nicole$_1$ **might** [t_1 leave early]

(2) *Root modals claimed to have a control syntax*
Nicole$_1$ **can** [PRO$_1$ leave early]

While possibly intuitive in light of their interpretive differences, this picture of the syntax of modality is undermined by, among other things, standard diagnostics for thematicity (Postal 1974, Bhatt 1998, Wurmbrand 1999, Barbiers 2006). This includes the possibility for expletive subjects, which are permitted by both epistemic and root modals.

(3) *Modal auxiliaries appear with expletive subjects in English*
There { **might / can** } be a plant sitting on your desk.

Such facts rather convincingly suggest that, in fact, English modal auxiliaries do not assign external Θ-roles and consequently do not have a Control syntax.

More recently, there have been proposals for retaining thematic differences amongst different flavors of root modals. Brennan (1993) and subsequently Nauze (2008) argue that deontic root modals are transitive, assigning a Θ-role to the subject as the obligation bearer, in data like (4a):

(4) a. Mark must be in Addis Ababa by Wednesday.
b. This letter must be in Addis Ababa by Wednesday.

This idea, too, has faced resistance (see Bhatt 1998, Wurmbrand 1999, Barbiers 2006, von Fintel & Iatridou 2009). While the expressed obligation in (4a) can fall to *Mark*, it clearly does not fall to the subject *the letter* in (4b). In this variant of the example, the obligation intuitively falls to some syntactically unexpressed, implicit letter carrier. Thus, it is not clear how the deontic reading should emerge if it is tied to the assignment of an obligation Θ-role. The consensus position, then, seems to be that the base of a modal does not correspond to thematic differences that are reflected in the syntax.

Be that as it may, there is a conceptual possibility that other aspects of the meaning of modals are reflected in the syntax. For instance, while it is possibly less intuitive, one could imagine that the quantificational force of a modal (strong/necessity or weak/possibility) affects the syntactic derivation and representation. After all, it is a point of cross-linguistic variation whether modal elements lexicalize their base or their force (e.g., Kratzer 1981, Matthewson 2010, Deal 2011, Cable 2017). English has a tendency to encode force on modal auxiliaries, leaving the modal base to be construed on the basis of the context, as shown in (5). According to Matthewson (2010), St'át'imcets[1] makes the orthogonal cut. In this language, the modal base is lexically distinguished, while modal force is left to context; see (6).

(5) *English: lexically encoded modal force; context-dependent modal base*
a. Nicole **must** leave early. (*necessity; epistemic/root*)
b. Nicole **may** leave early. (*possibility; epistemic/root*)

[1] St'át'imcets, also known as Lillooet, is a Salishan language that is spoken in British Columbia, Canada.

(6) *St'át'imcets: lexically encoded modal base; context-dependent modal force*

a. 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.' (*necessity/possibility; epistemic*)

b. 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.' (*necessity/possibility; deontic*)

(Matthewson 2010:3, (3))

Despite the conceptual possibility, this idea that quantificational force influences the syntax, or vice versa, is both under-explored and arguably under-realized. It is not unheard of, however. The quantificational force of a determiner is commonly thought to condition its suitability in expletive-*there* constructions, the generalization being that the associate position of expletive-*there* is reserved for weak quantifiers (Milsark 1974, Barwise & Cooper 1981; though see Keenan 1987).

(7) There is { **a / *every** } plant sitting on your desk.

Closer to the topic of modality is a correlation identified by Hackl & Nissenbaum (2012) between the quantificational force of covert modality and the syntax of an infinitival relative clause. Observe in (8) that infinitival relative clauses are generally ambiguous between meanings that can be paraphrased with either a weak or strong root modal interpretation (Bhatt 1999, 2006, Hackl & Nissenbaum 2012, Grano 2022).

(8) There is [a book for you to read] on the table
"There is a book that you { **could / should** } read on the table."

Hackl & Nissenbaum (2012) present evidence to support the claim that a weak interpretation of infinitival modality requires a raising derivation, while a strong interpretation permits either raising or an externally-headed derivation. To the best of our knowledge, there is no published account of this generalization. As Hackl & Nissenbaum (2012) point out, it is not clear why or how the quantificational force of covert modality would interact with the syntactic derivation. The suggestion is that some additional, semantic or syntactic factor is at play.

With these issues in mind, one of the goals of this paper is to present a generative analysis of the syntax of verbal modal elements in the under-studied and under-represented language Tigrinya (Ethiosemitic, Eritrea and Northern Ethiopia, SOV). Given the overall scarcity of research into the syntax of modals in Tigrinya, in Ethiosemitic languages generally, and in numerous other less commonly studied languages, this project helps fill out the typological picture of how verbal modality is syntactically grammaticalized. Moreover, it situates Tigrinya within this picture.

Another goal of this paper is to suggest a possible account for an interaction between the force of modal elements and their syntax of the type that has been discussed above. More specifically, we will observe precisely the kind of correlation mentioned, whereby the quantificational force of modality correlates with the syntactic argument structure of that modal element. Agreeing that there is no clear principled reason why this correlation should be the result of a causal relation, we will motivate an alternative explanation of these facts that appeals to the syntactic category of the modal elements.

Toward these ends, section 2 will provide some relevant background on Tigrinya. Section 3 will present some of the basic interpretive properties of verbal modal elements in Tigrinya. We will also review the previous proposals for the syntax of various Tigrinya modals presented in Tesfay 2016 and Gebregziabher 2021.

Sections 4 through 6 present our analysis of modal elements in Tigrinya. Our claims are summarized in Table 1.[2]

[2]While we denote roots in Tigrinya as tri-consonantal templates that lack vocalic information, as is common in Semitic linguistics, we have no theoretical attachment to this position. See McCarthy (1993) for general discussion of Semitic languages and Buckley (2003) and Godfrey (2011) on Tigrinya. Note further that a regular process of spirantization causes the initial /k/ of a root to be realized as [x] when prefixation causes it to

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

Table 1: Summary of verbal modal elements in Tigrinya

In section 4 we substantiate a previous claim by Tesfay (2016) that verbal modality is expressed through both modal auxiliaries and pseudo-modal verbs. We present a range of morphosyntactic differences that collectively point to the conclusion that the weak epistemic modal /*kwn*/ 'might' is an auxiliary that appears in mono-clausal constructions.

(9) *Modal auxiliary* /kwn/ *in a mono-clausal structure*[3]

[$_{CP}$ ʔɨt-a səbəjti [$_{vP}$ tɨ-xəjjɨd] **tɨ-xəwwɨn**]
that-FS woman.F S.3FS-leave.IPFV S.3FS-might.IPFV

'The woman might leave.'

The other modal elements, we argue, are pseudo-modal verbs that embed reduced, non-finite clauses in bi-clausal constructions. Seeing as we will ultimately argue for a categorial difference among these elements as well, we distinguish them from the modal auxiliary by referring to them collectively as the "modal predicates".

The correlation between modal force and argument structure among the modal predicates is demonstrated across sections 4 and 5. Contrary to previous analyses that propose (optional) Raising derivations for pseudo-modal verbs (Tesfay 2016, Gebregziabher 2021), we argue in section 4 that Raising is in fact disallowed in Tigrinya, at least in the set of constructions investigated here. We propose that the strong modal predicates /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' are indeed unaccusative predicates, but that they instead embed what we refer to as Exceptional Object Marking (EOM) constructions, the analogy being with Exceptional Case Marking in a language like English. This analysis is sketched in (10).

(10) *Strong modal predicates are unaccusative Exceptional Object Marking constructions*

[*expl* [ʔɨt-a səbəjti kɨ-tɨ-xəjjɨd] **jɨ-gɨbaʔ-a**]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS

'The woman needs to leave.'

The weak modal predicates /*kʔl*/ 'able to', on the other hand, is a transitive predicate that embeds Subject Control clauses. This proposed syntax is presented in (11):

(11) *Weak modal predicates are transitive Subject Control constructions*

[ʔɨt-a səbəjti$_1$ [PRO$_1$ kɨ-tɨ-xəjjɨd] **tɨ-xəʔɨl**]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV

'The woman can leave.'

We demonstrate that these proposed differences in argument structure and syntax account for numerous properties of each of these modal constructions.

Section 6 turns to a discussion of why the argument structure of a modal predicate should be aligned with its

appear intervocalically.

[3]Transcription conventions in Tigrinya are subject to significant individual variation. We have attempted to reproduce examples from the literature as faithfully as possible while at the same time accounting for the variation by using consistent glossing practices following the Leipzig Glossing Rules. Our one point of deviation is in using capital S and capital O respectively for the subject marker and object marker morphology on verbal elements.

modal force. As noted above, we do not see this as a causal relationship. We suggest that the argument structure of modal predicate is more plausibly linked to a correlation with the grammatical category of these elements. We present evidence for thinking that the strong modal predicates are light verbs that head a *v*P projection, while the weak modal predicate is a lexical verb that heads the VP. This makes it possible to assert that these modals contribute differentially to the compositions of the predicate, which can be held accountable for the distinct argument structures.

Finally, section 7 concludes the paper. This involves a summary of the major results of the study. We also point out the implications of this research on other clause-embedding structures in Tigrinya, as well as the treatment of modality in the closely related language Amharic.

2 Background on Tigrinya

2.1 Ethnographic information and data collection

Tigrinya is an Ethiosemitic language, more specifically a language belonging to the Eastern Ethiopic branch of the South Semitic language family. It is closely related to the languages Tigré and Amharic and more distantly related to Arabic and Hebrew. It is spoken by approximately 10 million people, mainly in central Eritrea, where it is the national language, and in the Tigray region of northern Ethiopia (Eberhard et al. 2024).

Unless otherwise indicated, the data presented in this paper were collected by the authors in individual interviews with four native Tigrinya speaking consultants. Three of the language consultants are from the Debub and Gash-Barka regions of Eritrea. These speakers are each proficient in French and have been living in Geneva since the 2010s. The fourth of our consultants, who is proficient in English, is from Mekele in the Tigray region of Ethiopia and is currently living in Addis Ababa. There exist numerous regional varieties of Ethiopic and Eritrean Tigrinya, but to the best of our knowledge there are no existing studies that systematically investigate the dialectal variation. While we observed regional linguistic differences amongst our consultants, we focus here on those properties of modal elements in the language that are largely consistent amongst these speakers.

Much of the data presented in this paper was collected using standard judgement tasks, wherein consultants were asked to provide intuitions about the grammaticality or acceptability of utterances constructed by the authors or by the language consultant themself. Test sentences were often paired with contexts or translations that were constructed to demonstrate the intended interpretation and facilitate judgements. The data presented in section 3 were collected using a translation task that was modelled on a methodology employed in Cable 2017. The consultant was presented with a context that concluded with a single sentence in the contact language to be translated into Tigrinya. Several alternatives were presented as possible translations and consultants were asked to evaluate the acceptability of the translation relative to the context and the intended meaning.

2.2 Morphosyntactic properties of Tigrinya

Being a Semitic language, Tigrinya displays non-concatenative root morphology: words are typically formed by interpolating vowels into triconsonantal roots that provide a semantic core. In verbal forms, aspectual information is obtained through transfixed vowel templates. In the following examples adapted from Nazareth 2011:41, transfixing the vowels *ä-ä* within the root /*sbr*/ obtains a perfect verbal form in (12c), transfixing the vowels *ä-i* obtains the gerundive verb form in (12b), and transifixing the vowels *ä-ɨ* obtains an imperfective verbal form in (12a).[4] The

[4]The traditional conventions for referring to the different aspectual verb forms in (12), following Leslau 1941 and Kogan 2005, use the terms imperfect, gerundive, and perfect. As Nazareth (2011) notes, one or more of these might be considered a misnomer. In particular, the gerundive verb seems to function as a perfective verb form. We preserve the name gerundive for the sake of convention, but we adopt the term "imperfective" to highlight the non-past orientation of this verbal form.

phonotactic constraints of the language ensure a general CV(C) syllable structure (see Bulakh 2019).

(12) a. *Imperfective verb form*
ji-säbbɨr
S.3MS-break.IPFV
'He breaks.'

b. *"Gerundive" verb form*
säbir-u
break.PFV-S.3MS
'He broke.'

c. *Perfect verb form*
säbär-ä
break.PRF-S.3MS
'He has broken.'

As in many other Semitic languages, subject agreement morphology on verbal elements vary between prefixal, suffixal, and mixed paradigms on the basis of the aspectual form of the verb. In Tigrinya, imperfective verb forms appear with prefixal subject agreement morphology or with both prefixal and suffixal subject agreement morphology. The subject agreement morphology that appears with gerundive and perfect verb forms is always suffixal, but the forms are pulled from separate paradigms. Subject agreement morphemes on verbs show agreement with the person, number, and gender features of the grammatical subject of a clause. The full subject agreement paradigm for each aspectual form of the paradigmatic verb */sbr/* 'break' is presented in Table 2, which is adapted from Leslau 1941.

Subject	**Imperfective**	**Gerundive**	**Perfect**
S.3MS	**ji**-säbbɨr	säbir-**u**	säbär-**ä**
S.3MP	**ji**-säbɨr-**u**	säbir-**om**	säbär-**u**
S.3FS	**ti**-säbbɨr	säbir-**a**	säbär-**ät**
S.3FP	**ji**-säbɨr-**a**	säbir-**än**	säbär-**a**
S.2MS	**ti**-säbbɨr	säbir-**ka**	säbär-**ka**
S.2MP	**ti**-säbɨr-**u**	säbir-**kum**	säbär-**kum**
S.2FS	**ti**-säbɨr-**i**	säbir-**ki**	säbär-**ki**
S.2FP	**ti**-säbɨr-**a**	säbir-**kɨn**	säbär-**kɨn**
S.1S	**ʔi**-säbbɨr	säbir-**ä**	säbär-**ku**
S.1P	**ni**-säbbɨr	säbir-**na**	säbär-**na**

Table 2: Subject marker paradigms by aspectual verb form in Tigrinya

Tigrinya is a fairly rigid head-final language with canonical SOV(Aux) word-order.[5] In (13), the object *mäts'ħaf* 'book' precedes the verb. The auxiliary *näbbär* 'was' expresses past tense and follows the verb.

(13) Binyam mäts'ħaf yi-ts'ɨf näbbär-∅
Binyam book S.3MS-write.IPFV AUX.PST-S.3MS
'Binyam was writing a book.' (Tesfay 2016:232, (38b))

With regard to case morphology, Tigrinya is a nominative-accusative language. Subjects of transitive predicates, as in (14b), and intransitive predicates, as in (14a), are morphologically aligned with unmarked nominative case.

(14) a. ʔɨt-a t'ɨrmuz tä-säbir-a
that-FS bottle DT-break.GER-S.3FS
'The bottle broke.'

b. Yonas n-ät-a t'ɨrmuz säbir-u-wa
Yonas.M ACC-that-FS bottle break.GER-S.3MS-O.3FS
'Yonas broke the bottle.' (Nazareth 2011:56, (55a-b))

Objects in Tigrinya are marked differentialy on the basis of specificity and definiteness (Bossong 1991, Aissen 2003; see Nazareth 2011:ch.9 on Tigrinya). Thus, the definite object *näta t'ɨrmuz* 'the bottle' in (14b) is marked with

[5] Despite generally being a well-behaved SOV(Aux) language, it is worth noting that, like Amharic, Tigrinya employs prepositions. As discussed in Baker & Kramer (2014) with respect to Amharic, this is a typologically rare combination from the perspective of Greenberg's Universal 4. See Gebregziabher 2013 for discussion of Tigrinya in this context.

accusative case but the indefinite *mäts'ħaf* 'book' in (13) is not.[6]

Also illustrated in example (14b) is the fact that accusative-marked objects are typically cross-referenced by an object marker suffix on the verb (Nazareth 2011:ch.8). In this case, the 3FS *-wa* suffixed to the verb agrees in person, number, and gender with the direct object *näta t'ɨrmuz* 'the bottle'. Object markers always appear as suffixes and always follow the subject marker in the case that one surfaces. Object markers also display relatively less allomorphic variation across aspectual forms (Gebregziabher 2021).[7] Table 3, which has been adapted from data in Leslau 1941, presents the object agreement paradigm for Tigrinya as it is realized with a 3MS subject for the paradigmatic verb */k'tl/* 'kill'.[8]

Object	**Imperfective**	**Gerundive**	**Perfect**
O.3MS	ji-k'ätl-**o**	k'ätil-u-**wo**	k'ätäl-∅-**o**
O.3MP	ji-k'ätl-**om**	k'ätil-u-**wom**	k'ätäl-∅-**om**
O.3FS	ji-k'ätl-**a**	k'ätil-u-**wa**	k'ätäl-∅-**a**
O.3FP	ji-k'ätl-**än**	k'ätil-u-**wän**	k'ätäl-∅-**än**
O.2MS	ji-k'ätlä-**kka**	k'ätil-u-**kka**	k'ätäl-ä-**kka**
O.2MP	ji-k'ätlä-**kkum**	k'ätil-u-**kkum**	k'ätäl-ä-**kkum**
O.2FS	ji-k'ätlä-**kki**	k'ätil-u-**kki**	k'ätäl-ä-**kki**
O.2FP	ji-k'ätlä-**kkɨn**	k'ätil-u-**kkɨn**	k'ätäl-ä-**kkɨn**
O.1S	ji-k'ätlä-**nni**	k'ätil-u-**nni**	k'ätäl-ä-**nni**
O.1P	ji-k'ätlä-**nna**	k'ätil-u-**nna**	k'ätäl-ä-**nna**

Table 3: Object agreement paradigm with 3MS subject marker by aspectual verb form in Tigrinya

With regard to how the phonological realization of the object marker is determined, we follow previous work by Kramer (2014) and Baker & Kramer (2018) on Amharic and by Gebregziabher (2021) and Overfelt (2022) on Tigrinya. As illustrated below in (15), the object marker represents a formal AGREE relationship, in the sense of Chomsky (2001), between v^0 and the structurally highest definite/specific internal argument.

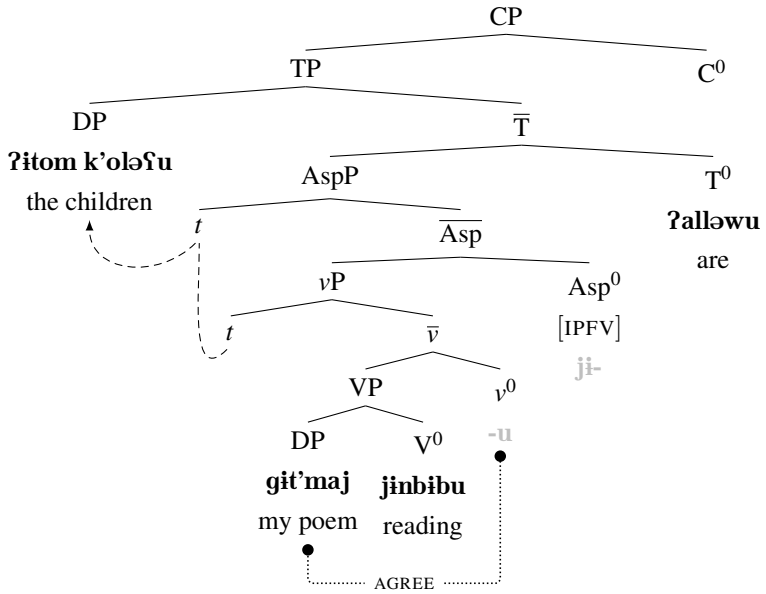
[6] Accusative case marking on definite/specific inanimate objects in Tigrinya is, at some level, optional. It is not entirely clear what governs the choice, although it seems to be related to topicality and discourse-linking, whereby highly topical or discourse-linked objects may be morphologically unmarked.

[7] These are points related to familair questions raised regarding the status of object markers as agreement morphemes or clitics. This is not a debate that we weigh in on in this paper, but we would recommend the reader to Kramer (2014) and Baker & Kramer 2018 on Amharic and Gebregziabher (2021) on Tigrinya.

[8] Separate processes of consonant epenthesis, assimilation, resyllabification, and coalescence may preserve the phonotactics of the language by altering the shape of the object marker on the basis of the subject marking found on the verb; see Buckley 1994 and Bulakh 2019. For expository purposes we present the object marker paradigm only as it appears with 3MS subjects. We hope that the lack of aspect-based allomorphic variation will largely mitigate any potential confusion.

(15) a. ʔɨt-om k'oləʕu gɨt'm-aj ji-nbɨb-u ʔallə-wu
that-MP children poem.M-POSS.1S S.3MP-read.IPFV-S.3MP AUX.NPST-S.3MP
'The children aren't reading my poem.'

b.



The structure in (15) also presents our basic assumptions regarding subject marking. Subject marking in Tigrinya is an instance of what Carstens (2001) dubs "hyperagreement", in which the grammatical subject of the clause is cross-referenced by subject marking on all verbal elements. Along with Carstens (2001), we assume that this is the result of successive A-movements through the specifier of each verbal head on the clausal spine, terminating in the highest agreeing position. This makes subject marking the realization of a local formal AGREE relationship between verbal heads and an argument promoted from the predicate. Like Tesfay (2016) we assume that the highest agreeing position for the promoted argument is the specifier of TP in finite clauses. In (15), therefore, the external argument moves through Spec,AspP to determine the subject marker that appears on the verb to Spec,TP to determine the subject marker on the tense auxiliary.

Finally, we would note that there is evidence for verb-raising head-movement in both Tigrinya (Overfelt 2009) and Amharic (Baker & Kramer 2014), though the full details have not been explicitly worked out in the literature known to us. For the purpose of this paper and for the sake of exposition, we abstract away from the movement of heads and present verbal elements in their suspected underlying positions.

3 Overview of verbal modality in Tigrinya

Our attention turns now to the expression of verbal modality in Tigrinya. We begin with an investigation of the meaning contributed by several established modal elements in the language. We then consider previous syntactic treatments of Tigrinya modal structures.

3.1 Encoding modality in Tigrinya

With an understanding of modality as the expression of possibility and necessity, we are aware of four verbal modal elements in Tigrinya. These elements, which are discussed in detail by Tesfay (2016), are listed succinctly in their tri-consonantal root form in Table 4.

	Force	Base	Translation
/kwn/	weak	epistemic	'might'
/gbʔ/, /hlw/	strong	root/epistemic	'should/need to', 'must/have to'
/kʔl/	weak	root/epistemic	'can/be able to'

Table 4: Inventory of verbal modal elements in Tigrinya

As Table 4 shows, Tigrinya is like English and familiar Indo-European languages regarding the encoding of modality on verbal elements. Modal elements encode their quantificational force while, in general, the modal base is context-dependent. We turn immediately to a systematic investigation of each of these elements.[9]

3.1.1 The weak epistemic modal /*kwn*/

As has been mentioned with reference to data from Tesfay 2016, the root /*kwn*/ expresses weak epistemic modality, comparable to *might* in English. We investigated the available range of interpretations for /*kwn*/ by asking participants to judge the acceptability of sentences containing this element relative to various contexts. Each context also included a targeted contact language translation that unambiguously expresses the intended modal base and modal force. These investigative protocols are modeled on those that can be found in Cable 2017.

The two contexts provided below present an assertion that is either justified by the speaker's beliefs, as in (16), or entailed by their beliefs, as in (17). Therefore, they serve as tests for the availability of a weak epistemic and strong epistemic interpretation, respectively.

(16) *Weak epistemic context*: Salem is looking for her key but cannot find it. She hasn't looked in her bag or in her jacket. Salem thinks to herself: The key might be in the bag.

ʔɨt-a məftaħ ʔab borsa tɨ-hilu **tɨ-xəwwɨn**
that-FS key.F LOC bag S.3FS-COP S.3FS-might.IPFV
'The key might be in the bag.'

(17) *Strong epistemic context*: Salem is looking for her key but cannot find it. She has looked everywhere in her apartment except for in her bag. Salem thinks to herself: The key must be in the bag.

ʔɨt-a məftaħ ʔab borsa tɨ-hilu **tɨ-xəwwɨn**
that-FS key.F LOC bag S.3FS-COP S.3FS-might.IPFV
'The key might be in the bag.'

These examples reveal that the modal element /*kwn*/ is appropriate in a weak epistemic context in (16), supporting its classification as a weak epistemic modal. Its use was judged to be inappropriate in the context provided in (17). One informant offered a correction, saying that /*gbʔ*/ would express the meaning of the target English sentence in this context. We turn to /*gbʔ*/ below, but we note here that these findings indicate that /*kwn*/ does not express strong epistemic modality.

The examples provided below evaluate the ability to express root modality with the use of /*kwn*/. These contexts present an assertion that represents a course of action that is either permissible (18) or required (19) on the basis of a given set of rules.

[9]Despite the choice of translation and gloss for modal predicates that have been provided in the previous literature and the choice of translation and gloss made here, it remains unclear at this point exactly which readings (i.e., ordering sources, as in Kratzer 1981) are available to each modal on a root interpretation. This is an ongoing aspect of the semantic component of the research presented here and must be left for a future occasion.

(18) *Weak root context*: Students are required to spend one hour reading in the library after school. Now that she has read for an hour, Salem can leave.

salɛm ti-xəjjɨd **ti-xəwwɨn**
Salem.F S.3FS-leave.IPFV S.3FS-might.IPFV
'Salem might leave.'

(19) *Strong root context*: Students are only allowed to spend one hour reading in the library after school. Now that she has read for an hour, Salem must leave.

salɛm ti-xəjjɨd **ti-xəwwɨn**
Salem.F S.3FS-leave.IPFV S.3FS-might.IPFV
'Salem might leave.'

As indicated, the use of /*kwn*/ in both of the contexts above was deemed to be inappropriate. We conclude, therefore, that /*kwn*/ cannot serve to express root modality with either weak or strong modal force. Corrections were once again offered that recommended the use of the other modal elements, specifically /*kʔl*/ in (18) and either /*gbʔ*/ or /*hlw*/ in (19). Thus, we conclude that /*kwn*/ serves exclusively to express weak epistemic modality. Again, this information is summarized above in Table 4.

3.1.2 The strong modals /*gbʔ*/ and /*hlw*/

Using the same contexts that were presented in the previous section, we investigate here the possible interpretations for the elements /*gbʔ*/ and /*hlw*/. It will be found that both elements serve as strong modals, expressing either root or epistemic modality. Tesfay (2016) translates or glosses /*gbʔ*/ variably as 'must,' 'need,' or 'be necessary.' Tesfay (2016) and Gebregziabher (2021) translate and gloss /*hlw*/ as 'have to.'

Consider first the use of these elements in the contexts that are appropriate for epistemic modality. The example in (20) prompts a weak epistemic interpretation:

(20) *Weak epistemic context*: Salem is looking for her key but cannot find it. She hasn't looked in her bag or in her jacket. Salem thinks to herself: The key might be in the bag.

a. # ʔɨt-a məftəh ʔab borsa kɨ-tɨ-hilu **ʔall-o-wa**
that-FS key.F LOC bag IRR-S.3FS-COP.NPST have.IPFV-S.3MS-O.3FS
'The key has to be in her bag.'

b. # ʔɨt-a məftəh ʔab borsa kɨ-tɨ-hilu **jɨ-gɨbaʔ-a**
that-FS key.F LOC bag IRR-S.3FS-COP.NPST S.3MS-need.IPFV-O.3FS
'The key should be in her bag.'

As shown above, neither of these elements are appropriate with the intended meaning for the context provided. These examples prompted the comment that only /*kwn*/, which has been shown to be a weak epistemic modal, is possible in this instance. Thus, we conclude that neither /*gbʔ*/ nor /*hlw*/ express weak epistemic modality.

The examples in (21) probe for a strong epistemic interpretation for these elements:

(21) *Strong epistemic context*: Salem is looking for her key but cannot find it. She has looked everywhere in her apartment except for in her bag. Salem thinks to herself: The key must be in the bag.

a. ʔɨt-a məftəħ ʔab borsa kɨ-tɨ-hilu **ʔall-o-wa**
that-FS key.F LOC bag IRR-S.3FS-COP.NPST have.IPFV-S.3MS-O.3FS
'The key must be in the bag.'

b. ʔɨt-a məftəħ ʔab borsa kɨ-tɨ-hilu **jɨ-gɨbaʔ-a**
that-FS key.F LOC bag IRR-S.3FS-COP.NPST S.3MS-need.IPFV-O.3FS
'The key must be in the bag.'

While both examples are appropriate in this context, participants noted that /*hlw*/ and /*gbʔ*/ express different degrees of strength or certainty with regard to the speaker's assertion. This is a distinction that is intuitively similar to the difference one can observe between *must* and *should* in English, which leads us to adopt different translations for the Tigrinya expressions. We did not, however, observe a consensus among our informants with respect to which element is stronger and which is more appropriate in the particular context provided. Interestingly, the variation was a function of dialect. Speakers of the Eritrean dialect perceive /*hlw*/ to be the stronger and more appropriate of the pair, while our Ethiopian consultant considered /*gbʔ*/ to be stronger and more appropriate. Similar to the points made in section 2 and footnote 9, we leave it to future occasions to sort out both the full extent of the dialectal variation in Tigrinya and the fine-grained semantic distinctions amongst its verbal modals.

The examples below demonstrate the use of these modal elements in the root contexts established above. Example (22) prompts a weak root modal interpretation and (23) prompts the strong root modal interpretation.

(22) *Weak root context*: Students are required to spend one hour reading in the library after school. Now that she has read for an hour, Salem can leave.

a. # salɛm kɨ-tɨ-xəjjɨd **ʔall-o-wa**
Salem.F IRR-S.3FS-leave.IPFV have.IPFV-S.3MS-O.3FS
'Salem has to leave.'

b. # salɛm kɨ-tɨ-xəjjɨd **jɨ-gɨbaʔ-a**
Salem.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'Salem needs to leave.'

(23) *Strong root context*: Students are only allowed to spend one hour reading in the library after school. Now that she has read for an hour, Salem must leave.

a. salɛm kɨ-tɨ-xəjjɨd **ʔall-o-wa**
Salem.F IRR-S.3FS-leave.IPFV have.IPFV-S.3MS-O.3FS
'Salem has to leave.'

b. salɛm kɨ-tɨ-xəjjɨd **jɨ-gɨbaʔ-a**
Salem.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'Salem needs to leave.'

These examples reveal that the use of /*gbʔ*/ or /*hlw*/ is inappropriate in the weak root context of (22). Use of these elements in such a context elicited comments that they are too strong because Salem is merely permitted to leave. It is for this reason that they are entirely appropriate in the strong context in (23), where it is required that she leave.

Thus, as shown in Table 4 above, we conclude that both of the modal elements /*gbʔ*/ and /*hlw*/ permit root and epistemic interpretations. However, while they are compatible with strong, necessity meanings, they are not capable of expressing weak, possibility meanings.

3.1.3 The weak modal /kʔl/

Finally, we turn to the modal element /kʔl/, which can be used to express both root and epistemic modality, but is only appropriate for expressing weak, possibility meanings. Tesfay (2016) translates this element as either 'can' or 'able to'.

We start, again, by investigating the appropriateness of this modal in a weak epistemic context (24) and a strong epistemic context (25).

(24) *Weak epistemic context*: Salem is looking for her key but cannot find it. She hasn't looked in her bag or in her jacket. Salem thinks to herself: The key might be in the bag.

ʔɨt-a məftəh ʔab borsa kɨ-tɨ-hilu **tɨ-xəʔɨl** (ʔi-jja)
that-FS key.F LOC bag IRR-S.3FS-COP.NPST S.3FS-be_able.IPFV AUX.NPST-S.3FS
'The key could be in the bag.'

(25) *Strong epistemic context*: Salem is looking for her key but cannot find it. She has looked everywhere in her apartment except for in her bag. Salem thinks to herself: The key must be in the bag.

ʔɨt-a məftəh ʔab borsa kɨ-tɨ-hilu **tɨ-xəʔɨl** (ʔi-jja)
that-FS key.F LOC bag IRR-S.3FS-COP.NPST S.3FS-be_able.IPFV AUX.NPST-S.3FS
'The key could be in the bag.'

In contrast to the modal elements in the previous section, /kʔl/ is able to express weak epistemic modality, but not strong epistemic modality. The contrast elicited the comment that /kʔl/ indicates only that it is possible that the key is in the bag, not that it must be.

The examples below investigate the appropriateness of using the element /kʔl/ in a weak root modality context in (26) and a strong root modality context in (27).

(26) *Weak root context*: Students are required to spend one hour reading in the library after school. Now that she has read for an hour, Salem can leave.

salɛm kɨ-tɨ-xəjjɨd **tɨ-xəʔɨl**
Salem.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV
'Salem can leave.'

(27) *Strong root context*: Students are only allowed to spend one hour reading in the library after school. Now that she has read for an hour, Salem must leave.

salɛm kɨ-tɨ-xəjjɨd **tɨ-xəʔɨl**
Salem.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV
'Salem can leave.'

The observed contrast between root interpretations demonstrates that /kʔl/ permits a weak root interpretation, but not a strong root interpretation. Similar to what was observed above, this contrast elicited the comment that Salem is merely permitted to leave, not required to do so. This makes /kʔl/ the appropriate term in (26) and not possible in (27).

We conclude, therefore, that /kʔl/ is an element that expresses either root or epistemic modality. It is limited, however, to weak, possibility readings, as indicated in Table 4.

3.2 Previous analyses of Tigrinya modals

Having established the range of interpretations for modal elements in Tigrinya, which we previously summarized in Table 4, we begin to turn our attention to the syntactic representations in which they are employed. Before presenting our own analyses, we first review the generative linguistic literature that is available on the topic.

3.2.1 Tesfay 2016

In an extensive discussion of verbal modality in Tigrinya, Tesfay (2016:ch.6.3) proposes a categorial difference amongst the modal elements explored above. Namely, /*kwn*/ 'might' and /*hlw*/ 'must/have to' are claimed to be modal auxiliaries. With regards to their syntax, it is asserted that these elements are generated in the T^0 projection of a mono-clausal structure. This is demonstrated for /*kwn*/ with the structure in (28).

(28) *The root* /kwn/ *claimed to be a modal auxiliary in* T^0

[$_{CP}$ binyam [$_{vP}$ siwwa sätj-u] **ji-xäwwin**]
Binyam local_beer drink.PFV-S.3MS S.3MS-might.IPFV

'Binyam might have drunk local beer.' Tesfay (2016:205, (18g))

On the other hand, Tesfay (2016) proposes to treat /*gbʔ*/ 'should/need to' as a main verb. While it does not seem to be stated explicitly, we gather from the discussion in Tesfay 2016:ch.6.3 that /*kʔl*/ 'can/be able to' is similarly determined to be a main verb. Both of these are treated as unaccusative CP-embedding predicates, creating bi-clausal structures.[10] It is suggested further that, while more research is necessary, they appear in several syntactic frames that reveal an optional Raising transformation. Consider example (29) as a point of illustration. Tesfay (2016:204) observes that the logical subject *nissa* 'she' is cross-referenced by the subject markers both on the embedded predicate and on the verbal elements in the matrix clause.

(29) *Raising-to-Subject syntax for modal verbs*

[$_{CP}$ **nissa**$_1$ [$_{CP}$ t_1 ki-**t**-mäṣṣiʔ] **ti**-xəʔil näjr-**a**
she COMP-S.3FS-come.IPFV S.3FS-be_able.IPFV AUX.PST-S.3FS

'It could have been possible for her to come.' (Tesfay 2016:204, (17c))

This is expected, the claim goes, if the logical subject *nissa* 'she' is generated in the embedded clause and undergoes Raising to the grammatical subject position of the matrix clause.

The application of Raising is understood to be optional on the basis examples like (30). In this case, the subject marker on the embedded predicate cross-references the logical subject *nissixa* 'you(NOM.MS)' while the matrix modal verb shows default 3MS subject marking.

(30) *In-situ syntax with expletive subject for modal verbs*

[$_{CP}$ *expl* [$_{CP}$ (**nissixa**) ki-**t**-käjjid] **ji**-gibbaʔ]
you.NOM.MS COMP-S.2MS-help.IPFV S.3MS-must.IPFV

'You need to go.' (Tesfay 2016:207, (19a))

Tesfay (2016:213) sees this agreement pattern as arising from a derivation in which an expletive subject is inserted in the grammatical subject position of the matrix clause to produce default agreement on the modal verb. As the sole embedded argument, the logical subject *nissixa* 'you(NOM.MS)' is properly expected to result in subject agreement with the embedded predicate.

[10] In sections 4 and 5 we examine evidence for and against the bi-clausality of the different modal elements.

Agreement patterns like what is found in (31) are taken to motivate a third type of derivation (Tesfay 2016:217–221). Observe that the embedded predicate still agrees with the logical subject while the matrix modal verb once again shows default subject agreement. These appear alongside an object marker *-akka* on the modal verb in the matrix clause which also cross-references the logical subject *nɨssɨxa* 'you(NOM.MS).'

(31) *Topicalization from object syntax for modal verbs*

[$_{CP}$ (**nɨssɨxa**$_1$) *expl* [$_{VP}$ t_1 [$_{CP}$ kɨ-**t**-käjjɨd] **jɨ**-gɨbba?-**akka**]]
you.NOM.MS COMP-S.2MS-help.IPFV S.3MS-must.IPFV-O.2MS

'You need to go.' (Tesfay 2016:207, (19b))

Default subject agreement in the matrix clause is again taken to suggest the presence of an expletive subject. By analogy with possessive uses of /*gb?*/, which are presented in section 6 of this paper, Tesfay (2016) interprets the presence of an object marker as indicating that the logical subject *nɨssɨxa* 'you(NOM.MS)' is generated as an internal argument of the matrix modal verb, not as an embedded argument. The unmarked nominative case of this object is licensed under topicalization (see footnote 6). It is not made entirely clear how the relationship between the topicalized matrix object and the subject agreement marker on the embedded predicate is mediated.

In addition to the discussion to follow, we would note that the examples in (29)–(31) do not form a minimal triplet. For us, this undermines the argumentation leading to the conclusion that the modal elements /*k?l*/ and /*gb?*/ share related derivational paths. Indeed, in the sections that follow, we will present a range of evidence that motivates alternative and distinct treatments of these modal elements. While we will substantiate the claim that /*kwn*/ 'might' is an auxiliary, we will argue that /*hlw*/ 'must/have to' is a modal predicate, in line with the analysis in Gebregziabher 2021 discussed immediately below. We will also provide a range of evidence to argue that the modal predicates /*gb?*/ 'should/need to' and /*k?l*/ 'can/be able to' have distinct argument structures that drive different syntaxes, neither of which involves Raising.

3.2.2 Gebregziabher 2021

Gebregziabher (2021) presents a more pointed investigation of the relationship between possession and deontic root modality as expressed by the element /*hlw*/. A representative example of /*hlw*/ as a modal with the meaning of 'must/have to' and a sketch of its syntactic representation and derivation is provided in (32).

(32) *Raising-to-Object-to-Subject syntax for* /hlw/

[$_{CP}$ **nɨssa**$_1$ [$_{VP}$ t_1 [$_{TP}$ t_1 kɨ-**t**-məs'sʼɨʔ] ʔallew-**wa**]]
she FUT-S.3FS-come.IPFV HAVE.PFV-O.3FS

'She has to come.' (Gebregziabher 2021:104, (43))

For Gebregziabher (2021), the relevant descriptive properties of this construction include the embedded subject marker and the matrix object marker, both of which cross-reference *nɨssa* 'she', the nominative logical subject.

Like the treatment of /*gb?*/ 'should/need to' in Tesfay 2016, the analysis of (32) presented in Gebregziabher 2021 proceeds by analogy with the possessive use of /*hlw*/. The agreement observed between the object marker on this verbal element and the logical subject *nɨssa* 'she' arises from the status of *nɨssa* 'she' as an argument of the embedded predicate. This makes it possible for the matrix v^0 controlling object marking to identify *nɨssa* 'she' as a goal for an AGREE relation (Chomsky 2001), as per the discussion in section 2.2. The nominative case marking observed on this argument is expected to follow from a Raising-to-Subject derivation, driven by an EPP feature in the matrix clause. This movement is claimed to proceed successively through the specifier of a high matrix ApplP (e.g., Pylkkänen 2008). On our understanding, this essentially has the purpose of assigning a Θ-role to *nɨssa* 'she' as an affectee of the modal

obligation.

Thus, like Tesfay's (2016) claims regarding /*gbʔ*/ 'should/need to,' the modal verb /*hlw*/ 'must/have to' is proposed to have a Raising-to-Subject derivation. Also like Tesfay 2016, it is not made explicit how subject agreement in the embedded predicate arises. Although, one can surmise that this is a reflection of the claim that the logical subject *nissa* 'she' is generated as an argument of the embedded clause.

As noted, we will depart in significant ways from the claims made in both Tesfay 2016 and Gebregziabher 2021. For one, while it is not glossed as such in Gebregziabher 2021, the modal element /*hlw*/ in (32) shows default 3MS subject agreement. Thus, we see this example as actually having the exact same descriptive profile as /*gbʔ*/ in example (31). This forms part of our evidence in sections 4 for assigning /*hlw*/ and /*gbʔ*/ the same syntax. Moreover, we will see that this default agreement in both cases is obligatory, strongly suggesting the unavailability of Raising-to-Subject derivations. This will square nicely with independent evidence that the logical subject of /*hlw*/ and /*gbʔ*/ constructions remains in the embedded clause, while in section 5 it will be concluded that the logical subject of /*kʔl*/ constructions is the grammatical subject of the matrix clause.

4 Modal auxiliary v. modal predicate: A categorial difference

We turn now to our analysis of modals in Tigrinya by cataloguing and accounting for the properties of the weak epistemic /*kwn*/ 'might' that contrast with those of the strong modals /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to'.

We will show in the following sections that sentences containing /*kwn*/ are characterized by a specific set of morphosyntactic properties that distinguish it from both /*gbʔ*/ and /*hlw*/. We interpret the specific properties to be investigated as evidence that /*kwn*/ is a modal auxiliary that combines with the predicate in a mono-clausal structure. Simultaneously, we will argue that sentences containing /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' show complementary behavior with respect to the morphosyntactic properties under consideration. We propose that this complementarity is expected if /*gbʔ*/, as well as /*hlw*/, are pseudo-modal predicates that subcategorize for clausal complements, creating bi-clausal constructions. As noted, we distinguish these from the modal auxiliary /*kwn*/ by employing the term 'modal predicates'.

With these and other facts in mind, we will turn to providing an explicit syntax for constructions containing these particular modal elements. The representations that we will propose for the modal auxiliary and the modal predicates are sketched below:

(33) *Mono-clausal syntax for weak epistemic modal auxiliary* /kwn/

[$_{CP}$ ʔɨt-a səbəjti [$_{vP}$ ti-xəjjɨd] **tɨ-xəwwɨn**]
that-FS woman.F S.3FS-leave.IPFV S.3FS-might.IPFV

'The woman might leave.'

(34) *Bi-clausal Exceptional Object Marking syntax for strong modal predicates* /gbʔ/ *and* /hlw/

a. [$_{CP}$ *expl* [$_{CP}$ ʔɨt-a səbəjti kɨ-ti-xəjjɨd] **jɨ-gɨbaʔ-a**]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'The woman needs to leave.'

b. [$_{CP}$ *expl* [$_{MoodP}$ ʔɨt-a səbəjti kɨ-ti-xəjjɨd] **ʔall-o-wa**]
that-FS woman.F IRR-S.3FS-leave.IPFV have.IPFV-S.3MS-O.3FS
'The woman has to leave.'

Where we diverge significantly from the previous analyses that were outlined in the preceding section is with respect to the syntax of /*gbʔ*/ and /*hlw*/. We argue that the morphosyntactic properties investigated immediately below

speak against a Raising analysis for either of these elements. We propose, instead, that these modal predicates embed what we refer to as Exceptional Object Marking constructions, wherein the matrix modal predicate exceptionally cross-references an embedded argument with object marking morphology.

4.1 Grammatical properties of /*kwn*/ v. /*gbʔ*/ and /*hlw*/

We begin with a detailed investigation of the morphosyntactic properties that distinguish the modal elements /*kwn*/, /*gbʔ*/, and /*hlw*/. The properties to be investigated in the subsections that follow are summarized in Table 5.

	Force	**Base**	**Category**	Mood Morphology	Complex Tense-Aspect	Subject Specification	Default Subject Marking	Object Marking
/kwn/	weak	epis	**Aux**	∅	*	same	*	*
/gbʔ/, /hlw/	strong	root/epis	**verb**	ki-	✓	different	✓	✓

Table 5: Summary of the morphosyntactic properties of modal elements in Tigrinya (version 1/2)

4.1.1 Mood morphology

The first noticeable difference between clauses expressing weak epistemic modality with /*kwn*/ 'might' and clauses expressing strong modality with /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' is the presence or absence of the prefix *kɨ-* on the additional verbal element. This prefix has been described in the literature as a (goal) conjunction (Leslau 1941, Bulakh 2019), a purposive particle (Nazareth 2011), a future tense marker (Gebregziabher 2021), and a complementizer (Tesfay 2016).

In addition to the modal constructions under consideration in this paper, the *kɨ-* prefix appears in future-oriented clauses, on the embedded verb of rationale clauses, temporal adverbial constructions, and various (non-)finite complement clauses (see Author in preparation). Relevant examples are provided in (35)–(38) below:

(35) *Mono-clausal future constructions with* kɨ-[11]

ħanti mɛkina **kɨ**-∅-gɛzzɨʔ ʔɨ-jjɛ
one-FS car IRR-S.1S-buy.IPFV COP.NPST-S.1S

'I will buy a car.'

(36) *Rationale clause with* kɨ-

Yonas nä-t-a bätri **k**-i-säbr-∅-a wäsid-u-wa
Yonas OBJ-this-3FS stick IRR-S.3MS-break.IPFV-O.3FS take.GER-S.3MS-O.3FS

'Yonas took the stick in order to break it.' (adapted from Nazareth 2011:47, (43b))

(37) *Temporal adverbial construction with* kɨ-

ʔanɛ **kɨ**-∅-bɛlɨʔ **k**-ɛll-ɛxu nɨssu rɨʔɨj-u-ni
I IRR-S.1S-eat.IPFV IRR-AUX.PFV.S.1S he see.GER.S.3MS-O1S

'While I was eating, he saw me.'

(38) *Non-finite complementation with* kɨ-

ʔɨt-om ʔawɨdat ʔab-t-i ʁɨlaj **kɨ**-∅-hɛmbɨs-u rɨʔɨj-ɛ-jom
DEM-MP boy.P LOC-DEM-MS lake IRR-S.3MP-swim.IPFV-S.3MP see.GER-S.1S-O.3MP

'I saw the boys swimming in the lake.'

[11] Note that the prefixation of additional morphemes may result in the reduction or deletion of subsequent subject marker prefixes.

In light of its overall distribution, we tentatively identify the verbal prefix *kɨ-* here as an irrealis mood marker and gloss it as such throughout the paper.

Turning to the modal elements under consideration, observe in (39) that the weak epistemic modal /*kwn*/ 'might' shows a strong preference for appearing with lexical verbs which are not prefixed by the marker *kɨ-*.

(39) *Complement of* /kwn/ *resists mood marking morphology*

ʔɨt-a səbəjti (***kɨ-**)tɨ-kɨjjɨd **tɨ-xəwwɨn**
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-might.IPFV

'The woman might leave.'

In contrast, the two strong modals /*gbʔ*/ and /*hlw*/ have a strong preference for appearing with lexical verbs that are marked with a *kɨ-*prefix, as shown in (40) and (41).

(40) *Complement of* /gbʔ/ *carries mood morphology*

ʔɨt-a səbəjti ***(kɨ-)**tɨ-xɛjjɨd **jɨ-gɨbaʔ-a**
that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS

'The woman needs to leave.'

(41) *Complement of* /hlw/ *carries mood morphology*

səgən ʔaʁ'ɛdim-a ***(kɨ-)**tɨbɨts'ɨħ **ʔall-o-wa**
Segen.F early-FS IRR-arrive.IPFV-S.3FS have.IPFV-S.3MS-O.3FS

'Segen has to arrive early.'

This is a contrast that we interpret as supporting the proposed difference in the size of the complement that the two sets of modal elements take. Namely, the lack of the mood marker *kɨ-* on the additional verb with the weak epistemic modal /*kwn*/ reflects the absence of the syntactic structure responsible for introducing Mood between the modal and the additional lexical verb. This, we believe, calls for a mono-clausal construction in which /*kwn*/ is a modal auxiliary that combines directly with (an extended projection of) the predicate. At the same time, the kɨ-marking on the additional verb in the presence of the strong modals /*gbʔ*/ and /*hlw*/ would indicate the presence of the relevant structure for introducing Mood. This is consistent with previous claims in Tesfay 2016 and Gebregziabher 2021 that the strong modals are predicates that take clausal complements to appear in bi-clausal constructions.[12]

4.1.2 Complex tense-aspect constructions

Matrix clauses in Tigrinya permit complex tense-aspect constructions that combine imperfective and gerundive aspectual verb forms with tense auxiliaries. This includes the future construction shown above in (35), as well as a complex progressive and a complex perfect aspectual construction. Illustrative examples of the latter two have been adapted from Tesfay (2016:ch.6.3) and provided in (42) below:

[12]There is some dialectal variation to be noted regarding the distribution of the kɨ-prefix. While the Eritrean dialects strictly follow the pattern outlined above, our Ethiopian consultant permits all modal elements to appear optionally with a *kɨ-*marked verb. In all cases, the presence of *kɨ-* corresponds with a future-orientation for the event denoted by the additional verb.

Providing a full account for the distribution of *kɨ-* is outside the scope of this paper. Nonetheless, we believe that our analysis leaves room for the observed variation. To the extent that /*kwn*/ is a modal auxiliary in all dialects, it is not unreasonable to analogize cases in which it appears with a *kɨ-*marked verb with the future construction in (35). In that example too, we find an auxiliary appearing with a mood marked verb to indicate a future-oriented meaning. Moreover, given our claim that the modal predicates select for reduced complement clauses (see sec. 4.2.2), this leaves open the possibility that the reduced clausal complement may also lack a Mood projection, or at least fail to expone this projection. The question then becomes why the two dialects differ with regard to the possibility of these alternatives. With that said, we would also add that the generalization promoted in the text is consistent with what one would surmise on the basis of the data available in the literature (Tesfay 2016, Gebregziabher 2021).

(42) a. *Complex progressive construction in Tigrinya*[13]

binjam məts'ħaf **ji-ts'ɨħɨf** { **ʔall-o** / **nejjr-u** }
Binyam book S.3MS-write.IPFV AUX.NPST-S.3MS AUX.PST-S3MS
'Binyam { is / was } writing a book.'

b. *Complex perfect construction in Tigrinya*

binjam sɨwwa **sətj-u** { **ʔi-jju** / **nejjr-u** }
Binyam local_beer drink.GER-S3.MS AUX.NPST-S.3MS AUX.PST-S3MS
'Binyam { has / had } drunk beer.'

Relevant to the present discussion is that there is a constraint in the grammar that limits clauses to only a single auxiliary.[14] Thus, one does not observe constructions in which a clause contains a string of multiple auxiliaries, as would be familiar in a language like English (e.g., *Binyam might have been writing a book*).

It is interesting to observe in this context that the weak epistemic modal /*kwn*/ and the strong modals differ with respect to their ability to appear as a part of a complex tense-aspect constructions. As shown in (43), /*kwn*/ cannot appear with either a non-past or a past tense auxiliary.

(43) *Weak epistemic* /kwn/ *cannot appear in a complex tense-aspect construction.*

a. *ʔɨt-a səbəjti tɨ-xəjjɨd **tɨ-xəwwɨn** **ʔɨ-jja**
that-FS woman.F S.3FS-leave.IPFV S.3FS-IPFV.might AUX.NPST-3FS
Intended: 'The woman might be leaving.'

b. *ʔɨt-om k'oləʕu jɨ-nbɨb-u **jɨ-xon-u** **nəjjr-om**
that-MP children S.3MP-read.IPFV-S.3MP S.3MP-might.IPFV-S.3MP AUX.PST-S.3MP
Intended: 'The children were possibly reading.'

This is possible, however, with the strong modal element /*gbʔ*/. The examples in (44) show /*gbʔ*/ appearing with both past and non-past tense auxiliaries.[15]

(44) *Strong modal* /gbʔ/ *appears in complex tense-aspect constructions*

a. ʔɨt-a səbəjti tɨ-xəjjɨd **jɨ-gɨbaʔ-a** **ʔɨ-jju**
that-FS woman.F S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS AUX.NPST-S.3MS
'The woman does need to leave.'

b. ʔɨt-om təmharo kɨ-∅-nbɨb-u **ji-gɨbaʔ-om** **nəjjr-u**
that-MP student.PL IRR-S.3MP-read.IPFV-S.3MP-O.3FS S.3MS-need.IPFV-O.3MP AUX.PST-S.3MS
'The students needed to read.'

Following the approach that we outlined at the beginning of the section, this is a predicted contrast in light of the language's restriction against multiple auxiliaries in a single clause. As as a modal auxiliary, we should expect that /*kwn*/ is in complementary distribution with other auxiliaries. The strong modal /*gbʔ*/, on the other hand, constitutes part of the predicate as a pseudo-modal verbal element. As such, it is correctly predicted that /*gbʔ*/ can appear as part of a complex-tense aspect construction with tense auxiliaries.

[13] It is worth drawing attention to the fact that the root /*hlw*/ serves both as the predicative element that is under investigation in this paper as well as a tense auxiliary. See section 6 for discussion of the other various uses of this element.

[14] Presumably, a constraint against multiple auxiliaries could be derived from facts about the nature of verb raising in the language. We leave an account of this fact for another occasion given the present purposes of the paper.

[15] For reasons that we are not entirely prepared to handle, the strong modal /*hlw*/ is unable to appear in complex tense-aspect constructions. Our suspicion is that this might reflect either a functional dispreference for adjacent instances of /*hlw*/ or a semantic oddity that is similarly found in English sentences such as: *?/??The woman is having to leave*. For further discussion see Author (submitted).

4.1.3 Specification for same or different subjects

In typical mono-clausal structures in Tigrinya all verbal elements of a clause (viz., the lexical verb and any auxiliary) show ϕ-complete agreement with the grammatical subject. Recall from section 2.2 that this means that both the lexical verb and the tense auxiliary in (45) carry subject marking morphology that cross-references the argument that is promoted to Spec,TP. This is the nominal constituent *ħanti səbəjti* 'the woman' in the present example.

(45) *Tense auxiliaries must agree with the grammatical subject*

ħanti	**səbəjti**	maj **ti**-səttij	ʔall-**a**	(*ʔall-**o**)
one.FS	woman.F	water.M S.3FS-drink.IPFV	AUX.NPST-S.3FS	AUX.NPST-S.3MS

'A woman is drinking water.'

It is worth taking note specifically that, in (45), the tense auxiliary cannot be specified for a different subject than what is specified on the lexical verb. In the case at hand, it is shown that a default 3MS subject marker results in ungrammatically.

It is in this regard that we find another contrast between /*kwn*/ and the strong modal elements /*gbʔ*/ and /*hlw*/. Consider first the example in (46). Like the tense auxiliary above, the weak epistemic /*kwn*/, along with the main verb, must agree with the logical subject of the sentence, *ʔiɨta səbəjti* 'the woman'. When the subject marker on /*kwn*/ is specified for default 3MS, the result is ungrammaticality.

(46) *Weak epistemic* /kwn/ *must agree with the logical subject*

ʔiɨt-a	**səbəjti**	**ti**-kijjiɨd	**ti**-xəwwiɨn	(***ji**-xəwwiɨn)
that-FS	woman.F	S.3FS-leave.IPFV	S.3FS-might.IPFV	S.3MS-might.IPFV

'The woman might leave.'

The situation is different for the two strong modals /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to', for which examples are presented in (47) and (48) respectively. Observe that both of these elements can be specified for a different subject than the *ki*-marked lexical verbs. While the lexical verbs cross the reference the logical subjects, *ʔiɨta səbəjti* 'the woman' and *Segen*, the modal predicates are both specified for default 3MS subject marking.

(47) *Strong modal* /gbʔ/ *does not agree with the logical subject*

ʔiɨt-a	**səbəjti**	ki-**ti**-xəjjiɨd	**ji**-giɨbaʔ-a
that-FS	woman.F	IRR-S.3FS-leave.IPFV	S.3MS-need.IPFV-O.3FS

'The woman needs to leave.'

(48) *Strong modal* /hlw/ *does not agree with the logical subject*

səgən	ʔaʁʾədim-a	ki-**ti**-biɨtsʾiɨħ	ʔall-**o**-wa
Segen.F	early-FS	IRR-S.3FS-arrive.IPFV	have.IPFV-S.3MS-O.3FS

'Segen has to arrive early.'

This is a difference that, again, the account that is being pursued is prepared to handle. The fact that the modal /*kwn*/ must agree with the logical subject of the sentence in (46) favors treating it as an auxiliary in a mono-clausal construction; with only a single clause, there will be a single grammatical subject that must be cross-referenced by all verbal elements. On the other hand, the fact that the strong modals /*gbʔ*/ and /*hlw*/ may be specified with a subject marker that is distinct from the lexical verb motivates an alternative treatment. Specifically, this suggests that the strong modals are not auxiliaries. Furthermore, this suggests that the strong modals have grammatical subjects that are distinct from the logical subjects of these sentences. This is a natural consequence of the proposed bi-clausal structures where an additional matrix expletive subject controls the subject marking on the modal predicates.

4.1.4 Default subject marking

We would add to the data in the previous section the observation that the strong modals /*gbʔ*/ and /*hlw*/ not only can be specified for a different subject than the *kɨ*-marked lexical verb, but in fact they must be. That is, the strong modals /*gbʔ*/ and /*hlw*/ only permit default 3MS subject markers. This is demonstrated in (49) and (50), where agreement with the logical subjects *ʔɨta səbəjti* 'the woman' and *Segen* results in ungrammatically. Note that this is the case regardless of the presence of an object marker, which we discuss in the following subsection.

(49) *Strong modal* /gbʔ/ *cannot agree with logical subject*

***ʔɨt-a**	**səbəjti**	kɨ-tɨ-xəjjɨd	**tɨ**-gɨbaʔ(-a)	(**jɨ**-gɨbaʔ-a)
that-FS	woman.F	IRR-S.3FS-leave.IPFV	S.3FS-need.IPFV-O.3FS	S.3MS-need.IPFV-O.3FS

'The woman needs to leave.'

(50) *Strong modal* /hlw/ *cannot agree with logical subject*

***səgən**	ʔaʁ'ədim-a	kɨ-tɨ-bɨts'ɨħ	ʔall-**a**(-wa)	(ʔall-**o**-wa)
Segen.F	early-FS	IRR-S.3FS-arrive.IPFV	have.IPFV-S.3FS-O.3FS	have.IPFV-S.3MS-O.3FS

'Segen has to arrive early.'

This stands in contrast to the weak epistemic modal /*kwn*/. We saw from example (46) in the previous section that /*kwn*/ must agree with the logical subject of the sentence and disallows default subject marking.

The fact that the strong modals are necessarily specified for different subjects implies the presence of multiple grammatical subjects in these sentences. This follows straightforwardly from the bi-clausal syntax proposed for both of the strong modals /*gbʔ*/ and /*hlw*/, where multiple grammatical subject positions are projected. The requirement for default subject agreement is especially informative. As we will discuss in more detail in section 4.2.2, this points to an unaccusative argument structure for the strong modals whereby an expletive serves as the grammatical subject of the higher clause.

4.1.5 Object marking

The availability of object marking represents the last dimension on which we contrast verbal modals. As discussed in section 2.2, accusative-marked direct objects are typically cross-referenced by object marking on the lexical verb. The example in (51) demonstrates that object marking can in fact only appear on a verbal element of the predicate; it is not possible for tense auxiliaries to host object marking morphology.

(51) *Tense auxiliaries cannot carry object marking morphology*

ʔɨt-i	səbaj	**n-ət-a**	**dəbdabe**	ts'ɨħif-u-**wa**	ʔall-o-(***wa**)
that-MS	man.rM	ACC-that-FS	letter	write.GER-S.3MS-O.3FS	AUX.NPST-S.3MS-O.3FS

'That man has written the letter.'

This is a restriction that can be expected to follow from the analysis of object marking that was outlined in section 2.2. To the extent that the object marker is the realization of a formal relationship between v^0 and the highest internal argument, it is possible to assert that auxiliaries, which sit outside the predicate, appear too high in the clause to participate in this morphosyntactic relationship.

With regard to the modal elements under consideration, observe in (52) that the weak epistemic /*kwn*/ 'might' similarly cannot host object marking morphology. This is regardless of the role of the cross-referenced argument as the logical/grammatical subject or object of the sentence.

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

a. **ʔɨt-a** **səbəjti** tɨ-kɨjjɨd tɨ-xəwwɨn(*-**a**)
that-FS woman.F S.3FS-leave.IPFV S.3FS-might.IPFV-O.3FS
'The woman might leave.'

b. ʔit-a səbajti **n-ət-a** **məts'ħaf** tɨ-nbɨb-a tɨ-xəwwɨn(*-**a**)
that-FS woman.F ACC-that-FS book S.3FS-read.IPFV-O.3FS S.3FS-might.IPFV-O.3FS
'The woman might read the book.'

In line with the pattern than has been established throughout this subsection, the situation is different with the two strong modals /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to'. Observe in (53) and (54) that both of these elements are able to host object marking morphology.[16]

(53) *Strong modal /gbʔ/ optionally hosts object marking morphology*

ʔɨt-a **səbəjti** kɨ-tɨ-xəjjɨd jɨ-gɨbbaʔ**(-a)**
that-FS woman.F PROS-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'The woman needs to leave.'

(54) *Strong modal /hlw/ hosts object marking morphology*

ʔɨt-om **təmaharo** kɨ-s'nɨʕ-u ʔall-o-**wom**
that-MP student.P IRR-study.IPFV-S.3MP have.IPFV-S.3MS-O.3MP
'The students have to study.' (adapted from Gebregziabher 2021:85, (16b))

The inability of the weak epistemic /*kwn*/ to host object marking morphology is entirely consistent with the analysis of this element as an auxiliary. On this analysis, it is correctly predicted to behave like other auxiliaries in this regard. By the same measure, the strong modals /*gbʔ*/ and /*hlw*/ behave like verbs. The ability to host object marking morphology is an expected property of constituents of the predicate.

4.2 Theoretical analyses of modal auxiliaries and strong modal predicates

The preceding subsections presented a discussion of several morphosyntactic properties that differentiate the weak epistemic modal /*kwn*/ 'might' from the strong modals /*gbʔ*/ 'should/need to' and */hlw/* 'must/have to'. These properties, which were summarized in Table 5, point to two primary conclusions. The first is in regard to syntactic category. It was shown that /*kwn*/, in addition to being in complementary distribution with auxiliaries, exhibits the behaviors of auxiliaries, as opposed to elements of the predicate. The modal expressions /*gbʔ*/ and /*hlw*/ on the other hand behave like elements of the predicate, and not like auxiliaries, with respect to the properties under investigation. Several of those properties listed in Table 5 also point toward a structural difference between constructions with these elements. More specifically, /*kwn*/appears as an auxiliary in mono-clausal constructions while the modal predicates /*gbʔ*/ and /*hlw*/ embed a clausal complement.

In the following subsections we present these syntactic analyses in further detail. We will show in slightly more detail how the proposed analyses capture those properties summarized in Table 5. We will also argue that the proposed analyses fair better than the alternatives in the literature with respect to their accounts for word order, sentential negation, and co-occurrence restrictions amongst the various modal elements.

[16]For reasons that we are not entirely prepared to handle on this occasion, object marking is optional on /*gbʔ*/ 'should/need to' but is obligatory on /*hlw*/ 'must/have to'. We return to a discussion of object marking on modal predicates in section 4.2.2. We refer the reader again to Authors (in prep.) for further discussion.

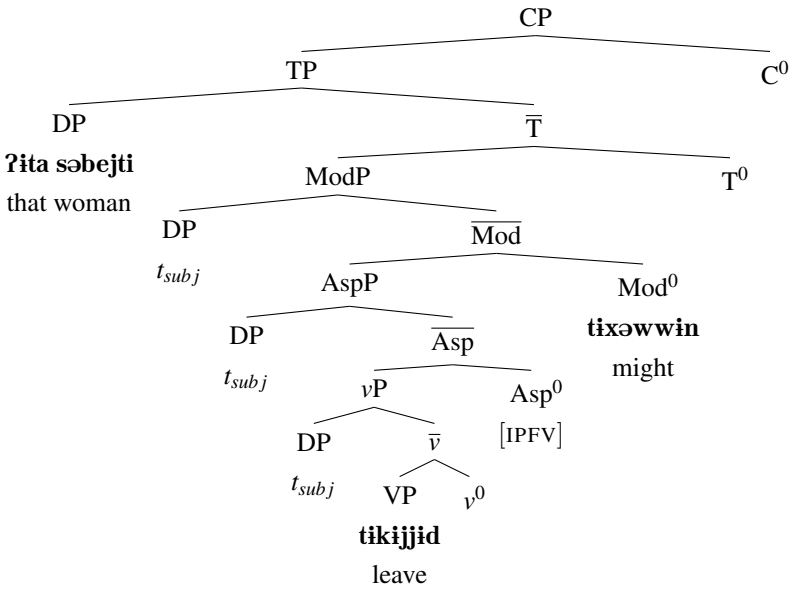
4.2.1 A monoclausal syntax for the weak epistemic modal /*kwn*/

Let us first look at the weak epistemic modal /*kwn*/ 'might'. The proposed representation that we have alluded to in various places is provided explicitly in (55).

(55) *Mono-clausal construction for weak epistemic modal* /kwn/

a. [$_{CP}$ ʔɨt-a səbəjti [$_{vP}$ ti-xəjjɨd] **tɨ-xəwwɨn**]
that-FS woman.F S.3FS-leave.IPFV S.3FS-might.IPFV
'The woman might leave.'

b.



In the structure above, /*kwn*/ is introduced as the head of a Mod(al)P, representing its status as an auxiliary. The modal combines with AspP, an extended projection of the predicate, as part of a mono-clausal structure. This representation and its derivation allows us to capture all of the morphosyntactic properties acknowledged in the previous subsections.

First, the representation in (55b) allows for an account of the dispreference for *kɨ*-marking on the lexical verb that was see in section 4.1.1. Let us assume that grammatical mood is encoded in a relatively high MoodP projection on the clausal spine, specifically outside the predicate. We can then assert that, as an auxiliary, the modal auxiliary takes as its complement an extended projection of the predicate, which includes aspectual information but precludes this high MoodP.

This account for the distribution of *kɨ*-marking is built on the idea that /*kwn*/ is an auxiliary and that it composes with the predicate, resulting in mono-clausal constructions. These are claims that find independent support from the distribution of sentential negation in the language. Sentential negation, which appears as the circumfix *ʔaj-(ɨ)n*, generally appears on the lowest verbal element in a clause. This means that, in complex tense-aspect constructions, including the future-oriented construction in (56) below, sentential negation appears on the lexical verb, as opposed to the tense auxiliary.[17]

[17]This is another domain in which we have observed some dialectal variation. For some speakers of the Eritrean dialect, but not the Ethiopian dialect, negation seems to optionally appear on either the lexical verb or the tense auxiliary in the complex progressive construction. Other complex tense-aspect constructions behave as expected given the generalization represented in (57). At present, we cannot offer an account of this fact. However, we suspect that this may be taken to indicate that the (complex) progressive constructions is more structurally complex than other verbal aspects.

(56) *Sentential negation appears on the main verb in complex tense-aspect constructions*

a. henok **ʔaj**-∅-∅-särɨx-**ɨn** ʔɨjj-u
Henok.M NEG-IRR-S.3MS-work.IPFV-NEG AUX.NPST-S.3MS
'Henok won't work.'

b. *henok k-i-särrɨx **ʔaj**-konä-**n**
Henok.M IRR-S.3MS-work.IPFV NEG-AUX.NPST.S.3MS-NEG
Intended: 'Henok won't work.' (p.c. Milena Abraham)

Knowing this, our proposed treatment of /*kwn*/ generates specific predictions regarding the distribution of negation in constructions with the weak epistemic modal. As the single auxiliary of a mono-clausal structure, it should not be possible for /*kwn*/ to host the sentential negation circumfix. Instead, the lexical verb should serve this role. This is indeed the case, as demonstrated in (57).

(57) *Sentential negation appears on the main verb in epistemic modal constructions*

a. nɨssɨxa walaħadɛ sɛb **ʔaj**-∅-tɨ-ħɨgiz-**ɨn** tɨ-xəwwɨn
you any.MS man NEG-IRR-S.2MS-help.IPFV-NEG S.2MS-might.IPFV
'It might be that you do not help anyone.'

b. *nɨssɨxa walaħadɛ sɛb tɨ-ħɨggiz **ʔaj**-tɨ-xəwɨn-**ɨn**
you.NOM.MS any.MS man S.2MS-help.IPFV NEG-S.2MS-might.IPFV-NEG
Intended: 'It's not possible that you help anyone.'

As we will see in the discussions to come, the distribution of sentential negation is yet another property that distinguishes /*kwn*/ from the other modal elements.

Given the abundance of evidence that the weak epistemic modal /*kwn*/ is an auxiliary, we will only briefly reiterate the importance of the complementary distribution of this element and other auxiliaries shown in section 4.1.2. In light of the limit to one auxiliary per clause in Tigrinya, the observed complementarity in complex tense-aspect constructions is entirely expected and accounted for.

Moving on to the observed agreement patterns, we start with the requirement, shown in section 4.1.3, for /*kwn*/ and the lexical verb to be specified for the same grammatical subject. This follows fairly straightforwardly from the fact that there is a single clause containing a single grammatical subject in the representation provided in (55b). As noted in section 2.2 we understand the grammatical subject in finite clauses to be that DP argument that moves successively through the specifier of each verbal projection to Spec,TP. This has the effect of placing the subject in a local AGREE relationship with any auxiliary—including the modal auxiliary /*kwn*/—resulting in subject markers that cross-reference the grammatical subject on all verbal elements.

The mono-clausal syntax presented in (55b) also provides us with several ways to understand the lack of default subject agreement discussed in section 4.1.4. Presuming that the insertion of an expletive precludes promotion of a DP argument to the lone grammatical subject position, one might assert that failing to promote an argument to grammatical subject, and thereby failing to agree with all verbal elements, results in a failure to (Case-)license that argument. Alternatively, one might seek a way to prevent insertion of the expletive in the context of this particular argument structure (e.g., Deal 2009). On this account, it would be the unlicensed insertion of the expletive argument, betrayed by the presence of default agreement on the auxiliary, that would be the culprit for the ungrammaticality of the sentence. Whichever route one chooses to take, the desired result would be that all verbal elements show contentful agreement with the logical subject of the clause.

Finally, the inability for auxiliaries, including /*kwn*/, to host object marking morphology seen in section 4.1.5 is the expected result of the analysis presented in (55b). Recall from section 2.2 that we treat object marking as a formal AGREE relationship between v^0 of the predicate and the highest internal argument. Because the modal auxiliary /*kwn*/ is not an element of the predicate, the default expectation should be that it does not interact with object marking

morphology, which is exactly the case.

4.2.2 An Exceptional Object Marking analysis of the strong modal predicates

Let us now look at the strong modal predicates /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to'. We have claimed that these elements are pseudo-modal predicates that appear in bi-clausal constructions. More specifically, we have claimed that these are unaccusative predicates that embed what we refer to as Exceptional Object Marking (EOM) constructions. As mentioned in the introduction, the term EOM is intentionally intended as an analogy to Exceptional Case Marking constructions. Thus, in the same way that a matrix predicate has been claimed to exceptionally interact with an argument of the embedded predicate in the English example in (58), so too do we claim that a matrix predicate in Tigrinya exceptionally interacts with embedded arguments.

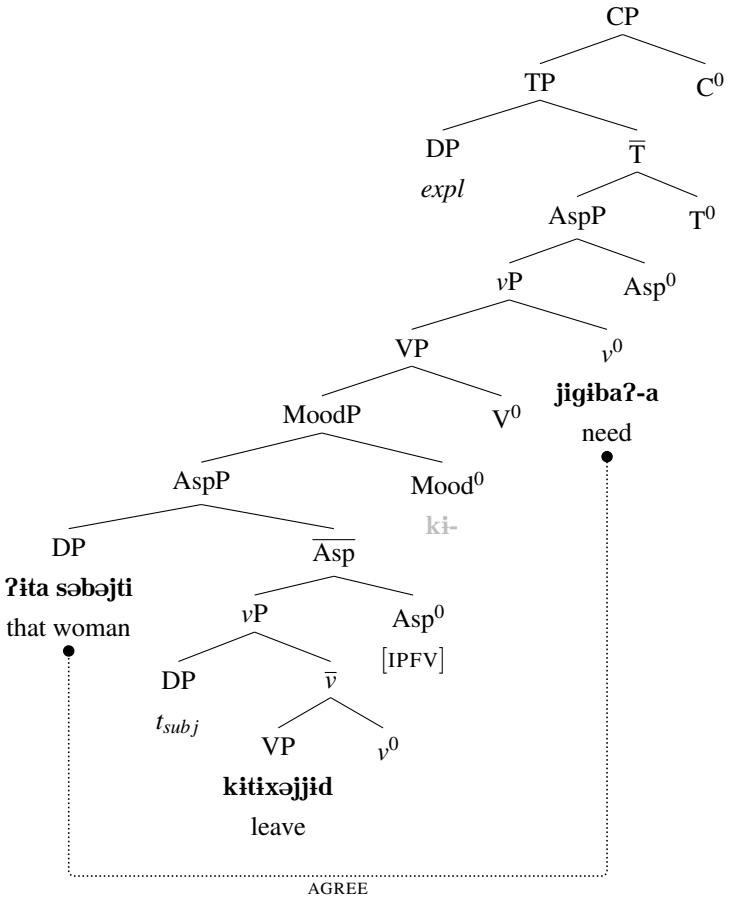
(58) They expect **her** to leave.

The representation that we are proposing for the strong modals is presented in (59). While the example provided includes only /*gbʔ*/ 'should/need to', we believe that the proposed representation can be extended straightforwardly to constructions with /*hlw*/ 'must/have to'.

(59) *Exceptional Object Marking construction for strong modal predicates*

a. [$_{CP}$ *expl* [$_{MoodP}$ ʔɨt-a səbəjti kɨ-ti-xəjjɨd] **jɨ-gɨbaʔ-a**]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'The woman needs to leave.'

b.



Comparing the structural representation for /*kwn*/ from (55b) to the structure in (59b) above reveals a couple of

notable differences. In the structure presently under consideration, the strong modals /*gbʔ*/ and /*hlw*/ are introduced as part of the matrix predicate, as opposed to being introduced in an auxiliary position.[18] This structure additionally shows the modal predicate combining with a reduced clausal complement, labeled here as a MoodP. We will see presently, that those properties of constructions containing strong modals, which were summarized in Table 5, are expected consequences of this syntax.

As noted above, we take the presence of the /*kɨ*/-prefix to indicate the presence of a relatively high projection of irrealis mood on the clausal spine. The strong preference for the presence of /*kɨ*/-marking on the lexical verb, which was shown in section 4.1.1 can be made to follow from the selectional properties of the strong modal predicates. Whereas the modal auxiliary /*kwn*/ combines with (an extended projection of) the predicate, the strong modals are proposed to be elements of the predicate that select for clausal complements. More specifically, we are proposing in (59b) that they select for clausal complements that place a projection of Mood between the modal predicate and the embedded lexical verb.

An operative difference between /*kwn*/ and the strong modals being examined here is that the latter are elements of the predicate that appear in a bi-clausal structure. With the discussion from the previous section in mind, this leads us to specific expectations about the distribution of sentential negation. As was shown in example (57), sentential negation typically appears on the lowest verbal element in a clause. The prediction, therefore, is that, unlike /*kwn*/, sentential negation will appear on the strong modals /*gbʔ*/ and /*hlw*/. The examples below demonstrate that this is precisely the case:

(60) *The strong modal predicate* /gbʔ/ *hosts sentential negation*

[kɨ-tɨ-xɛjjɨd] **ʔaj**-jɨ-gɨbaʔ-ka-**n**
IRR-S.2MS-leave.IPFV NEG-S.3MS-need.IPFV-O.2MS-NEG

'You do not need to leave.'

(61) *The strong modal predicate* /hlw/ *hosts sentential negation*[19]

[kɨ-tɨ-xɛjjɨd] jɨ-bəl-ka-**n**
IRR-S.2MS-leave.IPFV S.3MS-have.IPFV-O.2MS-NEG

'You do not have to leave.'

As elements of the matrix clause predicate, /*gbʔ*/ and /*hlw*/ will serve as the lowest verbal element within that higher clause. As such, they will be capable of hosting sentential negation.

These facts regarding negation are closely related to the observed property of the strong modal /*gbʔ*/ that it is able to appear in complex tense-aspect constructions of the kind shown in section 4.1.2. Recall that Tigrinya only permits one auxiliary per clause in addition to the predicate. On our account, wherein the strong modals are elements of the predicate, the higher aspectual and tense projections of the matrix clause in (59b) are correctly expected to be able to host an auxiliary. On a similar note, this account also makes a prediction regarding the co-ocurrence of the different modal elements. Given that the epistemic modal /*kwn*/ is an auxiliary and that the strong modals are elements of the predicate, they should be expected to appear together in "double-modal" constructions. Moreover, when they co-occur, the auxiliary /*kwn*/ should necessarily follow the strong modal predicate, given the word order reviewed in section 2.2. As illustrated by the example in (62), this prediction is borne out:

[18] The reader may also notice that we have placed the strong modal predicates in the v^0 positions, as opposed to V^0. This represents the categorial distinction we propose between the strong and weak modal predicates that was presented in Table 1. We return to this issue in section 6.

[19] Note that forming the negative of the predicate /*hlw*/ involves suppletion.

(62) *"Double-modal" construction with strong modal predicate + epistemic modal auxiliary*

[*expl* [nɨssɨxa maj kɨ-ti-sɛtti] **jɨ-gɨba?-ka** **jɨ-xəwwɨn**]
you.NOM.FS water PROS-S2FS-drink.IPFV S.3MS-need.IPFV-O.2MS S.3MS-might.IPFV

'You might need to drink water.'

Observations like those above are important for showing that strong modal predicates are morphosyntactically distinct from the modal auxiliary /*kwn*/. Importantly, it can also be shown that the strong modal predicates morphosyntactically overlap with non-modal elements that more transparently show their status as EOM predicates. This includes the verbal predicate /*ts'bj*/ 'expect', an example of which is provided in (63).

(63) *Exemplar for Exceptional Object Marking predicates in Tigrinya*

ʔɨt-a səbajti [ʔɨt-om təmharo n-ət-a mets'ħaf kɨ-∅-nbɨb-u-wa]
that-FS woman.F that-3MP student.PL ACC-that-FS book IRR-S.3MP-read.IPFV-S.3MP-O.3FS
tɨ-ts'əbɨj-om nəjjɪ-a
S.3FS-expect.IPFV-O.3MP AUX.PST-S.3FS

'The woman expected the students to read the book.'

Among the notable properties of the example above is that /*ts'bj*/, in the way being claimed for the strong modal predicates, embeds a clausal complement containing the *kɨ*-marked verb *nbɨbuwa* 'they read it' and its arguments. Additionally, we can observe the object marker *-om* on /*ts'bj*/, which is exceptionally controlled by the embedded subject *ʔɨtom temharo* 'those students'.

Of particular interest is the fact that (63) shows the use of /*ts'bj*/ in a complex tense-aspect construction. Specifically, the example in (63) shows that /*ts'bj*/ co-occurs with the past tense auxiliary *nejjra.* This is an expected fact given that /*ts'bj*/ is an element of the matrix predicate. The previous observation that the strong modals /*gbʔ*/ and /*hlw*/ similarly appear in complex tense-aspect constructions further supports their similar treatment as elements of the predicate, as opposed to auxiliaries.

Let us also add to this the fact that /*ts'bj*/ is able to host sentential negation, as shown in (64).

(64) [kɨ-ti-xəjjid] **ʔaj**-jɨ-ts'əbɨji-ka-**n**
IRR-S.3FS-leave.IPFV NEG-S3MS-want.IPFV-O.2MS-NEG
'He doesn't expect you to leave.'

As an element of the predicate that embeds a clausal complement, this too is an expected fact about /*ts'bj*/. Within the matrix clause, it is the lowest verbal element. Thus, the previous observation that /*gbʔ*/ and /*hlw*/ similarly are able to host sentential negation support their treatment as elements of the predicate that embed a clausal complement.

Before moving on, a note is in order regarding the claim that the clausal complement to the strong modals /*gbʔ*/ and /*hlw*/ has a reduced status. We have proposed that the clausal complement to these elements may contain as much structure as that provided by a projection of the irrealis mood marker /*kɨ-*/. We are claiming that this Mood head merges into a position that is higher than any aspectual projection, but appears below the tense projection of a clause (e.g., Cinque 1999). This is intended to account for the observed distribution of the /*kɨ*/-prefix as well as the fact, demonstrated below, that neither of the strong modal predicates is able to embed a complex-tense aspect construction. That is, the clausal complement to the strong modal predicates cannot contain future-oriented or tense auxiliaries. For example, it is not possible in (65) and (66) to embed a complex progressive construction under either /*gbʔ*/ or /*hlw*/:

(65) *The strong modal predicate /gbʔ/ cannot embed tense auxiliaries*

*[ʔɨt-a səbajti tɨ-nəbib **(kɨ)-ʔall-a**] jɨ-gɨbaʔ-a
that-FS woman.F S.3FS-read.IPFV IRR-AUX.NPST-S.3FS S.3MS-need.IPFV-O.3FS

'The woman needs to be reading.'

(66) *The strong modal predicate /hlw/ cannot embed tense auxiliaries*

*[ʔɨt-a səbajti tɨ-nəbib **(kɨ)-ʔall-a**] ʔall-o-wa
that-FS woman.F S.3FS-read.IPFV IRR-AUX.NPST-S.3FS have.IPFV-S.3MS-O.3FS

'The woman has to be reading.'

Importantly, this does not reflect a general ban on embedding complex tense-aspect constructions. For instance, there are other predicates that embed *kəmzɨ*-clauses, so called for the presence of the complementizer prefix *kəmzɨ* on the highest verbal element (see Spadine 2020). As shown in (67), these clausal complements can contain tense auxiliaries like the one found in the complex progressive construction:

(67) *Embedded /kəmzɨ/ clauses contain complex tense-aspect constructions*

pro [CP ʔɨt-a səbajti tɨ-xejjɨd **kəmzɨ-ʔall-a**] rasiʕɨ-na
1P that-F woman.F S.3FS-leave COMP-AUX.NPST-S.3FS forget.GER-S.1P

'We forgot that the woman is leaving.'

It is the assertion that the strong modal predicates */gbʔ/* or */hlw/* embed reduced clausal complements that accounts this contrast; the lack of a T^0 projection will preclude the presence of a tense auxiliary.

We turn now to the observed agreement patterns with the strong modal predicates. Section 4.1.3 showed that, unlike the modal auxiliary */kwn/*, the strong modal predicates */gbʔ/* and */hlw/* can be specified for subject marking that is distinct from what is found on the embedded verb. It is the bi-clausal structure presented in (59b) that makes this possible. Given the presence of two clauses with two predicates, the natural expectation is that each clause would be able to contain its own subject. Indeed, in that example the logical subject *ʔɨta səbajti* 'that woman' serves as the grammatical subject of the embedded clause; it is generated as the external argument of the embedded predicate and undergoes subject movement. We assume that in the absence of a TP, subject movement terminates in the highest agreeing position within that clause. The result here is 3FS agreement on the embedded verb. The default 3MS agreement on the matrix modal predicate reflects the presence of an expletive element serving as the grammatical subject of the matrix clause. As such, this element will differently control subject marking on the modal predicate.

Here, again, we find morphosyntactic overlap between the strong modal predicates */gbʔ/* and */hlw/* and the exemplar EOM predicate */tsʼbj/*. Looking again at the example in (63), one will observe that the matrix verb */tsʼbj/* carries a subject marker that cross-references *ʔɨta səbajti* 'that woman.' The embedded verb, however, is specified for a different subject, namely *ʔɨtom təmharo* 'those students.' Thus, despite initial appearances, there is good reason to believe on this measure that */gbʔ/* and */hlw/*, like other EOM predicates, appear in bi-clausal constructions that host multiple grammatical subjects.

Of course, this raises questions regarding the obligation that subject markers on the strong modals be specified for default 3MS agreement. Recall from section 4.1.4 that */gbʔ/* and */hlw/* cannot agree with the logical subject of the sentence, which has been analyzed here as a grammatical argument of the embedded predicate. This is a fact that follows from two particular claims. The first is that */gbʔ/* and */hlw/*, at least when used as modals (see section 6.2), are unaccusative predicates. The second is that these predicates do not permit Raising-to-Subject derivations, *pace* Tesfay 2016, Gebregziabher 2021.

That strong modals have an unaccusative argument structure finds initial support from the morphological form of

/*gbʔ*/.[20] It was noted in section 2.2 that the typical vocalic template for the imperfective form of a verb has the shape, ***C*ä*C(C)*ɨ*C***, which is provided again in (68). Observe, however, that the strong modal /*gbʔ*/ invariably appears in the imperfective form with the vocalic template ***C*ɨ*C(C)*a*C***, illustrated in (69). As (Tesfay 2016:206–207) discusses, this is the form that one would expect from an imperfective predicate in its detransitivized form, which, among other things, derives unaccusative predicates, including passives and inchoatives (see Nazareth 2011:ch.2.4).

(68) *Imperfective verb form*

jɨ-säbbɨr
S.3MS-break.IPFV
'He breaks.'

(69) *Detransitivized imperfective form of* /gbʔ/

jɨ-gɨbbaʔ
S.3MS-need.IPFV
"It is necessary."

Moreover, it is worth pointing out that the strong modal usage of /*gbʔ*/ that is the focus of investigation in this paper always surfaces in its detransitivized form. Thus, the obligatory default agreement that appears on /*gbʔ*/ and, by extrapolation, on /*hlw*/, can be seen as a reflex of a null expletive that inserted in the absence of an external argument.

Indeed, it can be demonstrated that the strong modals /*gbʔ*/ and /*hlw*/ necessarily fail to introduce an external argument. Consider the examples in (70) and (71) below, which have been adapted from examples in section 4.1.3. An attempt to interpret the obligatory 3MS subject marking on the strong modals as if it cross-references a contentful subject *nɨssu* 'he' only results in ungrammaticality.

(70) *The strong modal predicate* /gbʔ/ *cannot introduce an argument*

*(nɨssu) **ʔɨt-a** **səbəjti** kɨ-**tɨ**-xəjjɨd **jɨ**-gɨbaʔ-a
3MS that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS

(71) *The strong modal predicate* /hlw/ *cannot introduce an argument*

*(nɨssu) **səgən** ʔaʁ'ədim-a kɨ-**tɨ**-bɨts'ɨħ ʔall-**o**-wa
3MS Segen.F early-FS IRR-S.3FS-arrive.IPFV have.IPFV-S.3MS-O.3FS

The inability for these predicates to introduce thematic arguments into the matrix clause reflects their status as unaccusative predicates. It is for this reason that an expletive subject appears in the matrix clause, which accounts for the default 3MS subject agreement on the strong modals.

While the status of the strong modals as unaccusative predicates provides a means for understanding why they can appear with default agreement, this does not necessarily account for why they must do so. However, the obligation for default agreement would be expected if the expletive subject were itself obligatory. This would be the case in a scenario where a Raising-to-Subject derivation were not possible. This is a claim that Lumsden & Girma (2011) have made for the closely related language Amharic, and one that we endorse here. Given the inability to raise an embedded argument into the matrix clause, it would be possible to assert that an expletive subject is inserted in order to provide a value for the subject marker on the strong modal.

Beyond aligning Tigrinya with Amharic and providing an account for the obligatory default subject marking found on both /*gbʔ*/ and /*hlw*/, a lack of Raising-to-Subject derivations is corroborated by independent facts regarding word order. To see this, let us first consider the example provided below in (72).

(72) [$_{CP}$ *expl* [$_{MoodP}$ (b-bɨkeri) **sɛgɛn** (b-bɨkeri) maj kɨ-**tɨ**-sətti] jɨ-gɨbaʔ-**a**]
INS-cup Segen.F INS-cup water IRR-S.3FS-drink.IPFV S.3MS-need.IPFV-O.3FS
'Segen needs to drink water with a cup.'

[20] As an irregular verb, /*hlw*/ does not lend itself so straightforwardly to a similar morphological investigation in support of its status as an unaccusative predicate.

Observe that, as should be expected at this point, the subject marker on the strong modal predicate /*gbʔ*/ is specified with default 3MS agreement. We are proposing that this reflects the insertion of an expletive subject, which is necessitated by the lack of a Raising derivation that would promote the embedded argument *Segen* into the matrix clause. Of interest is that this agreement pattern correlates with a relatively variable word order between *Segen* and the adjunct modifier of the embedded predicate, *bɨ-bɨkeri* 'with a cup'. As can be seen in example (72), this constituent may either follow or precede *Segen*.

Knowing this, examples like the one in (73) below are informative. In this example, the subject marker on the matrix predicate /*tsʼbj*/ cross-references the thematic matrix subject *Tesfay*. As the subject of the embedded clause, *ʔanə* 'I' controls the shape of the subject marker on the embedded predicate. The relevant observation here is that these two subjects behave differently with respect to their ordering relative to an adjunct modifier of the embedded clause. While the embedded adjunct *ʔab dʒärdin* 'in the garden' can precede the embedded subject, there is a strong dispreference for placing this constituent in front of the matrix subject.

(73) [$_{CP}$ (*ʔab dʒärdin) tɛsfaj [(ʔab dʒärdin) **ʔane** kɨ-**Ø**-hɨgɨz-o] jɨ-tsʼbəje-**ni**
LOC garden Tesfay.M LOC garden I IRR-S.1S-help-O.3MS S.3MS-expect.IPFV-S.1S
'Tesfay expects me to help him in the garden.'

Examples of this type can be interpreted as showing that embedded constituents resist scrambling or topicalization out of embedded clauses (see also Spadine 2020). Moreover, they show that the relative ordering with an embedded modifier can be used to diagnose the structural position of some constituent. Given that only an embedded subject can follow an embedded adjunct, it stands to reason that the logical subject *Segen* in (72) above is a constituent of the embedded clause. This is consistent with the claim that the subject of clauses embedded under /*gbʔ*/ and, by extrapolation, /*hlw*/ do not undergo Raising-to-Subject, pace Tesfay (2016) and Gebregziabher (2021).

We finally turn to the namesake phenomenon of Exceptional Object Marking. Recall from section 4.1.5 that the strong modal predicates /*gbʔ*/ and /*hlw*/ are able to host object marking morphology. It was observed at the time that this behavior aligns the strong modals with elements of the predicate, as opposed to auxiliaries. Looking again to the structure presented in (59b), one will find that /*gbʔ*/ is, indeed, introduced as an element of the predicate. Assuming, as we did in section 2, that object marking is the realization of an AGREE relation between a v^0 and some argument, it should be expected that a strong modal predicate could in principle host an object marking morpheme.

This leaves open the question of precisely how a matrix pseudo-modal predicate comes to carry object marking morphology that cross-references an argument of an embedded predicate. Providing a full account of this phenomenon goes beyond what can be accomplished in this paper, but we would direct interested readers to Authors (in prep) for a more thorough discussion. For our purposes here, we would point out that there are several factors which suggest that we are observing a type of cross-clausal or "long-distance" agreement, whereby the matrix v^0 enters into a formal AGREE relationship with an embedded argument.[21] We make this proposal in opposition to alternatives that would postulate Raising-to-Object derivations, either forward (overtly) or backward (covertly; Potsdam & Polinsky 2012, Deal 2017).[22]

We have already seen evidence that an argument exceptionally cross-referenced by object marking on a matrix predicate does not undergo Raising into the matrix clause. As the examples in (72) and (73) showed, the arguments controlling object marking on the matrix predicate behave like constituents of the embedded clause with respect to their ordering with embedded modifiers. Thus, these same facts similarly speak against Raising-to-Object analyses.

[21] Both space and the intended goals of this paper preclude doing full justice to the literature on long-distance agreement. We would direct the reader to Bhatt & Keine 2017 for an overview of the various analyses that can be found in the literature. Moreover, we would note that, at the time of writing, we believe that an analysis in which clause-bounded scrambling feeds long-distance agreement, as in found in Polinsky & Potsdam 2001, will ultimately be best suited for Tigrinya (see Authors in prep.).

[22] While more discussion of the issue is warranted, we intend for this discussion to include analyses that would propose movement into the matrix clause driven by so-called "composite" A/$\overline{\text{A}}$-probes (van Urk 2015, et seq.). We would again refer the reader to Authors (in prep).

Embedded arguments that are exceptionally cross-referenced by matrix object marking also behave like downstairs constituents with respect to their case marking. It was observed in section 2.2 that grammatical objects that control object marking are marked with accusative case by default. In contrast, embedded arguments that exceptionally control matrix object marking on EOM predicates, including the strong modal predicates, show the case marking expected from their grammatical role in the embedded clause. Looking again at the examples in (72) and (73), as well as the numerous other examples that have been provided in the previous discussion, the reader can confirm that the arguments that control matrix object marking from the embedded clause are morphologically unmarked with nominative case. Moreover, as the examples below show, it is not possible for these arguments to be marked with accusative case. This is true for both the strong modal predicates of interest in (74), as well as the exemplar EOM predicate /*ts'bj*/ in (75):

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

{ *n-ət-a / ʔɨt-a } səbəjti kɨ-tɨ-xəjjɨd jɨ-gɨbaʔ-a
ACC-that-FS that-FS woman.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'The woman needs to leave.'

(75) *No accusative case marking on the embedded subjects of EOM predicates*

{ *n-ət-a / ʔɨt-a } səbəjti kɨ-tɨ-xəjjɨd nɨ-ts'əbɨj-a
ACC-that-FS that-FS woman.F IRR-S.3FS-leave.IPFV S.1P-need.IPFV-O.3FS
'We expect the woman to leave.'

The lack of evidence that an embedded argument behaves like a constituent of the matrix clause speaks against analyses that would propose a Raising-to-Object derivation for Exceptional Object Marking. Of course, this does not entirely rule out the possibility that Raising-to-Object proceeds covertly. This would ensure that the suspected Raising operation did not reorder constituents and could explain the absence of accusative marking. However, we would point once again to the conclusion reached above that there is also no evidence for Raising-to-Subject. To the extent that one would expect the same mechanisms to be exploited for both types of derivation, the absence of one implies the absence of the other.

To briefly summarize this section, our analyses of the epistemic modal auxiliary /*kwn*/ 'might' and the strong modal predicates /*hlw*/ 'must/have to' and /*gbʔ*/ 'should/need to' provide an account for their significantly differing morphosyntactic properties summarized in Table 5. These analyses also shed light on some several unrelated phenomena, such as the distribution of sentential negation, auxiliary stacking, and the co-occurrence of modals.

5 Strong v. weak modal predicates: An argument structure difference

We turn now to an investigation of the weak modal predicate /*kʔl*/ with the goal of presenting an explicit syntax for the constructions in which it appears. Our investigation, unlike previous literature, will reveal that this modal element has a distinct structural representation from its strong counterparts. This is a conclusion that finds some initial motivation on the basis of the mixed properties of /*kʔl*/ 'can/able' that are summarized in Table 6.

	Force	**Base**	**Category**	Mood Morphology	Complex Tense-Aspect	Subject Specification	Default Subject Marking	Object Marking
/kwn/	weak	epis	Aux	∅	*	same	*	*
/gbʔ/, /hlw/	strong	root/epis	verb	kɨ-	✓	different	✓	✓
/kʔl/	**weak**	**root/epis**	**verb**	**kɨ-**	**✓**	**same**	*****	*****

Table 6: Summary of the morphosyntactic properties of modal elements in Tigrinya; version 2/2)

In short, /*kʔl*/ 'can/able' shows evidence of generating bi-clausal configurations, but it does not show the agreement patters that would be expected from an unaccusative predicate with an expletive subject. We will argue in what follows that the mixed behavior of /*kʔl*/ summarized in Table 6 is best accounted for with the transitive Subject Control syntax shown in (76):

(76) *Bi-clausal Subject Control syntax for weak modal predicate* /kʔl/

[$_{CP}$ ʔɨt-a səbəjti$_1$ [$_{MoodP}$ PRO$_1$ kɨ-tɨ-xəjjɨd] **tɨ-xəʔɨl**]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV

'The woman is able to leave.'

Once we have established the differences between the modal predicates, we will turn to a more explicit exposition of the structural analysis of weak modal predicates that is sketched above. In addition to facts summarized above, our approach will again account for several other properties of these constructions that can also be observed in other candidates for treatment as Subject Control predicates.

As has been noted previously, these intended claims align with the unintended conclusion that the quantificational force of these modal predicates determines their argument structure and, consequently, their syntax. This is an issue to which we return in section 6, where we propose a further categorial distinction amongst the modal predicates.

5.1 The mixed behavior of /kʔl/

As summarized in Table 6 above, the weak modal element /*kʔl*/ 'can/be able to' displays a mixture of those properties that were investigated in the previous section. We briefly address each of these in turn immediately below.

5.1.1 Mood morphology

Despite their differences, the strong and weak modal predicates all share the property of having a strong preference for appearing with *kɨ*-marked lexical verbs. Thus, we typically observe /*kʔl*/ 'can/be able to' combining with a *kɨ*-marked complement, as in (77).[23]

(77) *The weak modal predicate appears with mood-marked verbs*

ʔɨt-a səbəjti$_1$ ***(kɨ)**-tɨ-xəjjɨd tɨ-xəʔɨl
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV

'The woman is able to leave.'

By parity of reasoning, we interpret the strong preference for *kɨ*-marking with finite verb forms to indicate a bi-clausal, as opposed to a mono-clausal, construction. In the same way as discussed in the previous section, the mood-encoding *kɨ*-prefix reflects the presence of a Mood projection within the embedded clause. In the example above, this comes in addition to the predicate and the usual aspectual heads responsible for the inflection of a verb. As with the strong

[23] As noted in footnote 12 there is some degree of dialectal variation regarding the necessity for *kɨ*-marking on the embedded predicate. We could make the same observation here. However, we would point out again that the generalization promoted in the text is consistent with the data on /*kʔl*/ that available in the literature (Tesfay 2016).

We would also note here, for the sake of completeness, that kʔl 'can/be able to' can also combine with infinitival verb forms that are marked with the prefix *mɨ-*, often considered a nominalizing affix, both in Tigrinya and across Semitic languages (e.g., Leslau 1941, Nazareth 2011, Frajzyngier 2018).

(i) (nissu) makkina **mɨ**-ziwwar yɨ-xəʔɨl
he car Mɨ-to.drive S.3FS-be_able.IPFV
'He knows how to drive a car.' (Tesfay 2016:194, (8b))

This is a construction that we must also leave to future research.

modals, this fact also points toward the treatment of /*kʔl*/ 'can/be able to' as a modal predicate, as opposed to an auxiliary.

As part of the analysis of the strong modal predicates in section 4.2.2, we also argued that the *kɨ*-marked complement clause is a structurally reduced clause. More specifically, we claimed that these clauses lack a tense projection on the basis of the fact that they cannot contain tense auxiliaries. We can observe the same fact for the clausal complements of the weak modal /*kʔl*/ as well; see (78):

(78) *The weak modal predicate* /kʔl/ *cannot embed tense auxiliaries*

*[ʔit-a səbajti$_1$ [PRO$_1$ tɨ-nəbib **(kɨ)-ʔall-a**] tɨ-xəʔɨl]
that-FS woman.F S.3FS-read.IPFV IRR-AUX.NPST-S.3FS S.3FS-be_able.IPFV

'The woman is able to be reading.'

As will be made more explicit in the following section, we understand this fact to reveal a similarly reduced status for the complement clause of the weak modal.[24]

5.1.2 Complex tense-aspect constructions

We can observe next that /*kʔl*/ 'can/be able to' appears in complex tense-aspect constructions. The examples in (79) and (80) demonstrate the use of /*kʔl*/ in conjunction with either a non-past or past tense auxiliary.

(79) ʔit-a sebejti kɨ-tɨ-xejɨd tɨ-xəʔɨl **ʔijj-a**
that-FS woman.F PROS-S.3FS-leave.IPFV S.3FS-be_able.IPFV AUX.NPST-S.3FS
'The woman is able to leave.'

(80) ʔit-om k'oleʕu kɨ-∅-nbɨb-u jɨ-xiʔil-u **nejjr-om**
that-MS children IRR-S.3MP-read.IPFV-S.3MP S.3MP-be_able.IMPFV-S.3MP AUX.PST-S.3MP
'The children were able to read.'

As discussed in section 4.2, this is a type of behavior that should be expected from an element of the predicate. As such, and in light of the restriction against multiple auxiliaries in a single clause, it would be predicted that /*kʔl*/ is not in complementary distribution with tense auxiliaries. Additionally, in light of the data and analysis of strong modals presented in section 4.2.2 we make additional predictions regarding the distribution of /*kʔl*/ with respect to both the modal auxiliary /*kwn*/ and sentential negation.

First, as two distinct syntactic categories, we correctly predict that it is also possible to generate "double-modal" constructions with a combination of /*kʔl*/ and /*kwn*/. An example is provided below in (81):

(81) *"Double-modal" construction with weak modal predicate + epistemic auxiliary modal*

[nɨssɨxa$_1$ [PRO$_1$ sɛb kɨ-tɨ-ħɨggɨz] **tɨ-xəʔɨl** **tɨ-xəwwɨn**]
you.NOM.FS person PROS-S2FS-help.IPFV S.3FS-able.IPFV S.3FS-might.IPFV

'You might be able to help people.' (Tesfay 2016:203, (16f))

Just as we saw is true for strong modals, /*kʔl*/ is able to co-occur with /*kwn*/. Furthermore, when they do co-occur, /*kwn*/ behaves as an auxiliary by necessarily following the weak modal /*kʔl*/. Once again, in light of the restriction against multiple auxilairies per clause, this observation suggests that (81) contains a bi-clausal construction in which /*kʔl*/ is an element of the matrix predicate.

[24] This conclusion may seem to be at odds with the forthcoming proposal for a Control syntax. One often encounters the claim that Control clauses contain more structure than those that allow Raising. A more fine-grained theory of the clausal spine than we can provide here may show that this is the case. Alternatively, one might take seriously the observation in the previous section that there is no independent motivation for Raising in Tigrinya, in which case there would be grounds for claiming that there is no true structural difference to be found amongst *kɨ*-marked complements clauses. This presents a clear avenue for further research.

With respect to sentential negation, we observed that the lowest verbal element of a clause is marked with the circumfix *ʔaj-(i)n*. Just as the strong modals are able to carry this circumfix, so too can the weak modal /*kʔl*/, as shown below:

(82) *The weak modal predicate* /kʔl/ *hosts sentential negation*

pro$_1$	[PRO$_1$	kɨ-tɨ-xəjjɨd	]	**ʔaj**-tɨ-xəʔɨl-**ɨn**
2FS		IRR-S.2FS-leave.IPFV		NEG-S.3FS-be_able.IPFV-NEG

'You are not able to leave.'

In the same way as it did in the previous section, this observation similarly leads us, yet again, to the conclusion that /*kʔl*/ appears in bi-clausal constructions as the lowest verbal element of the matrix clause.

5.1.3 Specification for same subject

Despite the similarities between /*kʔl*/ 'can/be able to' and the strong modal predicates that were discussed in the preceding section, these elements differ in numerous other ways. In particular, one finds in Table 6 that the agreement patterns in constructions with /*kʔl*/ do not align with those that were observed with the strong modal predicates.

The example in (83) below demonstrates the specification for subject marking found in constructions with /*kʔl*/.

(83) *Weak modal predicates must agree with the logical subject*

ʔɨt-a	**səbəjti**	kɨ-**tɨ**-xəjjɨd	**tɨ**-xəʔɨl	(***jɨ-xəʔɨl**)
that-FS	woman.F	IRR-S.3FS-leave.IPFV	S.3FS-be_able.IPFV	S.3MS-be_able.IPFV

'The woman is able to leave.'

Unlike the strong modal predicates, the weak modal predicate /*kʔl*/ must be specified with subject marking that cross-references the logical subject of the sentence. In the case of (83), both of the verbal elements carry the 3FS subject marking prefix, which cross-references the argument *ʔɨta səbəjti* 'the woman.'

This would be a puzzling observation under an analysis which asserts that the modal predicates all have a shared syntax. As we will argue, this is a fact about /*kʔl*/ that points toward the conclusion that the logical subject *ʔɨta səbəjti* 'the woman' is in fact the matrix subject, thereby controlling subject marking on the matrix predicate.

5.1.4 Default subject marking

The data point in (83) above is also informative with regard to default subject marking. Recall that we argued in the previous section that the obligatory default agreement found on strong modal predicates supports a view of these elements as unaccusative predicates. The modal /*kʔl*/ behaves different on this account by disallowing default agreement.

In light of the evidence just presented suggesting that /*kʔl*/ 'can/be able to' is an element of the matrix predicate, as opposed to an auxiliary, we interpret this fact as an indicator of a syntactic difference between the two sets of modals. In particular, the logical subject *ʔɨta səbəjti* 'the woman' of (83) must serve as an argument of the matrix clause.

5.1.5 Object marking

The weak modal predicate /*kʔl*/ differs from its strong counterparts also in its tolerance for object markers. It was observed in the previous section that the modal predicates /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' carry an object marker that cross-references an argument of the embedded predicate. This, we argued, suggests these modals

are best treated, not as auxiliaries, but as elements of the predicate. Here, again, the weak modal predicate patterns differently by not allowing object marking; see (84).

(84) *Weak modal predicates cannot appear with object markers*

ʔɨt-a səbəjti kɨ-ti-xəjjɨd tɨ-xəʔɨl-**(*a)**
that-FS woman.F IRR-S.3FS-leave.IPFV S.2FS-be_able.IPFV-O.3FS
'The woman can leave.'

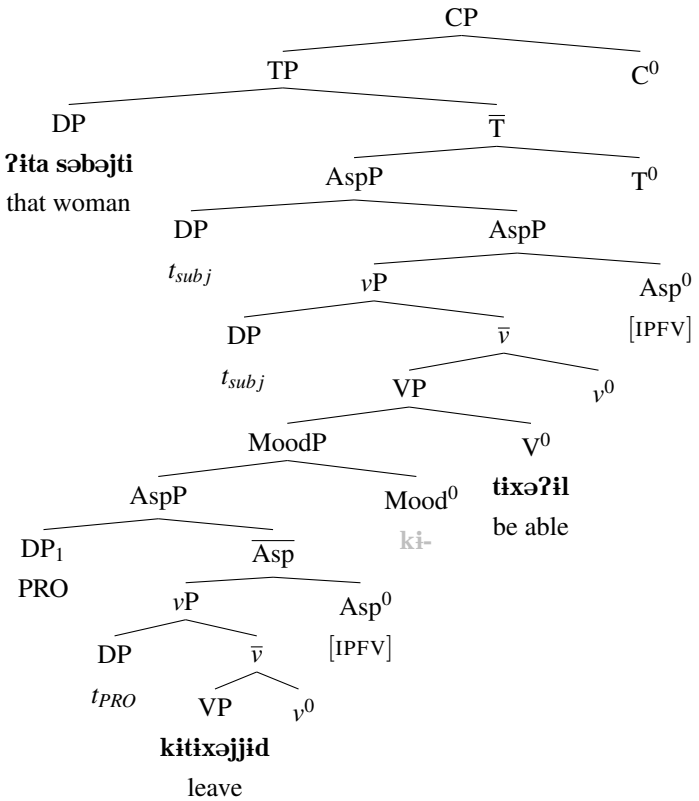
Still operating under the hypothesis that /*kʔl*/ 'can/be able to' is an element of the predicate, the difference observed here further motivates the proposed difference in the syntax of strong and weak modal predicates. There is no sense in which the logical subject behaves like an argument of the embedded predicate.

5.2 A Control syntax for weak modal predicates

The previous subsections presented evidence for two particular claims. The first is that /*kʔl*/ 'can/be able to' is a member of the class of modal predicates, along with /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to'. The second claim is that the differing properties of the weak and strong modal predicates is a function of their differing argument structures and, consequently, their differing syntaxes. We propose that the particular properties of weak modal predicates investigated above point to the Subject Control syntax presented in (85).

(85) a. [$_{CP}$ ʔɨt-a səbəjti$_1$ [$_{MoodP}$ PRO$_1$ kɨ-ti-xəjjɨd] tɨ-xəʔɨl]
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV
'The woman is able leave.'

b.



As the syntax above illustrates, the clausal complement to /*kʔl*/ contains a projection of Mood, which serves as the host for the irrealis denoting *k*ɨ-prefix. Like the embedded *k*ɨ-marked clauses of the strong modal counterparts, the

inability to contain tense auxiliaries, which was demonstrated in section 5.1.1, is consistent with the absence of the functional structure associated with tense. There is, however, still good reason to believe that we are looking at a bi-clausal configuration. As section 5.1.2 demonstrated, /*kʔl*/ is able to be marked with sentential negation and can itself be followed by tense auxiliaries, both of which are expected properties under an analysis of /*kʔl*/ as an element of the predicate that embeds a clausal complement.

Here, too, we can find support for the proposed syntax through a comparison with other, non-modal predicates that are independently suspected to have a similar Control syntax. Among these is the predicate /*ftn*/, which can be translated as 'try.' The morphosyntactic properties of these constructions show significant overlap with those containing the weak modal predicate /*kʔl*/. An illustrative example is provided below in (86):

(86) *Exemplar for Subject Control predicates in Tigrinya*

ʔit-a	səbəjti$_1$	[PRO$_1$ kɨ-tɨ-xəjjid]	**tɨ-fəttɨn**	ʔall-a
that-FS	woman.F	IRR-S.3FS-leave.IPFV	S.3FS-try.IPFV	AUX.NPST-S.3FS

'The woman is trying to leave.'

Unsurprisingly, /*ftn*/ embeds a kɨ-marked verb *tɨxəjjɨd* 'she leaves' and behaves like an element of the matrix predicate. As (86) shows, /*ftn*/ can appear in complex tense-aspect constructions. So, too, can it be marked with sentential negation, as shown in (87):

(87) *Subject Control predicate* /ftn/ *hosts sentential negation*

pro$_1$	[PRO$_1$ kɨ-∅-xəjjɨd]	**ʔaj**-fəttin-ku-**n**
1S	IRR-S.1S-leave.IPFV	NEG-try.PFV-1S-NEG

'I didn't try to leave.'

The two examples above also illustrate the overlap in the agreement properties of the weak modal predicate /*kʔl*/ and Subject Control predicates. In both examples the matrix verb necessarily shows substantive agreement with the logical subject, as opposed to the default agreement observed in the previous section for strong modal predicates. Moreover, in neither of these examples do we see object agreement morphology on the verbs in question, nor is it permitted.

As mentioned, it is with respect to the observed agreement patterns that /*kʔl*/ diverges from the strong modal predicates. The subject control syntax proposed above is able to provide us traction on these differences. Concerning the subject marking facts of sections 5.1.3 and 5.1.4, if the obligatory default agreement on the strong modal predicates indicates an unaccusative syntax, obligatory agreement with the logical subject is consistent with a transitive syntax illustrated by the structure in (85b). On this analysis, the logical subject *ʔɨta səbəjti* 'that woman' is generated in the matrix clause as an external argument of the modal predicate. As such, it should be expected to control subject agreement in line with the discussion of typical agreement patterns in section 2.2.

These claims collectively predict that the logical subject in these cases should behave, not as a constituent of the embedded clause, but as a constituent of the matrix clause. Thus, we should have specific expectations regarding the relative order of the logical subject with modifiers of the embedded predicate. Just as we found in section 4.2.2 that modifiers of the embedded predicate are unable to precede arguments of the matrix clause with predicates that have an EOM syntax, we should observe the same here.

This is precisely what we find in examples like (88). The modifier *bɨ-bɨkeri* of the predicate embedded under /*kʔl*/ cannot linearly precede the logical subject *Segen*.

(88) [$_{CP}$ (*bɨ-bɨkeri) sɛgɛn$_1$ [$_{MoodP}$ PRO$_1$ (bɨ-bɨkeri) maj kɨ-**tɨ**-setti] **tɨ**-xəʔɨl]

	INS-cup	Segen.F	INS-cup	water	IRR-S.3FS-drink.IPFV	S.3FS-be_able.IPFV

'Segen is able to drink water with a cup.'

The facts illustrated in (88) are consistent with a Control syntax for the modal predicate /*kʔl*/, wherein the logical subject is the external argument of the matrix clause and the controller for PRO in the embedded clause. Importantly, we find that our Subject Control exemplar /*ftn*/ shows the same behavior as the weak modal predicate /*kʔl*/ in this respect. The modifier of the embedded predicate in (89) is unable to precede the logical subject *Tesfay*.

(89) [$_{CP}$ (*bi-rsas) **tɛsfaj**$_1$ [PRO$_1$ (bi-rsas) dʒalba ki-**Ø**-siʔil] fəttin-**u**]
INS-pencil Tesfay.M INS-pencil boat IRR-S.3MS-draw.IPFV try.GER-S.3MS
'Tesfay tried to draw a boat with a pencil.'

The same reasoning as above leads us to conclude that the logical subject in (88), as well as in (89), is in fact an argument of the matrix clause, in contrast to the logical subject of the predicate embedded under the strong modals. This is consistent, not only with the claim that these constructions employ different syntaxes, but that they differ specifically on the type of argument structures that they project. Specifically, while the strong modal predicates project unaccusative Exceptional Object Marking structures, the weak modal predicate projects a transitive Subject Control structure.

We end, again, by considering object marking. We argued in section 4.2 that the agreement between the object marker on a strong modal predicate and the logical subject can be understood along the same lines as those presented for mono-clausal structures in section 2.2. As an unaccusative predicate, the logical subject of those constructions is in fact an argument of the embedded clause. This makes it a possible goal for an AGREE relationship with the v^0 of the matrix clause. In the context of a weak modal predicate in (85b), it is the status of the logical subject as an argument of the matrix clause that accounts for its inability to control an object marker on /*kʔl*/ in (89). Because *ʔɨta səbəjti* 'that woman' is generated as an external argument of the modal predicate, it sits outside the c-command domain of the matrix v^0. Thus, like all external arguments, it is not a possible goal for a formal agreement relationship with elements of its selecting predicate.[25]

In sum, the properties of the weak modal predicate /*kʔl*/ 'can/be able to' can be accounted for under a syntactic analysis in which this element embeds subject Control structures. Moreover, this accounts for several similarities that this element shares with other suspected candidates for treatment as a Control predicate.

5.3 Two remarks on the external Θ-role of /kʔl/

Before concluding this section, we feel that the proposed analysis warrants two additional comments. The first concerns the status of the logical subject as an argument of the predicate modal /*kʔl*/ 'can/be able to'. As noted in the introduction, there is little consensus around the position that modals of any flavor introduce arguments. It is worth reiterating, therefore, that our analysis proposes to treat the modal /*kʔl*/, not as a modal auxiliary, but as a modal predicate. The same is true for both /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to.' As our choice of gloss indicates, that makes these modal elements more similar to pseudo-modal predicates like *be able*, *have*, and *need* in English, which display a similar type of argument structure difference that we are proposing for Tigrinya. For example, we see in (90) that *have/need* is compatible with an expletive subject but *be able* is not.

(90) a. One window has/needs to be open.
b. There has/needs to be one window open.

(91) a. One window is able to be open.
b. *There is able to be one window open.

[25] This does leave open the question of why the embedded argument PRO is not a possible controller of object marking. While we do not currently have a fully satisfactory account of this, we would hope that it could be made to follow from a particular understanding of the syntax and semantics of Control.

According to familiar reasoning about such tests for thematicity, this contrast reveals a thematic difference between these predicates, whereby *be able* assigns an external Θ-role while *have* and *need* do not.

Hence, we arrive at the question regarding the nature of this Θ-role that is apparently being assigned by /*k?l*/ and *be able*. In both languages, there must be some amount of tolerance for variability in the animacy, agency, and volitionality of the argument to which this Θ-role is assigned. The English example in (92) attempts to illustrate precisely this point. The example in (93), when compared with the other examples in this section, similarly reveals that the external argument of /*k?l*/ can vary on the same dimensions.

(92) a. **The coin** is able to stand on its edge.
b. **Sally** is able to stand the coin on its edge.

(93) **ʔɨt-a** **məftəħ** ʔab borsa kɨ-tɨ-hilu tɨ-xəʔɨl ʔi-jja
that-FS key.F LOC bag IRR-S.3FS-COP.NPST S.3FS-be_able.IPFV AUX.NPST-S.3FS
'The key could be in her bag.'

Characterizing the nature of the Θ-role in question will likely be closely tied to the range of ordering sources that are available for interpreting these modal elements. Given the syntactic nature of the goals for this paper, we leave these semantic issues to future research.[26]

The example in (93) also brings to light the familiar question regarding how the base of /*k?l*/ is determined and whether this affects the syntax. Despite our best investigative efforts, there appear to be no syntactic differences correlated with differences in the modal base for this modal element. That is, all of the signatures of a Control syntax are observed in both root and epistemic interpretations of /*k?l*/. We would note that the same can be said for the strong modal predicates /*gb?*/ and /*hlw*/; we observe all of the indicators of an EOM sytnax regardless of the modal base.

This, then, is where the analogy between English pseudo-modal predicates and modal predicates in Tigrinya reaches its limit. While the weak modal predicate /*k?l*/ in Tigrinya permits what appears to be epistemic interpretations, the same is not true for the chosen English gloss *be able*. While this might raise questions regarding our choice of gloss and translation, we would like to head off any concerns that it calls the syntactic analysis into question. If there is indeed no correlation between modal force and argument structure, which is the consensus of the majority of the literature, then the state of affairs advocated for here should not be unexpected. That is, nothing should in principle preclude pseudo-modal predicates that project an external argument from receiving an epistemic interpretation. We should, in fact, expect to find such cases in natural languages. We are proposing that Tigrinya represents a language where such an element is found.

6 On the force-conditioned split: Another categorial difference

So far, we have demonstrated that Tigrinya expresses weak epistemic modality with the auxiliary /*kwn*/ 'might' and employs the modal predicates /*gb?*/ 'should/need to' and /*hlw*/ 'must/have to' to express strong modality along with /*k?l*/ 'can/be able to' to express weak modality. As part of this process, we have uncovered a correlation between the force of modal predicates in Tigrinya and their syntax: the strong modal predicates /*gb?*/ 'should/need to' and /*hlw*/ 'must/have to' project an unaccusative bi-clausal EOM syntax while the weak modal predicate */k?l/* 'can/be able to' projects a transitive bi-clausal Subject Control syntax.

A natural question that arises from this investigation—particularly in light of the historical literature on the relationship between modality and sytnax—is whether the observed correlation between modal force and argument

[26] We thank Irina Burukina (p.c.) for helpful discussion of this point.

structure could be the result of a causal relation. In other terms, one could ask if it is possible that the quantificational force of a modal element determines its argument structure, or vice versa. As noted in the introduction, it is difficult to identify a clear principled reason why this should be the case, at least as of yet.

Therefore, in this section, we explore an alternative, non-causal account of this correlation between modal force and argument structure. We suggest that the argument structures of the modal predicates investigated in this paper are more plausibly linked to a correlation with their grammatical category. Any correlation with modal force can then be seen simply as happenstance.

We claim, as summarized in Table 7 below, that the strong modal predicates /*gbʔ*/ and /*hlw*/ are light verbs, identified as having the category v^0 (Hale & Keyser 1993, Kratzer 1994, Chomsky 1995). On the other hand, we claim that the weak modal predicate */kʔl/* is a lexical verb with category V^0.

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

Table 7: Summary of verbal modal elements in Tigrinya

This analysis makes it possible to assert that these predicates necessarily appear as elements of distinct argument structures, which can be held accountable for their distinct syntactic architectures. The strong modals, as realizations of a v^0, can be understood as lexicaly encoding and projecting their own unaccusative argument structure. Because they subcategorize only for an internal argument, they appear in the Exceptional Object Marking construction investigated in section 4.2.2. The weak modals on the other hand are lexical verbs that subcategorize for clausal complements that have a Control syntax. As lexical verbs, they can and do combine with a transitivizing v^0 that introduces an external argument.

Thus, it is their syntactic category, and ultimately their lexical encoding, that can be held responsible for the syntax of weak and strong modal predicates. The correlation with modal force, again, can be seen purely as a coincidence. Towards this end, the following two sections present evidence in favor of the categorial difference noted above.

6.1 Hierarchical positions of modal elements

In previous literature, it has been claimed by several authors that modal elements are commonly found in predictable positions along the hierarchically ordered clausal spine (Picallo 1990, Brennan 1993, Cormack & Smith 1998, Cinque 1999, Nauze 2008, Hacquard 2010). Cinque (1999) offers a particularly fine-grained view of the modal hierarchy, which is illustrated in (94), where $>$ is to be read as "precedes" but can be understood as translating to hierarchical dominance.

(94) *The modal sequence (Cinque 1999:81, (12))*[27]
Epistemic ... > Alethic Necessity > Alethic Possibility > Volition > Obligation > Ability/Permission

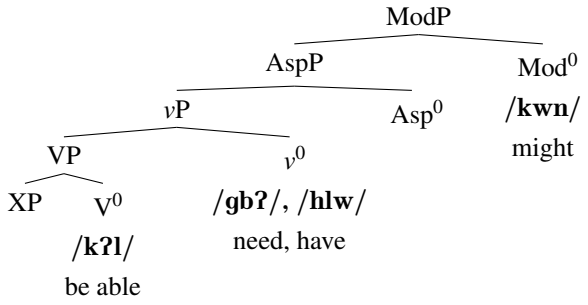
Setting aside the motivation for the division of modality into these precise categories, we would like to draw attention to two particular aspects of this hierarchy. The first is that epistemic modality is consistently found in positions that order it before all other modal elements and, therefore, relatively high on the clausal spine. This often results in locating epistemic modality above the positions for expressing Tense, Mood, and sentential negation. Second, observe

[27] Alethic modality expresses the necessity and possibility of truth. Cinque (1999) notes that, while logicians sometimes view this is a category of modality distinct from epistemic modality, there is little evidence suggesting that it is a grammatically distinct category. We include it here for the sake of completeness.

that strong/necessity modals appear in structurally higher positions than their weak/possibility counterparts. That is, we find both that Alethic Necessity dominates Alethic Possibility and that Obligation dominates Ability/Permission.

At a certain level of abstraction, and correcting for the head-finality of the language, the analysis of modal elements in Tigrinya that we are presenting can be seen as a reflection of this sequence. Let us compare the hierarchy above with the representation in (95), which illustrates the clausal spine of Tigrinya on the basis of our analysis.

(95) *An image of the verbal spine in Tigrinya*



This structure represents the conclusions from previous sections that /*kwn*/ 'might' is a weak epistemic modal auxiliary that appears in a projection outside the predicate and above the projection responsible for encoding aspectual information for the clause. This structure also represents the conclusions of the preceding sections that the other modals are elements of the predicate, locating them below the modal auxiliary and below the projections of Tense and Aspect. The claim that is currently under consideration is that the strong modal predicates can themselves be categorially distinguished; the strong modal predicates are v^0 heads that appear higher in the verbal sequence that the weak modal predicate, which is a V^0 head. Notably, this distinction corresponds to the hierarchy presented in (94), providing some initial motivation for the proposal.

6.2 Semantic bleaching

On one conception of the analysis under consideration, the proposed categorial difference amounts to the claim that the weak modal predicate /*kʔl*/ 'can/able to' is a lexical verb, while the strong modal predicates /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' are so-called light verbs (e.g., Hale & Keyser 1993). This is a term often used to refer to verbal predicates that are semantically bleached, meaning they 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).

It so happens that this is a property that characterizes the strong modal predicates in Tigrinya, but not the weak modal predicate. Beyond serving to encode strong modality, the roots /*gbʔ*/ and /*hlw*/ are employed as predicates that express possession relations and, in the case of /*hlw*/, also serves as a copula for instances of stage level predication (Nazareth 2011, Tesfay 2016, Gebregziabher 2021, Cacchioli 2023).

Again, the meaning contributed by either of these roots is a function of the type of complement it takes. Up to this point, the paper has focused on instances of clausal complementation, which predictably result in a modal interpretation. Familiar examples are repeated in (96).

(96) *Modal usage of the roots* /gbʔ/ *and* /hlw/

a. [salɛm ki-ti-xəjjɨd] **ji-gɨbaʔ-a**
Salem.F IRR-S.3FS-leave.IPFV S.3MS-need.IPFV-O.3FS
'Salem needs to leave.'

b. [salɛm ki-ti-xəjjɨd] **ʔall-o-wa**
Salem.F IRR-S.3FS-leave.IPFV have.IPFV-S.3MS-O.3FS

‘Salem has to leave.’

When /*gbʔ*/ and /*hlw*/ combine with phrasal nominal complements, as in (97), a possession interpretation arises in both cases.[28]

(97) *Possession usage of the roots* /gbʔ/ *and* /hlw/

a. nɨ-ʔaj ʔɨt-i gäza **jɨ-gɨbbaʔ(-anni)**
ACC-me that-MS house.M S.3MS-belong.IPFV-O1S
‘The house belongs to me.’ (Tesfay 2016:220, (26b))

b. ħanti ħabti **ʔall-a-ni**
one.FS sister.F have.IPFV-S.3FS-O1S
‘I have one sister.’ (Lit.: ‘One sister is to me.’)

Finally, it is possible for /*hlw*/ to take adjectival and prepositional complements. In such cases, shown in (98), /*hlw*/ serves as a copula for stage-level predication.

(98) *Stage-level copular usage of* /hlw/

a. jonas ts’ɨbbuq’ **ʔall-o**
Jonas.M good COP-NPST-S.3MS
‘Jonas is fine.’ (Nazareth 2011:50, (48a))

b. ʔɨt-i tämäharaj ʔab-t-i gäza **ʔall-o**
that-MS student.M LOC-that-MS house COP.PFV-S.3MS
‘The student is in the house.’

To the best of our knowledge, this kind of selectional and semantic indeterminacy is not found with the root /*kʔl*/. We have only elicited and observed data points in which /*kʔl*/ combines with clausal complements. We would note for the sake of accuracy, though, that /*kʔl*/ may also combine with what can be considered clausal complements that are nominalized with the addition of the prefix /*mɨ-*/ (see footnote 23). In all such cases, /*kʔl*/ reportedly receives an interpreation as a weak modal operator. Relevant examples are repeated in (99).

(99) *Modal usage of the root* /kʔl/

a. ʔɨt-a səbəjti [kɨ-tɨ-xəjjɨd] **tɨ-xəʔɨl**
that-FS woman.F IRR-S.3FS-leave.IPFV S.3FS-be_able.IPFV
‘The woman can leave.’

b. (nɨssu) [makkina mɨ-zɨwwar] **yɨ-xəʔɨl**
he car MɪT-to_drive S.3FS-be_able.IPFV
‘He knows how to drive a car.’ (Tesfay 2016:194, (8b))

This difference between the strong and weak modal predicates is suggestive of the type of categorial distinction that we are proposing. Specifically, it offers reason to treat /*gbʔ*/ and /*hlw*/ as light verbs with the category *v* and /*kʔl*/ as a lexical verb. This, we propose, is a significantly more likely culprit for the syntactic and structural differences we observe between the two classes of modal predicates. At minimum, it provides an alternative explanation that we consider to be more plausible than one that pivots on the modal force of these elements.

7 Conclusion

A summary of our investigation into verbal modality in Tigrinya is summarized by the information repeated in Table 8.

[28]The relationship between modality and clausal necessity is fairly robust cross-linguistically. It is noteworthy, therefore, to find the same relationship in Tigrinya and, moreover, to find it with two separate roots: /*gbʔ*/ and /*hlw*/.

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

Table 8: Summary of modals in Tigrinya

From this table, we see that Tigrinya has a tendency for lexically encoding the quantificational force of a modal element while leaving the modal base to accommodation based on contextual cues. The modal elements summarized in this table were also shown to differ along the dimension of syntactic category. Specifically, it was found that the weak epistemic modal /*kwn*/ 'might' is an auxiliary and that the other modals are elements of the predicate. We also also presented evidence for suspecting that the modal predicates themselves are offered in two different syntactic categories. The strong modal predicates /*gbʔ*/ 'should/need to' and /*hlw*/ 'must/have to' are plausibly light verbs of category *v*. The weak modal predicate /*kʔl*/ 'can/be able to', on the other hand, is likely a lexical verb, having category V.

This categorial difference, we suggested, provides a more principled way of understanding the observed difference in argument structure for the modal predicates. The strong modals appear in what we referred to as an Exceptional Object Marking syntax, wherein an object marker on the modal predicate exceptionally cross-references an embedded argument. This syntax ultimately arises from the claims that the strong modals are unaccusative predicates and that these constructions do not permit Raising derivations (*pace* Tesfay 2016, Gebregziabher 2021). The weak modal predicate, in contrast, appears in a Subject Control syntax, that arises from a familiar transitive argument structure. To the extent that the lexical properties of a predicate determine the syntax, a difference in the lexically encoded syntactic category is a significantly more likely culprit than the lexically encoded quantificational force for the observed variation.

Of course, this by itself is not entirely explanatory. Granted these conclusions, the question simply becomes why modal force should correspond to syntactic category. While we do not currently have any substantive conclusions to report on this question, we would point again to the hierarchy of modal elements presented in section 6.1. There appears to be some correlation, causal or otherwise, between modal force and structural positioning. Assuming that the conclusions drawn in the previous discussion are correct, verbal modality in Tigrinya is another reflection of this cross-linguistic tendency.

Looking beyond verbal modality in Tigrinya, the study presented in this paper has implications for the syntactic representation and derivation of other clause-embedding structures in the language. As was gestured at in sections 4 and 5, we anticipate our analyses for Exceptional Object Marking and Subject Control to be extendable to other, non-modal /kɨ/-clause embedding predicates. This includes the exemplar predicates for Exceptional Object Marking and Subject Control provided again in (100) and (101) below:

(100) *Non-modal Exceptional Object Marking predicate* /ts'bj/ *in Tigrinya*

Tɛsfay [ʔanɛ kɨ-ʔɨ-ħiggiz-o] **jɨ-ts'bəjə-ni**
Tesfay I PROS-S.1S-help.IPFV-O.3MS S.3MS-expect.IPFV-O1S
'Tesfay expects me to help him.'

(101) *Non-modal Subject Control predicate* /ftn/ *in Tigrinya*

Tɛsfay$_1$ [$_{MP}$ PRO$_1$ dʒalba k-ɨ-sɨʔɨl] **fəttin-u**
Tesfay boat PROS-S1MS-draw.IPFV try.PFV-S.3MS

'Tesfay tried to draw a boat.'

To conclude the paper we would like to gesture briefly toward the expression of verbal modality in the closely related Amharic. Representative examples, which have each been adapted from Tesfay 2016, are provided below:

(102) *Weak epistemic modal in Amharic*

anta säw t̶i-räda **j̶i-hon** **-al**
you.NOM.MS person S.2ms-help S.3ms-may AUX.NPST.S.3MS
'You might help people.' (Tesfay 2016:235, (41g))

(103) *Strong modal in Amharic*

anta l̶i-t-hed **j̶i-ggäb-(h)** **-al**
you.NOM.MS COMP-S.3FS-go S.3MS-must-O.2MS AUX.NPST.S.3MS
'You need to go.' (Tesfay 2016:245, (48a–b))

(104) *Weak modal in Amharic*

i-ssuwa l̶i-t̶i-mät'a **t̶i-ččil** **-all-äčč**
she COMP-S.3FS-go S.3FS-can AUX.NPST-S.3FS
'The woman is able to come.' (Tesfay 2016:235, (41h))

With the morphosyntactic properties of Table 6 in mind, it is possible to find a significant amount of similarity between the modal elements of the two languages. There are, however, appreciable differences (Baye 2011, Lumsden & Girma 2011, Tesfay 2016, Leung & Halefom 2017). We believe that a productive direction for future research will engage in a comparative study of the verbal modal elements found in these two languages.

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