

Intermediate steps of lowering in Tigrinya

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Received: 7 October 2025 / Revised: 25 September 2026 / Accepted: 27 September 2026
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Abstract

This paper presents a pattern of complementizer displacement in the Ethio-Semitic language Tigrinya (Ethiopia, Eritrea) that argues for the existence of a morphosyntactic operation of lowering that may involve successive steps (Embick and Noyer 2001; Arregi and Pietraszko 2021). In Tigrinya, underlyingly clause-final complementizers may displace leftward and downward throughout a head-final verb cluster. This displacement is associated with morphological consequences, in the form of stem allomorphy and the spreading of relative morphology. Importantly, these effects show up obligatorily in intermediate positions, on auxiliaries that are crossed by lowering. As a result, the morphosyntax of Tigrinya complementizers provides evidence for intermediate steps of lowering, and against proposals in which lowering effects do not involve the dislocation of a morpheme (e.g., Brody 2000; Adger et al. 2009; Platzack 2013; Svenonius 2016).

Keywords Tigrinya · Morphology · Syntax · Movement · Lowering · Complementizers · Semitic

1 Introduction

Much work on morphology and syntax recognizes the need for operations of word formation that take a morpheme associated with a specific syntactic position and combine it with a base in a lower position (Marantz 1984; Halpern 1995; Brody 2000;

I am indebted to Hiryom Habte, Zekaryas Solomon, and Yordanos Tekle for sharing their language with me. My thanks to David Adger, Athulya Aravind, Gioia Cacchioli, Imogen Davies, Tom Meadows, Danfeng Wu, and Michelle Yuan for discussion, as well as audiences at AfAf2, GLOW47, Queen Mary, and USC. I use the standard abbreviations in the Leipzig Glossing conventions, with the following additions: C = complementizer, GER = gerund, NACT = nonactive, O = object, PERSP = perspectival. I follow the referencing conventions for Eritrean and Ethiopian authors laid out in Meyer and Treis (2021).

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Embick and Noyer 2001; Adger et al. 2009; Harley 2013; Harizanov and Gribanova 2019; Arregi and Pietraszko 2021). But different conceptions of lowering exist in the literature, with disagreement about what and how many operations are needed, whether lowering effects can be phonological, morphological or syntactic in nature, and to what extent such mechanisms are similar to those that effect upward movement in syntax.

This paper presents a pattern of complementizer displacement in the Ethio-Semitic language Tigrinya (Ethiopia, Eritrea) that offers insight into the underlying mechanisms that achieve lowering effects. In Tigrinya, various complementizers, such as the declarative complementizer *kām* (in **bold**) move leftward and apparently downward, onto auxiliaries and verbs in a head-final cluster, as shown in (1a–b).

(1) *The complementizer kām undergoes leftward displacement*

- a. ካብ ገዛ ትወጽእ ከምዝነበረት ሓቢረ።
[_{CP} kab gāza ti-wäts’i? **kām**=zi-näbär-ät] ħabir-ä.
from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS report.GER-1S
‘I reported that she was leaving the house.’
- b. ካብ ገዛ ከምትወጽእ ዝነበረት ሓቢረ።
[_{CP} kab gāza **kām**=ti-wäts’i? zi-näbär-ät] ħabir-ä.
from house C=3FS-leave.IPFV REL-AUX.PFV.PST-3FS report.GER-1S
‘I reported that she was leaving the house.’

This paper proposes that complementizer placement in Tigrinya reflects a post-syntactic operation of Lowering (Embick and Noyer 2001; Harizanov and Gribanova 2019), which adjoins a head-final complementizer such as *kām* onto a lower functional head, like the past tense auxiliary *näbär-* (2), as in the example in (1a).

(2) *Lowering onto the auxiliary*

- [_V ti-wäts’i?]_V] [_T **kām**= [_T zi-näbär-ät_{Aux}]] **kām**=
- 

Key motivation for the idea of lowering comes from the observation that complementizer displacement can be *nonlocal*, skipping over an intervening auxiliary, as in (1b). I argue that such examples reflect successive applications of Lowering (3), involving a step of excorporation (e.g., Roberts 1991; Güneş 2021).

(3) *Successive Lowering onto the verb*

- [_V **kām**= [_V ti-wäts’i?]_V]] [_T **kām**= [_T zi-näbär-ät_{Aux}]] **kām**=
- 

I develop a conception of Lowering that allows such derivations. First, following Adamson (2022) and Weisser (2024, 2025), I posit that Lowering targets the closest head, and not necessarily the head of its complement (see also Embick and Noyer 2001: Sect. 7.2). Second, I suggest that excorporation is permitted in postsyntactic operations (Güneş 2021; cf. Roberts 1991), because Lowering, as a postsyntactic version of displacement, does not need to be accompanied by projection. As a result, a lowered head effectively ends up with the same c-command domain as the head it attaches to. Taken together, these assumptions allow for structures like (3) with

successive Lowering. Independent support for such derivations comes from nonlocal lowering in Tiwa (Dawson 2017) and varieties of German (Schallert 2020).

This account makes use of an operation of Lowering that takes place before Vocabulary Insertion and one in which nonlocal Lowering reflects *successive applications* of the same operation (Embick and Noyer 2001; Arregi and Pietraszko 2021). Tigrinya provides important evidence for both of these characteristics of lowering, because complementizer displacement is associated with two morphological effects: i) Lowering triggers the insertion of the relative prefix *zi-* (in *italics*) on any verb or auxiliary without a prefix, as in (4a–b) and (5a–b), and ii) this relative prefix triggers the perfective stem allomorph of verbs and auxiliaries and the associated agreement suffixes (underlined), as is evident in (5a–b).

(4) *Insertion of zi- prefix on auxiliary and verb*

- a. $\lambda\tau$ ህጻን ይድቅስ $\acute{\alpha}\Lambda$ ዘሎ $\lambda\tau$
 [_{CP} ?it-i häts'an ji-diqqis **silä** z-äll-o] ?it-i
 DEF-MS baby 3MS-sleep.IPFV because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säbʔaj hagus ?ijj-u.
 man happy COP-3MS
 ‘Because the baby is sleeping, the man is happy.’
- b. $\lambda\tau$ ህጻን $\acute{\alpha}\Lambda$ ዘድቅስ ዘሎ $\lambda\tau$
 [_{CP} ?it-i häts'an **silä** *zi*-diqqis z-äll-o] ?it-i
 DEF-MS baby because REL-sleep.IPFV REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säbʔaj hagus ?ijj-u.
 man happy COP-3MS
 ‘Because the baby is sleeping, the man is happy.’

(5) *The prefix zi- triggers stem and suffix allomorphy*

- a. ካብ ገዛ ትወጽእ ከምዝነበረት ሓቢረ።
 [_{CP} kab gäza ti-wäts'i? **käm=zi-näbär-ät**] ĥabir-ä.
 from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS report.GER-1S
 ‘I reported that she was leaving the house.’
- b. ካብ ገዛ ከምትወጽእ ዝነበረት ሓቢረ።
 [_{CP} kab gäza **käm=ti-wäts'i?** *zi-näbär-ät*] ĥabir-ä.
 from house C=3FS-leave.IPFV REL-AUX.PFV.PST-3FS report.GER-1S
 ‘I reported that she was leaving the house.’

Importantly, these morphological effects still obligatorily occur in *intermediate position*, so that the auxiliaries in (4b) and (5b) show the reflexes of Lowering, even though the complementizer undergoes a further step of Lowering onto the verb. As a result, Tigrinya complementizer placement offers novel evidence that successive lowering involves intermediate steps (Embick and Noyer 2001; Arregi and Pietraszko 2021). These facts argue against a conception of lowering in which it occurs in “one fell swoop”, as, for example, in Harizanov and Gribanova’s (2019) mechanism of amalgamation, or one in which lowering effects are not the result of a process of dislocation, such as Brody’s (2000) Mirror Theory and its descendents (Adger et al.

2009; Svenonius 2016), in which apparent lowering reflects the parametrization of realization within an extended projection (see also Platzack 2013).

The paper is structured as follows. Section 2 introduces the morphosyntax of auxiliaries and verbs, showing that Tigrinya is an SOV language with an opposition between perfective and imperfective stems. In Sect. 3, I show that several complementizers do not appear clause-finally, but instead displace leftward throughout the head-final verbal cluster. Section 4 argues for an analysis of complementizer placement in terms of Embick and Noyer's (2001) postsyntactic operation of Lowering. In Sect. 5, I show how such an approach can be extended to explain instances of successive Lowering, as evidenced by morphological reflexes of Lowering in intermediate position.

2 Verbs and auxiliaries in Tigrinya

This section introduces the morphology of syntax of verbs and auxiliaries in Tigrinya. Tigrinya is generally SOV, with an opposition between perfective and imperfective stems, distinguished by gemination, vocalic melody, and agreement affixes. These stems combine with a number of different head-final auxiliaries to express different tense/aspect combinations. Although the verb and auxiliary form a cluster, they behave as independent words, each with its own vocalic melody and set of affixes.

2.1 Imperfective and perfective verb stems in Tigrinya

I first provide an overview of the morphosyntax of verbal morphology in Tigrinya, which will be important to understand exactly how this system is affected by proclitic complementizers. Tigrinya is SOV, and the imperfective and gerund stem can be used in declaratives without any other TAM marking, expressing the present imperfective and past perfective, respectively. These stems are distinguished by gemination, vocalic melody and agreement affixes. In addition, Tigrinya displays an allomorphy pattern with perfective stems, in the form of an alternation between the gerund form and traditional perfective.

Tigrinya is an Ethio-Semitic language spoken in Eritrea and Northern Ethiopia, with an estimated 10 million speakers. The data presented here comes from three speakers originally from Asmara. It was collected in two field methods classes at Queen Mary as well as elicitation sessions in 2021, 2023, 2024, and 2025.

Tigrinya is a head-final SOV language with *pro*-drop. In a neutral declarative clause, the verb must appear clause-finally (6a–c) (though see Gebreghziaber and Duguine 2024 on word order in *wh*-questions).

(6) *Tigrinya is SOV*

- a. $\lambda\text{ṭ}$ $\text{h}\Delta\text{N}$ N γ $\text{ḫ}\Delta\text{ṭ}$::
 ?it-i kälbi bun **ji-säti**.
 DEF-MS dog coffee 3MS-drink.IPFV
 ‘The dog drinks coffee.’

- b. *እቲ ከልቢ ይሰቲ ቡን።
 *ʔit-i kälbi **ji-säti** bun.
 DEF-MS dog 3MS-drink.IPFV coffee
 ‘The dog drinks coffee.’
- c. *ይሰቲ እቲ ከልቢ ቡን።
 ***ji-säti** ʔit-i kälbi bun.
 3MS-drink.IPFV DEF-MS dog coffee
 ‘The dog drinks coffee.’

Finite verbs take at least three forms (Leslau 1941: ch. 5; Nazareth 2011). First, as in many Semitic languages, verbal morphology is built around an opposition between the perfective and imperfective verb stem, both of which are used in a range of TAM combinations (Meyer 2016).¹ The imperfective stem in isolation typically expresses present imperfective meanings (7a). Perfective stems without an auxiliary express past perfective meanings (7b–c).

(7) *Imperfective vs. gerund allomorph of perfective in plain declarative*

- a. እቲ ከልቢ ነቲ ሰጋ ይበልዖ።
 ʔit-i kälbi n-ät-i siga **ji-bäläṣ-o**.
 DEF-MS dog ACC-DEF-MS meat 3MS-eat.IPFV-3MS.O
 ‘The dog eats the meat.’
- b. እቲ ከልቢ ነቲ ሰጋ በሊዕዎ።
 ʔit-i kälbi n-ät-i siga **bäliṣ-iw-o**.
 DEF-MS dog ACC-DEF-MS meat eat.GER-3MS-3MS.O
 ‘The dog ate the meat.’
- c. ጸጋ ትግላ ደሪፋ።
 Ts’äga timali **däriṣ-a**.
 Ts’ega yesterday sing.GER-3FS
 ‘Ts’ega sang yesterday.’

Tigrinya has a third verbal form that is relevant because a distinctive innovation of the language is that the perfective verb has two allomorphs. In the examples in (7b–c), we see that the gerund stem has displaced the historical perfective stem in matrix clauses. But the historical perfective stem still appears in negated clauses, after the negative clitic *ʔaj=* (8a–b), as well as after relative morphology (8c) (Leslau 1941:83), presumably reflecting the origins of the gerund stem in reduced clauses. This allomorphy pattern interacts with complementizer lowering and will play an important role in diagnosing intermediate steps of lowering in Sect. 5.

(8) *Perfective allomorph after negative clitic ʔaj= and relative morphology*

- a. እቲ ከልቢ ወላሓንቲ ኣይበለሰን።
 ʔit-i kälbi walla-hanti ʔaj=**bäläṣ-ä-n**.
 DEF-MS dog even-one NEG=eat.PFV-3MS-NEG
 ‘The dog didn’t eat anything.’

¹I will use these labels throughout, but it is important to note that these stem types then are not necessarily always associated purely with perfective and imperfective meanings. The perfective is also used to express the perfect, for example, while only the imperfective appears in the future tense.

Table 1 Tigrinya verb stems (Nazareth 2011:41)

Root	Gerund	Perfective	Imperfective
(A) s-b-r ‘break’	säbir-u	säbär-ä	ji-säbbir
(B) f-f-m ‘finish’	fäffim-u	fäffäm-ä	ji-fiiffim
(C) b-r-q ‘bless’	bariq-u	baräq-ä	ji-bariq

Table 2 Agreement affixes for the verb *s-b-r* ‘break’ (Nazareth 2011:42)

	Gerund	Perfective	Imperfective
1S	säbir-ä	säbär-ku	ji-säbbir
1P	säbir-na	säbär-na	ni-säbbir
2FS	säbir-ki	säbär-ki	ti-säbir-i
2MS	säbir-ka	säbär-ka	ti-säbbir
2FP	säbir-kin	säbär-kin	ti-säbir-a
2MP	säbir-kum	säbär-kum	ti-säbir-u
3FS	säbir-a	säbär-ät	ti-säbbir
3MS	säbir-u	säbär-ä	ji-säbbir
3FP	säbir-än	säbär-a	ji-säbir-a
3MP	säbir-om	säbär-u	ji-säbir-u

Bulakh (2019:fn. 7) notes that some speakers may realize the 1SG prefix as *?i-*.

- b. ጸጋ ትማሊ ኣይደረፈትኝ።
 Ts’äga timali ?aj=**däräf**-ät-in.
 Ts’ega yesterday NEG=sing.PFV-3FS-NEG
 ‘Ts’ega didn’t sing yesterday.’
- c. ነሕና ዝስተናዮ ቡን መሪር ኣዩ።
 [_{CP} nāhina zi-**sätä**-na-jo] bun mārriṛ ?ijj-u.
 1PL REL-drink.PFV-1PL-3MS.O coffee bitter COP-3MS
 ‘The coffee that we drank tastes bitter.’

I will use the term *perfective stems* to refer to the underlying syntax that surfaces with this allomorphy pattern, and I refer to the allomorphs as the *gerund allomorph* and *perfective allomorph*, respectively.

Table 1 shows the morphophonological differences between these three different stems for different verb classes, using 3rd person masculine singular forms.² Roots are triconsonantal units, and different verb stems are formed by imposing different vocalic melodies and sometimes gemination of the medial consonant, with variation by verb class. As in other Semitic languages, the imperfective and perfective/gerund stems differ in how they are marked by agreement affixes (Leslau 1941; Nazareth 2011). The perfective stems combine with agreement suffixes, while the imperfective stem additionally makes use of prefixes. Table 2 provides an overview.

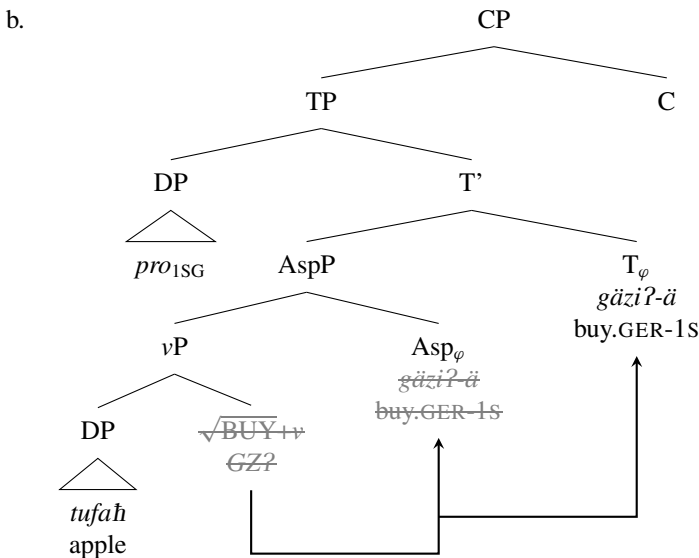
²I will set aside the jussive, which appears in main clauses only and so does not interact with the complementizer system that is the focus of this paper.

As is evident in Table 2, the perfective stems share many agreement suffixes, but combine with different suffixes across the 3rd person and in the 1st person singular. These differences are not obviously phonologically derivable from the different vocalic melodies, and so this allomorphy pattern persists in suffixes also.

I adopt a head-final syntax for Tigrinya, with the verb raising to Asp and then to T. An example like (9a) then has a structure like (9b).

(9) *A head-final syntax for Tigrinya*

- a. ተፋሕ ገሊኡ።
tufah gäzi?-ä.
apple buy.GER-1S
'I bought apples.'



I posit φ -probes on Asp and T, both of which target the subject. On the verb, subject agreement is realized only once, which I attribute to a constraint prohibiting multiple agreement morphemes expressing the same feature on one host (Kinyalolo 1991). As a result, when the verb moves through Asp and to T, only one agreement suffix appears. As we will see, both instances of subject agreement are expressed in verb+auxiliary combinations, when separate hosts are available.

To capture the stem alternations, I propose that the vocalic melodies indicating perfective and imperfective are realizations of Asp, reflecting Vocabulary Insertion rules like those in (10) for root class A.³ The imperfective melody spells out progressive and habitual flavors of Asp, while the perfective stems realize perfective

³These rules treat the first vowel *ä* as part of the aspectual melody, though it is constant across all three aspect allomorphs for Root Class A. The first vowel appears to be a marker of verb class, perhaps an exponent of *v*, since only this vowel varies across root classes. In addition, Root Class C appears to be distinguished from the other classes only by the use of *a* as first vowel. See Table 1.

or perfect aspect.⁴ I treat the gerund stem allomorph as the elsewhere form, while the perfective allomorph is conditioned by the presence of Neg or relative morphology.⁵

(10) *Insertion rules for aspectual melodies (Root class A)*

- | | | |
|-------------------------|---|--------------------|
| Asp _{PROG/HAB} | → | ä i |
| Asp _{PFV/PERF} | → | ä i |
| Asp _{PFV/PERF} | → | ä ä / Neg/Rel ____ |

We have seen then that Tigrinya verbs appear clause-finally and show a morphological opposition between imperfective and perfective aspect. In the next section, we will see that these verb stems combine with head-final auxiliaries to express different tense/aspect combinations.

2.2 The morphosyntax of Tigrinya auxiliaries

Tigrinya verb stems may be combined with a single auxiliary to express a range of different tense/aspect combinations (Leslau 1941; Meyer 2016). The present auxiliary *?all-* and past auxiliary *ner-* combine with the perfective stems to express the perfect and with the imperfective to form the progressive. In addition, the stative auxiliary *?i-* marks the future in combination with the imperfective. All of these auxiliaries appear head-finally. In addition, we will see that auxiliaries may display the same allomorphy pattern as perfective stems.

A number of TAM combinations involve a verb and a single auxiliary. These auxiliaries appear clause-finally also, in main and embedded clauses (11a–c).

(11) *Auxiliaries are head-final and appear after the verb*

- | | | | | |
|----|--|----------------|----------------|---------------------------------|
| a. | ኣቲ | ከልቢ ነቲ | ሰጋ ይበልፆ | ኣሎ። |
| | ?it-i | kälbi n-ät-i | siḡa ji-bälʕ-o | ?all-o. |
| | DEF-MS | dog | ACC-DEF-MS | meat 3MS-eat.IPFV-3MS.O AUX-3MS |
| | 'The dog is eating the meat.' | | | |
| b. | ጸጋ | ትደርፍ | ኔራ። | |
| | Ts'äga | ti-därrif | ner-a. | |
| | Ts'ega 3FS-sing.IPFV AUX.PST-3FS | | | |
| | 'Ts'ega was singing.' | | | |
| c. | ካብ ገዛ | ወጺኣ | ከፃዘላ | ኣቢረ። |
| | [_{CP} kab | gäza wäts'i?-a | käm=z-äll-a] | ħabir-ä. |
| | from house leave.GER-3FS C=REL-AUX-3FS report.GER-1S | | | |
| | 'I reported that she has left the house.' | | | |

Placing the auxiliary before the verb or an object is ungrammatical (12a–c).

⁴For ease of exposition, I adopt a clause structure with only one Asp head, but some of these aspects may well involve additional functional structure.

⁵There are a few options for how to ensure that the gerund/perfective allomorphy pattern extends into the agreement suffixes. One is to treat Neg and Rel as the trigger for this allomorphy pattern, and posit nonlocal allomorphy (Božič 2019). Another option would be to distinguish the gerund and perfective morphs by means of a feature. In that view, Neg and Rel could be associated with a rule of feature insertion in the sense of Noyer (1998).

(12) *Auxiliaries cannot appear preverbally*

- a. *ኣቲ ከልቢ ነቲ ሰጋ ኣሎ ይበልዖ።
 *ʔit-i kälbi n-ät-i siga ʔall-o ji-bälʕ-o.
 DEF-MS dog ACC-DEF-MS meat AUX-3MS 3MS-eat.IPFV-3MS.O
 ‘The dog is eating the meat.’
- b. *ኣቲ ከልቢ ኣሎ ነቲ ሰጋ ይበልዖ።
 *ʔit-i kälbi ʔall-o n-ät-i siga ji-bälʕ-o.
 DEF-MS dog AUX-3MS ACC-DEF-MS meat 3MS-eat.IPFV-3MS.O
 ‘The dog is eating the meat.’
- c. *ጸጋ ኔራ ትደርፍ።
 *Ts’äga ner-a ti-därrif.
 Ts’äga AUX.PST-3FS 3FS-sing.IPFV
 ‘Ts’äga was singing.’

The verb and auxiliary must generally be adjacent, a requirement that is reminiscent of head-final verb clusters in some Germanic languages. Adverbs, for example, cannot appear in between verb and auxiliary (13a–d).

(13) *Adverbs cannot intervene between verb and auxiliary*

- a. ጸጋ ነቲ መጽሓፍ ቀልጢፋ ኣንበባቶ
 Ts’äga n-ät-i mäts’haf qält’ifa ʔanbib-at-o
 Ts’äga ACC-DEF-3MS book quickly read.GER-3FS-3MS.O
 ኔራ።
 ner-a.
 AUX.PST-3FS
 ‘Ts’äga had read the book quickly.’
- b. *ጸጋ ነቲ መጽሓፍ ኣንበባቶ ቀልጢፋ
 *Ts’äga n-ät-i mäts’haf ʔanbib-at-o qält’ifa
 Ts’äga ACC-DEF-3MS book read.GER-3FS-3MS.O quickly
 ኔራ።
 ner-a.
 AUX.PST-3FS
 ‘Ts’äga had read the book quickly.’
- c. ዮሰፍ ነቲ መዝሙር ጸቡቕ ዘሚርዎ
 Josäf n-ät-i mäzmir ts’äbux’ zämür-uw-o
 Josef ACC-DEF-3MS song well sing.GER-3MS-3MS.O
 ኔራ።
 ner-u.
 AUX.PST-3MS
 ‘Josef had sang the song well.’
- d. *ዮሰፍ ነቲ መዝሙር ዘሚርዎ ጸቡቕ
 *Josäf n-ät-i mäzmir zämür-uw-o ts’äbux’
 Josef ACC-DEF-3MS song sing.GER-3MS-3MS.O well
 ኔራ።
 ner-u.
 AUX.PST-3MS

‘Josef had sang the song well.’

The primary function of auxiliaries is to mark tense in perfect and progressive constructions. The present auxiliary *?all-* appears alongside the perfective stems to indicate the present perfect (14a), and yields the present progressive when combined with the imperfective stem (14b).

(14) *Auxiliary ?all- forms present perfect and present progressive*

- a. ጸጋ ኢይደረፈትኝ ኣላ።
Ts’äga ?aj=däräf-ät-in ?all-a.
Ts’ega NEG=sing.PFV-3FS-NEG AUX-3FS
‘Ts’ega has not sung.’
- b. እቶም ቆልዑ ሞሰቲ ከልቢ ይጻውቱ ኣልዉ።
?it-om qol’u mis-ti kälbi ji-ts’awit-u ?all-iwu.
DEF-MP child.PL with-DEF.MS dog 3MP-play.IPFV-3MP AUX-3MP
‘The children are playing with the dog.’

The verb stems also combine with the past tense auxiliary *ner-* to form a past perfect or past progressive (15a–b):

(15) *Past auxiliary ner- forms past perfect or past progressive*

- a. ጸጋ ደረፈ ኔራ።
Ts’äga därif-a ner-a.
Ts’ega sing.GER-3FS AUX.PST-3FS
‘Ts’ega had sung.’
- b. ጸጋ ትደርፍ ኔራ።
Ts’äga ti-därrif ner-a.
Ts’ega 3FS-sing.IPFV AUX.PST-3FS
‘Ts’ega was singing.’

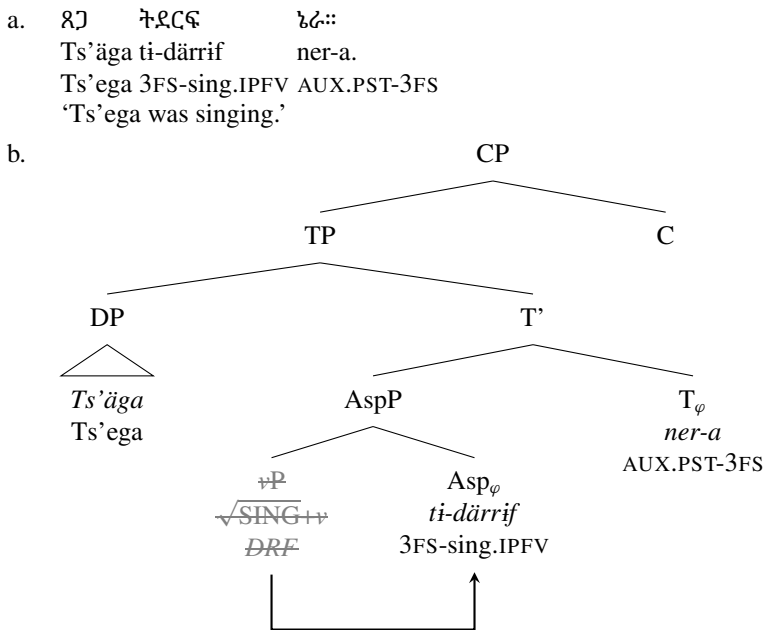
Finally, the imperfective stem with the stative copula *?i-* indicates a future meaning. In this context, the imperfective is prefixed with the subjunctive prefix *ki-* (Cacchioli 2025):

(16) *Future tense expressed by combining auxiliary with stative copula*

- ቡን ክሰትዩ እዮሞ።
bun ki-sätj-u ?ijj-om.
coffee SBJV-drink.IPFV-3MP COP-3MP
‘They will drink coffee.’

Notice that the agreement affixes on the imperfective/perfective stem do not change with the addition of an auxiliary. All auxiliaries carry an additional subject agreement suffix, yielding multiple agreement.

These observations fit with the head-final syntax I proposed in the previous section. I propose that, in the perfect and progressive, the verb remains in Asp and does not undergo further head movement to T. In these aspects then, an auxiliary provides the realization of Tense (see also Tesfay 2016). The structure in (17b) demonstrates for the example in (17a).

(17) *A head-final syntax for Tigrinya auxiliaries*

This structure accommodates the strict head-final order observed in verbs and auxiliaries. Recall that I proposed in Sect. 2.1 that both Asp and T carry subject agreement probes, but that multiple agreement cannot be spelled out on a single verb. In constructions with auxiliaries, the features on both probes are realized, so that both the verb and auxiliary surface with subject agreement.

Auxiliaries are independent morphological words, with a vocalic melody and separate prefixes and suffixes (see also Hewett and Kramer 2026: Sect. 7.5 for this conclusion). Morphologically, auxiliaries have the form of the perfective stems (Nazareth 2011: Sect. 2.4.3). Subject agreement is expressed using the same set of agreement suffixes that are utilized for the perfective stem allomorphs. In addition, auxiliaries may participate in the allomorphy pattern triggered by negation and relative morphology. The examples in (18a–b) demonstrate in the past progressive, where the choice of host for the proclitic negation *?aj=* (in *italics*) seems to be free.⁶ When the auxiliary hosts the negative clitic, the auxiliary must surface as its perfective allomorph with the associated agreement suffixes (18b).

(18) *Gerund/perfective on the past tense auxiliary*

- a. ጸጋ ንግሳ ቤን ኣይትሰትን ነሩ።
 ?it-a g^wal bun ?aj=ti-säti-n ner-a.
 DEF-FS girl coffee NEG=3FS-drink.IPFV-NEG AUX.PST-3FS
 'The girl was not drinking coffee.'

⁶Negation in Tigrinya is associated with two morphemes. In matrix clauses, the negative clitic is accompanied by the negative suffix *-in*, but this suffix is often absent in embedded clauses.

- b. እታ ጓል ቡን ትሰቲ ኣይነበረትን።
 ?it-a g^wal bun ti-säti ?aj=**näbär-ät**-in.
 DEF-FS girl coffee 3FS-drink.IPFV NEG=AUX.PFV.PST-3FS-NEG
 ‘The girl was not drinking coffee.’

A similar alternation occurs with the stative copula *?i-*, which has a suppletive perfective form *kon-* that appears before the perfective agreement suffixes.⁷ Auxiliaries may then show the same alternation between a gerund and perfective allomorph, with more irregularity in the verb form, but with the expected changes in the agreement suffixes. These facts will become important when we examine the morphological effects of complementizer displacement in Sects. 4 and 5.⁸

With this understanding of the morphosyntax of verbs and auxiliaries in place, we can turn to the key patterns in this paper, the placement of proclitic complementizers within a head-final cluster.

3 Complementizer placement as procliticization in Tigrinya

This section introduces complementizer placement in Tigrinya and shows that a number of Tigrinya complementizers do not appear in the expected head-final position, but instead appear as proclitics in the verb+auxiliary cluster (19a–b).

(19) *Tigrinya complementizers appear as proclitics*

- a. ዮሰፍ ጸጋ ትማሊ ከሞዘደራፈት ሓቢሩ።
 Josäf [_{CP} Ts’äga timali **käm**=zi-däraf-ät] habir-u.
 Josef Ts’ega yesterday C=REL-sing.PFV-3FS report.GER-3MS
 ‘Josef reported that Ts’ega sang yesterday.’
- b. እቲ ህጻን ደቂሱ ስለ ዘሎ እቲ
 [_{CP} ?it-i häts’an däqis-u **silä** z-äll-o] ?it-i
 DEF-MS baby sleep.GER-3MS because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj hagus ?ijj-u.
 man happy COP-3MS
 ‘Because the baby has slept, the man is happy.’

I argue that these Tigrinya complementizers are nonetheless underlyingly head-final, but undergo a process of leftward and downward displacement to cliticize onto a verb or auxiliary. Evidence for this conclusion comes from a number of observations. First, some complementizers do surface in the expected clause-final position. In addition, the placement of proclitic complementizers is oriented to the right edge of the clause, because they preferentially target the final verb/auxiliary. Finally, cases in which the complementizer undergoes nonlocal cliticization, to attach to a verb over an intervening auxiliary, demonstrate that it is the complementizer displacing leftward that gives rise to these alternations.

⁷ Interestingly, the present tense auxiliary *?all-* does not appear to display allomorphy.

⁸ The fact that auxiliaries carry a perfective or gerund melody suggests that this melody functions as a kind of default for verbal heads.

3.1 Proclitic complementizers in Tigrinya

A number of Tigrinya complementizers can appear as proclitics in the verb+auxiliary cluster, including the declarative complementizer *kām*, the adverbial complementizers *silä* ‘because’ and *mis* ‘when’, as well as the interrogative complementizer *?intä*,⁹ typically attaching before the final verb or auxiliary (20a–d).¹⁰

(20) *Complementizers appear before final verb or auxiliary*

- a. ሾሳፍ ጸጋ ትማሊ ከምዘደራፈት ሓቢሩ።
 Josäf [CP Ts’äga timali **kām**=zi-däraf-ät] habir-u.
 Josef Ts’ega yesterday C=REL-sing.PFV-3FS report.GER-3MS
 ‘Josef reported that Ts’ega sang yesterday.’
- b. እቲ ህጻን ደቂሱ ስለ ዘሎ እቲ
 [CP ?it-i häts’an däqis-u **silä** z-äll-o] ?it-i
 DEF-MS baby sleep.GER-3MS because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj hagus ?ijj-u.
 man happy COP-3MS
 ‘Because the baby has slept, the man is happy.’
- c. እቲ ህጻን ሞሰ ደቀሰ እቲ ሰብኣይ
 [CP ?it-i häts’an **mis** däqäs-ä] ?it-i säb?aj
 DEF-MS baby when sleep.PFV-3MS DEF-MS man
 ትሓጉሱ።
 ti-hagwis-u.
 NACT-happy.GER-3MS
 ‘When the baby slept, the man became happy.’
- d. እቲ ሰብኣይ ነታ ሰበይቲ እቲ ቆልዓ
 ?it-i säb?aj n-ät-a säbäjt [CP ?it-i qolfa
 DEF-MS man ACC-DEF-FS woman DEF-MS child
 ይድቅስ እንተ ኔሩ ሓቲቱዋ።
 ji-diqqis **?intä** ner-u] hatit-uw-a.
 3MS-sleep.IPFV whether AUX.PST-3MS ask.GER-3MS-3FS.O
 ‘The man asked the woman whether the child was sleeping.’

All the complementizers described above are ungrammatical in clause-final position, as (21a–d) demonstrate, and so must surface as proclitics.

(21) *Complementizers ungrammatical when clause-final*

- a. *ሾሳፍ ጸጋ ትማሊ ደሪፋ ከም ሓቢሩ።
 *Josäf [CP Ts’äga timali därif-a **kām**] habir-u.
 Josef Ts’ega yesterday sing.GER-3FS C report.GER-3MS
 ‘Josef reported that Ts’ega sang yesterday.’

⁹Cacchioli (2026: Sect. 3.2) also notes *kisab/kisa?* ‘until’ and *?ab kindi* ‘instead’.

¹⁰There seems to be some variation in whether complementizers are written as separate words. Following my consultants’ preferences, I write all complementizers as separate words, except *kām*.

- b. * እቲ ህጻን ደቂሱ ኣሎ ስለ እቲ
 *[CP ?it-i häts'an däqis-u ?all-o **silä**] ?it-i
 DEF-MS baby sleep.GER-3MS REL-AUX-3MS because DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj hagus ?ijj-u.
 man happy COP-3MS
 'Because the baby has slept, the man is happy.'
- c. * እቲ ህጻን ደቀሰ ሞስ እቲ ሰብኣይ
 *[CP ?it-i häts'an däqäs-ä **mis**] ?it-i säb?aj
 DEF-MS baby sleep.PFV-3MS when DEF-MS man
 ትሓጉሱ።
 ti-hagwis-u.
 NACT-happy.GER-3MS
 'When the baby slept, the man became happy.'
- d. *እቲ ሰብኣይ ነታ ሰበይቲ እቲ ቆልዓ
 *?it-i säb?aj n-ät-a säbäjtī [CP ?it-i qolʔa
 DEF-MS man ACC-DEF-FS woman DEF-MS child
 ይድቅስ ነሩ እንተ] ሓቲቱዋ።
 ji-diqqis ner-u ?intä] hatit-uw-a.
 3MS-sleep.IPFV AUX.PST-3MS whether ask.GER-3MS-3FS.O
 'The man asked the woman whether the child was sleeping.'

A number of these complementizers are prepositional in origin and are still used as prepositions also, such as *käm* 'like' and *mis* 'with' (22a–b).¹¹

(22) *Some Tigrinya complementizers are also used as prepositions*

- a. እቶም ቆልዑ ሞስቲ ከልቢ ይጻውቱ ኣልዉ።
 ?it-om qolʔu **mis**-ti kälbi ji-ts'awit-u ?all-iwu.
 DEF-MP child.PL with-DEF.MS dog 3MP-play.IPFV-3MP AUX-3MP
 'The children are playing with the dog.'
- b. ከም ገዛኺ ዝመስል ገዛ ርእየ።
käm gäza-xi zi-mässil gäza ri?j-ä.
 like house-2SG REL.3MS-look.like.IPFV house see.GER-1S
 'I saw a house that looks like your house.'

The prepositional nature of these complementizers provides insight into how the pattern of complementizer procliticization may have arisen. Tigrinya prepositions show behavior reminiscent of cliticization, as noted by Nazareth (2011:p. 164, fn. 3). A number of prepositions undergo contraction with a following definite determiner, and light CV prepositions attach to a following noun (23a–b).

(23) *Tigrinya prepositions undergo contraction and cliticization*

- a. እቶም ቆልዑ ሞስቲ ከልቢ ይጻውቱ ኣልዉ።
 ?it-om qolʔu **mis-ti** kälbi ji-ts'awit-u ?all-iwu.
 DEF-MP child.PL with-DEF.MS dog 3MP-play.IPFV-3MP AUX-3MP

¹¹Nazareth (2011) also cites examples with *silä* 'for' as a benefactive preposition.

‘The children are playing with the dog.’

- b. ንዮናስ ቡን ኣምጺኦሉ።
ni-Jonas bun ?a-mts’i?-ä-lu.
 DAT-Jonas coffee CAUS-bring.GER-1S-3MS.APPL
 ‘I brought coffee for Jonas.’

Prepositions then appear to be proclitics, although there is no evidence for displacement within prepositional phrases. But we can then understand the leftward displacement of Tigrinya complementizers as the result of reanalyzing a proclitic preposition that leans on its complement as a clause-final complementizer without an obvious following host. This pattern of complementizer placement has now been generalized to nonprepositional complementizers, such as the interrogative *?intä*.¹²

As suggested above, I propose that complementizers are underlyingly head-final, like verbs or auxiliaries. There are a few other pieces of evidence for the idea that complementizers are generated in a clause-peripheral position. First, the question particle *do* and the perspectival complementizer *?il-* surface in clause-final position (24a–b).¹³

(24) *Question particle do and perspectival ?il- in clause-final position*

- a. ዮስፍ ቡን ይስቲ ደ፤
 Josäf bun ji-säti **do?**
 Josef coffee 3MS-drink.IPFV Q
 ‘Does Josef drink coffee?’
- b. ዮስፍ ህጻን ደቂሱ ኣሎ ኣሉ።
 Josäf häts’an däqis-u ?all-o ?il-u
 Josef child sleep.GER-3MS AUX-3MS PERSP.C-3MS
 ‘Josef said that the baby is sleeping.’

Second, the preferred placement of complementizers shows that they are oriented to the clause-final position. Proclitic complementizers always appear before a clause-final verb in clauses without auxiliaries (25a). In addition, in all verb+auxiliary combinations, the complementizer can be placed before the final auxiliary (25b–c).

(25) *Complementizers on final verb or auxiliary*

- a. ዮስፍ ጸጋ ትማሊ ከምዘደራፈት ኣቢሩ።
 Josäf [CP Ts’äga timali **käm=zi-däraf-ät**] habir-u.
 Josef Ts’ega yesterday C=REL-sing.PFV-3FS report.GER-3MS
 ‘Josef reported that Ts’ega sang yesterday.’

¹²The absence of any kind of displacement with true prepositions provides an argument against the idea that any of these complementizers are still synchronically prepositions. As a result, I will treat all of these items as head-final C heads.

¹³See Spadine (2020) for a detailed discussion of *?il-*, which derives from the verb *say*. Although I take the head-final position of this complementizer to provide evidence for the head-finality of clause-peripheral elements, *?il-* clearly achieves a different kind of embedding than the declarative complementizers that are the focus of this paper. Embedded clauses after *?il-* behave syntactically like main clauses and allow indexical shift.

- b. ጎሳፍ ጸጋ ትደርፍ ከምዘየላ
 Josäf [_{CP} Ts'äga ti-därrif **käm**=z-äj=äll-a]
 Josef Ts'ega 3FS-sing.IPFV C=REL-NEG=AUX-3FS
 ሓቢሩ።
 habir-u.
 report.GER-3MS
 'Josef reported that Ts'ega is not singing.'
- c. እቲ ህጻን ደቂሱ ሰለ ዘሎ እቲ
 [_{CP} ?it-i häts'an dāqis-u **silä** z-äll-o] ?it-i
 DEF-MS baby sleep.GER-3MS because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj hagus ?ijj-u.
 man happy COP-3MS
 'Because the baby has slept, the man is happy.'

In fact, in some verb+auxiliary combinations, complementizers only surface before the auxiliary. In the future, only the auxiliary is an eligible host, and not the verb, as illustrated for the declarative complementizer *käm* in (26a–b).

(26) *In future, only auxiliary hosts a complementizer*

- a. ካብ ገዛ ክትወጽእ ከምዘኾነት
 [_{CP} kab gäza ki-t-wäts'i? **käm**=zi-xon-ät]
 from house SBJV-3FS-leave.IPFV C=REL-COP.PFV-3FS
 ሓቢሩ።
 habir-ä.
 report.GER-1S
 'I reported that she will leave the house.'
- b. * ካብ ገዛ ከምክትወጽእ ዝኾነት
 * [_{CP} kab gäza **käm**=ki-t-wäts'i? zi-xon-ät]
 from house C=SBJV-3FS-leave.IPFV REL-COP.PFV-3FS
 ሓቢሩ።
 habir-ä.
 report.GER-1S
 'I reported that she will leave the house.'

To capture these observations, I propose that complementizers in Tigrinya are generated in head-final position, but that movement operations occur that cause them to be realized before the final verb or auxiliary. The key question now is which element undergoes movement. The effect of leftward displacement can be achieved in a variety of ways, such as upward head movement of the highest verb/auxiliary to a head-final C or by dislocation of the complementizers. In the next section, I argue that complementizers undergo an operation of lowering, on the basis of the observation that complementizers can occur before a verb in a verb+auxiliary combination.

3.2 Leftward movement of complementizers across auxiliaries

Complementizer placement in verb+auxiliary combinations provides evidence that complementizers undergo lowering, because they can move farther leftward. In clauses containing a verb and auxiliary, complementizers may sometimes attach to the verb across an auxiliary.

All three speakers consulted readily accept cases in which complementizers attach to a verb across an auxiliary, though there is variation with respect to specific examples. In the present progressive, in which the present tense auxiliary *ʔall-* combines with the imperfective stem, complementizers can appear on the verb or auxiliary (27a–d).

(27) *Present progressive permits complementizer on verb or auxiliary*

- a. ጥሰፍ ጸጋ ትደርፍ ከግዛየላ
 Josäf [_{CP} Ts'äga ti-därrif **käm**=z-äj=äll-a]
 Josef Ts'ega 3FS-sing.IPFV C=REL-NEG=AUX-3FS
 ሓቢሩ።
 habir-u.
 report.GER-3MS
 'Josef reported that Ts'ega is not singing.'
- b. ጥሰፍ ጸጋ ከግዛይትደርፍ ዘላ
 Josäf [_{CP} Ts'äga **käm**=z-äj=ti-därrif z-äll-a]
 Josef Ts'ega C=REL-NEG=3FS-sing.IPFV REL-AUX-3FS
 ሓቢሩ።
 habir-u.
 report.GER-3MS
 'Josef reported that Ts'ega is not singing.'
- c. እቲ ህጻን ይድቅስ ሰለ ዘሎ እቲ
 [_{CP} ʔit-i häts'an ji-diqqis **silä** z-äll-o] ʔit-i
 DEF-MS baby 3MS-sleep.IPFV because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säbʔaj hagus ʔijj-u.
 man happy COP-3MS
 'Because the baby is sleeping, the man is happy.'
- d. እቲ ህጻን ሰለ ዝድቅስ ዘሎ እቲ
 [_{CP} ʔit-i häts'an **silä** zi-diqqis z-äll-o] ʔit-i
 DEF-MS baby because REL-sleep.IPFV REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säbʔaj hagus ʔijj-u.
 man happy COP-3MS
 'Because the baby is sleeping, the man is happy.'

Similarly, in the past progressive, in which the imperfective surfaces with the past tense auxiliary *ner-*, complementizers can appear on the final auxiliary or on the verb (28a–b).

(28) *Past progressive permits complementizers on verb or auxiliary*

- a. ካብ ገዛ ትወጽእ ከምዝነበረት
 [CP kab gäza ti-wäts'i? **käm**=zi-näbär-ät]
 from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 'I reported that she was leaving the house.'
- b. ካብ ገዛ ከምትወጽእ ዝነበረት
 [CP kab gäza **käm**=ti-wäts'i? zi-näbär-ät]
 from house C=3FS-leave.IPFV REL-AUX.PFV.PST-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 'I reported that she was leaving the house.'

In the present and past perfect, complementizers can also be placed before the auxiliary or before the perfective verb. The examples in (29a–b) and (30a–b) show examples of this optionality with the interrogative complementizer *?intä* 'if/whether'.

(29) *Present perfect permits complementizers on verb or auxiliary*

- a. እቲ ሰብኣይ ነጋ ሰበይቲ እቲ ቆልዓ
 ?it-i säb?aj n-ät-a säbäjti [CP ?it-i qolfa
 DEF-MS man ACC-DEF-FS woman DEF-MS child
 ደቂሱ እንተ ኣሎ ሓቲቱዋ።
 däqis-u **?intä** ?all-o] hatit-uw-a.
 sleep.GER-3MS whether AUX-3MS ask.GER-3MS-3FS.O
 'The man asked the woman whether the child has slept.'
- b. እቲ ሰብኣይ ነጋ ሰበይቲ እቲ ቆልዓ እንተ
 ?it-i säb?aj n-ät-a säbäjti [CP ?it-i qolfa **?intä**
 DEF-MS man ACC-DEF-FS woman DEF-MS child whether
 ደቂሱ ኣሎ ሓቲቱዋ።
 däqis-u ?all-o] hatit-uw-a.
 sleep.GER-3MS AUX-3MS ask.GER-3MS-3FS.O
 'The man asked the woman whether the child has slept.'

(30) *Past perfect permits complementizers on verb or auxiliary*

- a. እቲ ሰብኣይ ነጋ ሰበይቲ እቲ ቆልዓ
 ?it-i säb?aj n-ät-a säbäjti [CP ?it-i qolfa
 DEF-MS man ACC-DEF-FS woman DEF-MS child
 ደቂሱ እንተ ኔሩ ሓቲቱዋ።
 däqis-u **?intä** ner-u] hatit-uw-a.
 sleep.GER-3MS whether AUX.PST-3MS ask.GER-3MS-3FS.O
 'The man asked the woman whether the child had slept.'

- b. እቲ ሰብኣይ ነታ ሰበይቲ እቲ ቆልዓ እንተ
 ?it-i säbʔaj n-ät-a säbäjtɪ [CP ?it-i qolʃa ?intä
 DEF-MS man ACC-DEF-FS woman DEF-MS child whether
 ደቂሱ ኔሩ ሓቲቲዋ።
 däqis-u ner-u] hatit-uw-a.
 sleep.GER-3MS AUX.PST-3MS ask.GER-3MS-3FS.O
 ‘The man asked the woman whether the child had slept.’

Examples in which the complementizer appears before the clause-final auxiliary are always accepted. There is considerable variation between and within speakers as to whether attachment to the verb is possible in any given pair, and there seems to be an ameliorating effect in some examples if the negative clitic *?aj*= attaches to the verb also.¹⁴ But all speakers accept cliticization to the verb in a range of cases, with and without negation. Cacchioli (2026: Sect. 3.3.7) independently reports that her speakers also accept complementizers in both positions. I conclude that nonlocal cliticization to the verb across an auxiliary is in principle possible in all tense-aspect combinations described above.

One exception to this pattern, as noted in the previous section, may arise in the construction that expresses the future. The future is formed by means of the copula *?i*- and the imperfective stem prefixed with the subjunctive prefix *ki*-. Complementizers must be on the auxiliary (31a–b).

(31) *In future, only auxiliary hosts a complementizer*

- a. ካብ ገዛ ክትወጽእ ከምዘኾነት
 [CP kab gäza ki-t-wäts’i? kām=zi-xon-ät]
 to house SBJV-3FS-leave.IPFV C=REL-COP.PFV-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 ‘I reported that she will leave the house.’
- b. * ካብ ገዛ ከምክትወጽእ ዘኾነት
 *[CP kab gäza kām=ki-t-wäts’i? zi-xon-ät]
 from house C=SBJV-3FS-leave.IPFV REL-COP.PFV-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 ‘I reported that she will leave the house.’

I suggest that the future makes use of a biclausal structure, in which the copula embeds a subjunctive clause. This clause boundary prevents displacement of the complementizer onto the verb.

Nonlocal cliticization of complementizers provides an important argument that complementizer placement reflects an operation of lowering. I will develop an analysis in which lowering can occur successively, so that a head-final complementizer

¹⁴The negative clitic is typically hosted by the verb (though it can appear on the auxiliary in some verb+auxiliary combinations), and there may be a preference to form a ‘clitic cluster’.

can cliticize first onto the final auxiliary (32) and then optionally onto the lower verb (33).

(32) *Lowering onto the auxiliary*

[_V ti-wäts'íʔ_V] [_T **käm=** [_T zi-näbär-ät_{Aux}]] **käm=**

(33) *Successive lowering onto the verb*

[_V **käm=** [_V ti-wäts'íʔ_V]] [_T **käm=** [_T zi-näbär-ät_{Aux}]] **käm=**

Nonlocal cliticization is more difficult to handle in an analysis that makes use of upward head movement to C. The verb and auxiliary are independent words, each with their own prefixes, suffixes, and vocalic melody, and so only the highest verb/auxiliary should raise to C. In addition, we will see in Sect. 5 that Tigrinya provides evidence for the intermediate step of lowering in (33), since the auxiliary still shows the morphological effects associated with the complementizer.

An alternative to lowering may be to allow complementizers to be base-generated *inside* of the embedded clause (see Cacchioli 2026 for a syntax along these lines). Given the wide variety of semantically contentful complementizers that participate in lowering (e.g., interrogative *?intä*, *mis* ‘when’, *silä* ‘because’), such an analysis must ensure that these elements still take clause-level scope, perhaps via covert movement.¹⁵ This kind of approach seems to predict that it would generally be possible across languages for complementizers to surface in clause-medial positions, contravening well-established generalizations about the order of TAM morphemes (Julien 2002; Cinque 2014). I pursue a proposal here that links the surprising placement of Tigrinya’s complementizers to language-specific morphological requirements, and maintain a more conservative underlying syntactic hierarchy.

I conclude that Tigrinya complementizer placement reflects leftward displacement of the complementizers into the head-final cluster. In the next section, I develop an analysis of this pattern using Embick and Noyer’s (2001) postsyntactic operation of Lowering.

4 A lowering analysis of Tigrinya complementizers

In this section, I argue for an account of Tigrinya complementizer placement as the outcome of a postsyntactic operation of Lowering (Embick and Noyer 2001; Arregi and Pietraszko 2021; Georgieva et al. 2021). To support a morphosyntactic conception of lowering, I demonstrate that complementizer placement affects allomorphy and triggers a morphological rule of *zi*-insertion, which I argue reflects a rule of disassociated node insertion in the sense of Noyer (1998).

¹⁵It is also necessary to come up with a different explanation of the distribution of relative morphology. But see Cacchioli (2026) for a detailed proposal.

I adopt a model of grammar in which the output of syntax is interpreted by a postsyntactic morphological component, in which morphological rules and rules of exponence apply, prior to evaluation by a phonological grammar (Halle and Marantz 1993 et seq.). Within this morphological module, morphological rules like Impoverishment, Fission, or Lowering may apply, driven by language-specific morphological well-formedness requirements. I argue that complementizer placement in Tigrinya reflects the application of a rule of Lowering in the sense of Embick and Noyer (2001) (see also Harizanov and Gribanova 2019; Georgieva et al. 2021; Weisser 2024). Embick and Noyer conceive of Lowering as a morphological operation that takes two syntactic heads X and Y in the output generated by syntax and adjoins the higher head X to the lower head Y, as schematized in (34).

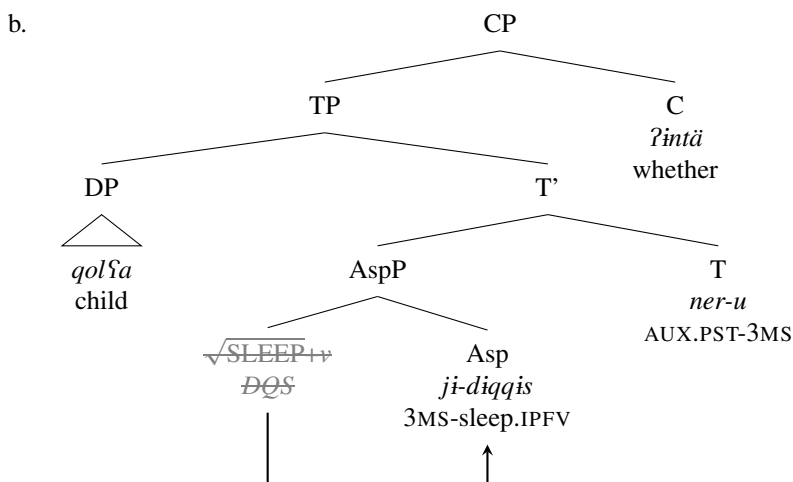
This rule converts a relation of hierarchical adjacency (the head–complement relationship) into one of linear adjacency. Importantly, this rule applies to a hierarchical representation, prior to the application of Vocabulary Insertion, which associates terminals with their phonological content.

Abstract syntax is blind to morphological filters of this type and generates a strictly head-final clause. Complementizer displacement is not driven by a syntactic feature that is visible to syntax and so no syntactic movement applies.¹⁷ But, in the postsyntactic component, the requirement in (35) will require resolution, and so trigger the application of Lowering.

¹⁷ Another possibility is that there are features that only generate displacement in the morphology, like the [+M] or [–M] features proposed by Harizanov and Gribanova (2019) or the integration features developed by Weisser (2024). I stick to an account here that avoids purely morphological features.

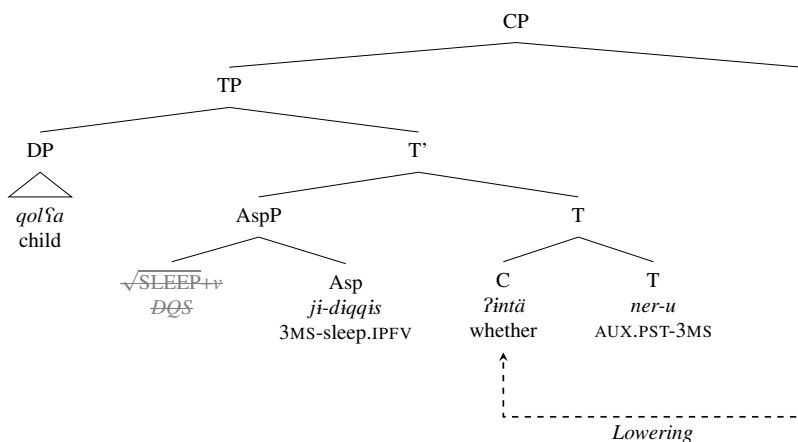
(36) *Abstract syntax for embedded CP in (36a)*

- a. አቲ ሰብኣይ ነታ ሰባይቲ ቆልዓ ይደቅስ
 ?it-i säbʔaj n-ät-a säbajti [_{CP} qolʕa ji-diqqis
 DEF-MS man ACC-DEF-FS woman child 3MS-sleep.IPFV
 እንተ ኔሩ ሓትቱዋ።
 ?intä ner-u] hatit-uw-a.
 whether AUX.PST-3MS ask.GER-3MS-3FS.O
 ‘The man asked the woman whether a child was sleeping.’



The verb undergoes head movement to Asp in the syntax, but the complementizer is not targeted by syntactic movement operations. When this syntax is interpreted in the morphological component, the well-formedness requirement on complementizers in (35) triggers a rule of Lowering. Lowering applies prior to Vocabulary Insertion and adjoins the feature bundle that instantiates the interrogative complementizer to T (37).

(37) *Postsyntactic Lowering in embedded CP in (36a)*



If the verb moves to T instead, in clauses without an auxiliary, the verb will host the lowered complementizer.

Embick and Noyer's (2001) operation of Lowering then captures the preferred pattern of complementizer placement in Tigrinya, which targets the last verb or auxiliary in the clause. Since the complementizer is displaced from a clause-final position, it is generally lowered onto the closest head-final verbal element.

4.2 Complementizer placement and relative clause morphology

A key question about lowering operations is whether these ought to be handled with morphosyntactic rules (Halle and Marantz 1993), or with phonological rules that invert adjacent words, similar to rules of infixation or metathesis, like Halpern's (1995) Prosodic Inversion or Embick and Noyer's (2001) Local Dislocation.

Complementizer placement in Tigrinya has two related morphological effects that demonstrate its morphosyntactic nature. First, embedded complementizers that are prepositional in origin trigger insertion of the relative prefix *zi-* (underlined) on eligible hosts. The examples in (38a–b) demonstrate for the declarative complementizer *kām* and the adverbial complementizer *silä*.

(38) *Complementizers trigger insertion of relative prefix zi- on finite verb*

- a. ጎሳፍ ጸጋ ትማሊ ከምዘደራፈት ሓቢሩ።
 Josäf [_{CP} Ts'äga timali **kām**=zi-däräf-ät] habir-u.
 Josef Ts'ega yesterday C=REL-sing.PFV-3FS report.GER-3MS
 'Josef reported that Ts'ega sang yesterday.'
- b. እቲ ህጻን ሰለ ዝደቀሰ እቲ ሰብኣይ
 [_{CP} ?it-i häts'an **silä** zi-däqäs-ä] ?it-i säb?aj
 DEF-MS baby because REL-sleep.PFV-3MS DEF-MS man
 ትሓጉሱ።
 ti-hagwis-u.
 NACT-happy.GER-3MS
 'Because the baby has slept, the man is happy.'

The same effect obtains when a clause-final auxiliary is the host (39a–b).

(39) *Complementizers trigger insertion of relative prefix zi- on finite auxiliary*

- a. ካብ ገዛ ወደኣ ከምዘላ ሓቢሩ።
 [_{CP} kab gäza wäts'i?-a **kām**=z-äll-a] habir-ä.
 from house leave.GER-3FS C=REL-AUX-3FS report.GER-1S
 'I reported that she has left the house.'
- b. እቲ ህጻን ደቂሱ ሰለ ዘሎ እቲ
 [_{CP} ?it-i häts'an däqis-u **silä** z-äll-o] ?it-i
 DEF-MS baby sleep.GER-3MS because REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj higus ?ijj-u.
 man happy COP-3MS
 'Because the baby has slept, the man is happy.'

The *zi-* prefix otherwise marks relative clauses (Leslau 1941:61–63; Palmer 1962).¹⁸ Its distribution is constrained by the prefixes carried by the verb it attaches to. Perfective verbs, which lack agreement prefixes, host relative morphology (40a). On imperfective verbs, the relative prefix seems to coalesce with the agreement prefix *ji-* (40b), but is absent before other agreement prefixes like *ti-* (40c).¹⁹

(40) *The zi- prefix marks relative clauses on verbs*

- a. ነሕና ዝሰተናየ ቡን መሪር እዩ።
 [CP nāhina **zi**-sätä-na-jo] bun mǝrrir ʔijj-u.
 1PL REL-drink.PFV-1PL-3MS.O coffee bitter COP-3MS
 ‘The coffee that we drank tastes bitter.’
- b. እቲ ቡን ዝሰተ ወዲ ሕጉስ እዩ።
 ʔit-i [CP bun **zi**-säti] wǎddi higus ʔijj-u.
 DEF-MS coffee REL.3MS-drink.IPFV boy happy COP-3MS
 ‘The boy that drinks coffee is happy.’
- c. እታ ቡን ትሰተ ኣል ሕጉስቲ እያ።
 ʔit-a [CP bun **ti**-säti] g^wal higus-ti ʔijj-a.
 DEF-FS coffee 3FS-drink.IPFV girl happy-FEM COP-3FS
 ‘The girl that drinks coffee is happy.’

In verb+auxiliary combinations, the auxiliary must be marked with the relative prefix. The verb optionally carries this marking (41a–b).²⁰

(41) *Relative prefix optional on verbs in verb+auxiliary combinations*

- a. እታ ትማሊ ቡን ዝሰተየት
 ʔit-a [CP timali bun **zi**-sätäj-ät
 DEF-FS yesterday coffee REL-drink.PFV-3FS
 ዝነበረት ኣል ሕጉስቲ ነራ።
zi-näbär-ät] g^wal higus-ti ner-a.
 REL-AUX.PFV.PST-3FS girl happy AUX.PST-3FS
 ‘The girl that had drunk coffee yesterday was happy.’
- b. እታ ትማሊ ቡን ሰቲያ ዝነበረት
 ʔit-a [CP timali bun sätij-a **zi**-näbär-ät]
 DEF-FS yesterday coffee drink.GER-3FS REL-AUX.PFV.PST-3FS
 ኣል ሕጉስቲ ነራ።
 g^wal higus-ti ner-a.
 girl happy AUX.PST-3FS

¹⁸Relative morphology occurs in other types of embedded clauses in Tigrinya as well, such as comparative clauses and complement clauses to nouns (see Cacchioli 2026: Sect. 2.3). This generalization seems consistent with the idea that this morphology can also serve to mark embedded clauses.

¹⁹Leslau (1941:61–63) reports relative morphology before imperfective agreement prefixes, but my consultants drop *zi-* before the agreement prefixes *ti-* and *ni-* and Cacchioli (2023) reports the same pattern for the speakers she works with.

²⁰The fact that verbs can lack relative morphology when accompanied by an auxiliary is first noted for perfective verbs by Palmer (1962) (see also Cacchioli 2023). In the imperfective, relative morphology is often suppressed on verbs, as in (40c), so it is difficult to tell. Imperfective verbs with 1SG/3MS subjects seem to show relative morphology obligatorily in relative clauses (Palmer 1962; see Cacchioli 2023).

I propose to treat the appearance of the relative prefix *zi-* after complementizers as an instance of “ornamental” morphology, triggered by a morphological rule associated with certain complementizers. The use of relative morphology is clearly linked to the prepositional origin of some of Tigrinya’s complementizers. As discussed in Sect. 3.1, prepositions often cliticize onto a determiner and noun, and relative *zi-* may have provided a piece of nominal morphology to take the place of this material.²¹ There are a couple of pieces of evidence, though, that relative morphology is not syntactically or semantically meaningful (contra Cacchioli 2026). First, not all complementizers are accompanied by relative clause morphology, and so there is no requirement for embedded clauses to be formed in this way. The interrogative complementizer *?intä* does not trigger insertion of a relative prefix (42).²²

*እጥ ሰብኣይ ነጋ ሰባይቲ ቆልዓ ደድቅሰ እንጥ
 *ʔit-i säbʔaj n-ät-a säbajti [CP qolʔa ji-diqqis ʔintä
 DEF-MS man ACC-DEF-FS woman child 3MS-sleep.IPFV whether
 ዝነበረ ሓትቲዋ።
zi-näbär-ä] hatit-uw-a.
 REL-AUX.PFV.PST-3MS ask.GER-3MS-3FS.O
 ‘The man asked the woman whether a child was sleeping.’

a. *ዮሴፍ ጸጋ ትማሊ ከምደሪፈ ሓቢሩ።
 *Josäf [_{CP} Ts'äga timali **käm**=däriḥ-a] ሐbir-u.
 Josef Ts'ega yesterday C=sing.GER-3FS report.GER-3MS
 'Josef reported that Ts'ega sang yesterday.'

b. *እቲ ህጻን ሰለ ደቂቡ እቲ ሰብኣይ
 * [_{CP} ?it-i häts'an **silä** däqis-u] ?it-i säb'ʔaj
 DEF-MS baby because sleep.GER-3MS DEF-MS man
 ትሓጉሱ።
 ti-hagwis-u.
 NACT-happy.GER-3MS
 'Because the baby has slept, the man became happy.'

²² An anonymous reviewer notes that their consultants do permit relative morphology after *?intä* in conditionals, but I did not find this effect. There seems to be some complex variation in this domain depending on verb type (see, for example, the discussion in Leslau 1941:144–145 and Mason 1996:118–119).

In addition, verbs not preceded by the complementizer cannot be marked by the prefix (44a–b).

(44) *Relative prefix impossible on verbs that do not host a complementizer*

- a. * ካብ ገዛ ዝወጸእ ከምዘሎ ሓቢሩ።
 *_{[CP} kab gäza zi-wäts'ä?-ä **käm**=z-äll-o] habir-ä.
 from house REL-leave.PFV-3MS C=REL-AUX-3MS report.GER-1S
 'I reported that he has left the house.'
- b. * እቲ ህጻን ዝደቀሰ ሰለ ዘሎ
 *_{[CP} ?it-i häts'an zi-däqäs-ä **silä** z-äll-o]
 DEF-MS baby REL-sleep.PFV-3MS because REL-AUX-3MS
 እቲ ሰብኣይ ሕጉስ እዩ።
 ?it-i säb?aj higus ?ijj-u.
 DEF-MS man happy COP-3MS
 'Because the baby has slept, the man is happy.'

But, in cases of nonlocal cliticization, when the complementizer precedes the verb, both verb and auxiliary are marked by the relative prefix (45a–b).

(45) *Relative prefix on verb and auxiliary in nonlocal cliticization*

- a. ዮስፍ ጸጋ ከምዘይትደርፍ ዘላ
 Josäf _{[CP} Ts'äga **käm**=z-äj=ti-därrif z-äll-a]
 Josef Ts'ega C=REL-NEG=3FS-sing.IPFV REL-AUX-3FS
 ሓቢሩ።
 habir-u.
 report.GER-3MS
 'Josef reported that Ts'ega is not singing.'
- b. እቲ ህጻን ሰለ ዝደቀሰ ዘሎ እቲ
_{[CP} ?it-i häts'an **silä** zi-diqqis z-äll-o] ?it-i
 DEF-MS baby because REL-sleep.IPFV REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj higus ?ijj-u.
 man happy COP-3MS
 'Because the baby is sleeping, the man is happy.'

In other words, the spreading of relative morphology follows the displacement of complementizers. It seems to be a requirement of the relevant complementizers then that they “mark” their host with vacuous relative morphology. To capture this observation, I propose that such complementizers trigger a rule of *disassociated node insertion*, in the sense of Noyer (1998). I call this rule Rel Insertion, and it inserts a relative node on any verbal head that is preceded by a declarative complementizer (46).²³

²³For my speakers, it is possible to describe the class of complementizers that trigger Rel Insertion as a natural class. Rel Insertion seems to be triggered by all embedded complementizers except interrogative ?intä ‘whether’, including in embedded *wh*-questions formed with *käm*-. An anonymous reviewer points out there is no relative morphology associated with the perspectival complementizer ?il- or the subjunctive prefix *ki*-, but these morphemes introduce different types of embedded clauses (see Spadine 2020 on ?il-

(46) *Rel Insertion*

Insert a node *Rel* in the context [_{CDECL} [____ X_[CAT:V]]]

A morphological rule of *Rel Insertion* explains why the relative prefix is associated with some complementizers, but does not seem to be necessary to construct an embedded clause. In addition, treating the distribution of *zi-* as a purely morphological fact explains why this prefix cannot appear on verbs that do not host a complementizer.

The rule of *Rel Insertion* must follow the application of *Lowering*, to ensure that the host of the complementizer is obligatorily marked by relative morphology. In fact, when we turn to examples with multiple steps of *Lowering*, we will see that the application of *Rel Insertion* is interleaved in between different applications of *Lowering*. This morphological effect can be understood if *Lowering* is morphosyntactic, and not purely phonological displacement.

4.3 Stem allomorphy and complementizers

The second morphological effect associated with complementizer displacement is the allomorphy pattern found in perfective stems, as described in Sect. 2.1. Displaced complementizers and the relative prefix associated with them trigger the perfective allomorph of their host, allowing us to demonstrate that the application of *Lowering* must feed exponent choice, as in a morphosyntactic conception of *Lowering*.

Recall from Sect. 2.1 that the perfective stem in Tigrinya is typically indicated by the gerund allomorph, which is associated with a unique vocalic melody and set of agreement suffixes. Negation and declarative complementizers trigger an allomorphy effect, so that the perfective allomorph appears instead. As a result, the complementizers *kām* and *silä* ‘because’ require the perfective allomorph when they are hosted by a perfective verb (47a–b).

(47) *Complementizers trigger perfective allomorph of verb*

- a. ጋሳፍ ጸጋ ትማሊ ከምዘደራፈት ሓቢሩ።
 Josäf [_{CP} Ts’äga timali **kām**=zi-däräf-ät] habir-u.
 Josef Ts’ega yesterday C=REL-sing.PFV-3FS report.GER-3MS
 ‘Josef reported that Ts’ega sang yesterday.’
- b. እቲ ህጻን ሰለ ዝደቀሰ እቲ ሰብኣይ
 [_{CP} ?it-i häts’an **silä** zi-däqäs-ä] ?it-i säb?aj
 DEF-MS baby because REL-sleep.PFV-3MS DEF-MS man
 ትሓጉሱ።
 ti-ḥagwis-u.
 NACT-happy.GER-3MS
 ‘Because the baby has slept, the man is happy.’

The same allomorphy effect is found with auxiliaries, with the past tense auxiliary *ner-* and the stative copula *?i-*. These auxiliaries surface with a perfective allomorph

and Cacchioli 2025 on *ki-*), and so likely do not realize the same head. It is also conceivable, though, that *Rel Insertion* is simply associated with an idiosyncratic set of morphs.

when they host an appropriate complementizer (48a–b). These allomorphs display some irregularity, but can be recognized as perfective, because they trigger the perfective agreement suffixes.

(48) *Complementizer triggers perfective allomorph of auxiliary*

- a. ካብ ገዛ ትወጽእ ከምዝነበረት
[_{CP} kab gäza ti-wäts’i? **käm=zi-näbär-ät**]
from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS
ሓቢረ።
habir-ä
report.GER-1S
‘I reported that she was leaving the house.’
- b. ካብ ገዛ ክትወጽእ ከምዝኾነት
[_{CP} kab gäza ki-t-wäts’i? **käm=zi-xon-ät**]
from house SBJV-3FS-leave.IPFV C=REL-COP.PFV-3FS
ሓቢረ።
habir-ä.
report.GER-1S
‘I reported that she will leave the house.’

This effect is an instance of allomorphy, because it requires the complementizer to linearly precede the verb. Perfective stems that do not host these complementizers are realized in the gerund form (49a–b).

(49) *Gerund allomorph appears when not hosting complementizer*

- a. ካብ ገዛ ወጺኦ ከምዘላ ሓቢረ።
[_{CP} kab gäza wäts’i?-a **käm=z-äll-a**] habir-ä.
from house leave.GER-3FS C=REL-AUX-3FS report.GER-1S
‘I reported that she has left the house.’
- b. እቲ ህጻን ደቂሱ ሰለ ዘሎ እቲ
[_{CP} ?it-i häts’an däqis-u **silä** z-äll-o] ?it-i
DEF-MS baby sleep.GER-3MS because REL-AUX-3MS DEF-MS
ሰብኣይ ሕጉስ እዩ።
säb?aj higus ?ijj-u.
man happy COP-3MS
‘Because the baby has slept, the man is happy.’

As evident in the forms above, perfective stem allomorphy cooccurs with insertion of the relative prefix. Indeed, perfective allomorphs appear in relative clauses as well. It is worth noting, though, that there are instances in which the relative prefix appears to be suppressed, but stem allomorphy still occurs. For example, the complementizer *mis* ‘when’ does not trigger insertion of relative clause morphology, but does condition the perfective allomorph (50a–b).

(50) *The complementizer mis triggers perfective allomorphy but not relative prefix*

- a. λt $\bar{u}q\bar{a}n$ $\varphi\bar{a}$ $\bar{d}q\bar{a}s$ λt $\bar{a}b\bar{a}j$
 [_{CP} $\bar{?}it-i$ $\bar{h}\bar{a}ts'an$ ***mis*** $\bar{d}\bar{a}q\bar{a}s-\bar{a}$] $\bar{?}it-i$ $\bar{s}\bar{a}b\bar{?}aj$
 DEF-MS baby when sleep.PFV-3MS DEF-MS man
 ትሓጉሱ።
 ti- $\bar{h}agwis-u$.
 NACT-happy.GER-3MS
 ‘When the baby slept, the man became happy.’
- b. * λt $\bar{u}q\bar{a}n$ $\varphi\bar{a}$ $\bar{h}d\bar{q}\bar{a}$ λt $\bar{a}b\bar{a}j$
 * [_{CP} $\bar{?}it-i$ $\bar{h}\bar{a}ts'an$ ***mis*** $\bar{z}i-\bar{d}\bar{a}q\bar{a}s-\bar{a}$] $\bar{?}it-i$ $\bar{s}\bar{a}b\bar{?}aj$
 DEF-MS baby when REL-sleep.PFV-3MS DEF-MS man
 ትሓጉሱ።
 ti- $\bar{h}agwis-u$.
 NACT-happy.GER-3MS
 ‘When the baby slept, the man became happy.’

I treat such cases as allomorphy of the Rel node, and will continue to take the relative prefix to be the relevant allomorphy trigger in this context.²⁴

Stem allomorphy provides a clear argument for the idea that Lowering in Tigrinya is morphosyntactic, and does not reflect phonological reordering. A Lowering analysis captures the feeding relationship between complementizer placement and allomorphy, on the assumption that rules of Lowering precede Vocabulary Insertion, as in the Distributed Morphology architecture proposed by Embick and Noyer (2001). Consider the derivation of an example with the complementizer *kām*, with associated *zi-* insertion and stem allomorphy (51a). In the postsyntax, a rule of Lowering applies to adjoin the complementizer to T (51b).

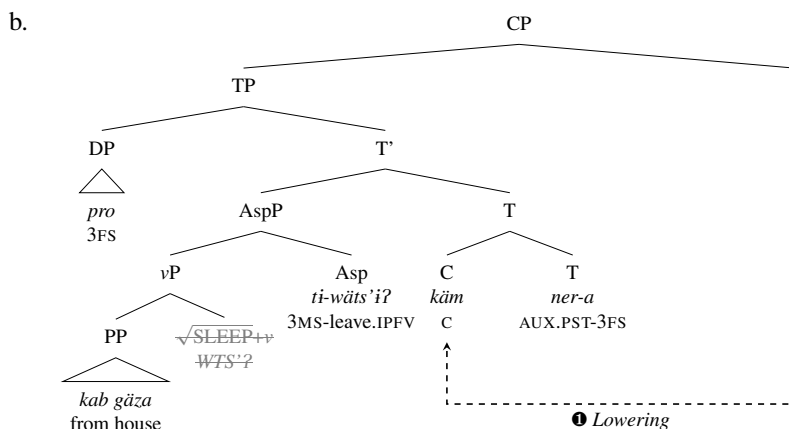
(51) *Lowering in the postsyntactic derivation of (51a)*

- a. $\bar{h}ab$ $\bar{g}\bar{a}za$ $\bar{t}i-w\bar{a}ts'i?$ $\bar{h}\varphi\bar{m}\bar{h}i\bar{n}\bar{a}t$
 [_{CP} $\bar{k}ab$ $\bar{g}\bar{a}za$ $\bar{t}i-w\bar{a}ts'i?$ ***kām=zi-nābār-āt***]
 from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS
 ሓቢረ።
 $\bar{h}abir-\bar{a}$.
 report.GER-1S
 ‘I reported that she was leaving the house.’

²⁴Evidence for this conclusion comes from the fact that *mis* ‘when’ does seem to tolerate relative morphology on an imperfective base that displays relative morphology, such as one with a 3MS agreement prefix (see 40a–c). The example in (i) demonstrates.

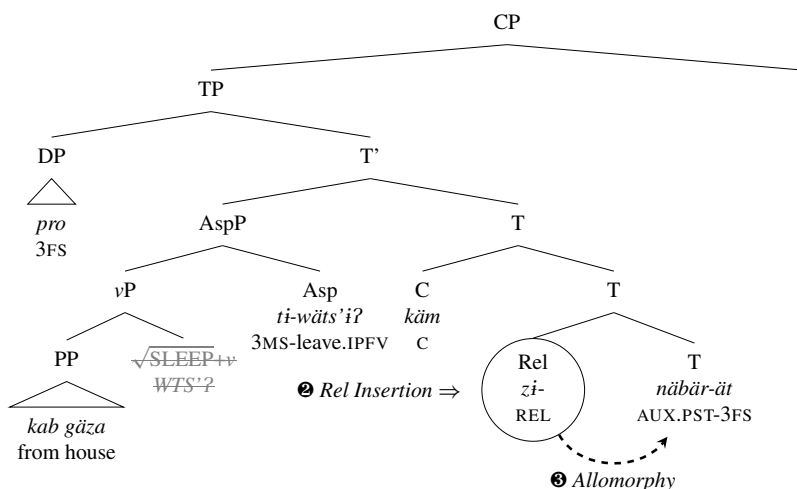
(i) *The complementizer mis allows relative morphology on imperfective*

- λt $\bar{q}ol'sa$ $\bar{m}is$ $\bar{z}i-\bar{d}iqqis$ $\bar{y}\bar{a}f$ $\bar{m}\bar{a}ts'$ $\bar{h}af$ $\bar{j}-\bar{a}nbib$.
 $\bar{?}it-i$ $\bar{q}ol'sa$ $\bar{m}is$ $\bar{z}i-\bar{d}iqqis$ $\bar{y}\bar{a}f$ $\bar{m}\bar{a}ts'$ $\bar{h}af$ $\bar{j}-\bar{a}nbib$.
 DET-3MS baby when REL.3MS-sleep.IPFV Josef book 3MS-read.IPFV
 ‘When the baby sleeps, Josef reads a book.’



The rule of Rel Insertion then applies, to adjoin a Rel node to T, as schematized in the tree in (52).

(52) *Rel Insertion in the postsyntactic derivation of (51a)*



Subsequent to Lowering and Rel Insertion, Vocabulary Insertion applies. The relative node prefixed to T now conditions the perfective stem allomorph of the complementizer host, in this case the *nābār-* stem of the past tense auxiliary and the associated agreement suffixes, as represented in the structure in (52).

An alternative to this proposal may be to adopt a version of Embick and Noyer's (2001) operation of Local Dislocation. In Embick and Noyer's model, Local Dislocation applies after hierarchical structure has undergone linearization and Vocabulary Insertion and achieves purely linear inversion of morphemes or morphological words. But Adger (2006) and Arregi and Nevins (2012: ch. 5) argue for a version of Local Dislocation that precedes the insertion of Vocabulary Items. Arregi and Nevins develop an architecture in which Local Dislocation operations

take place in the Linear Operations module, after the linearization of morphosyntactic structure but prior to the insertion of Vocabulary Items. This idea seems difficult to reconcile with Rel Insertion, however, since such operations of Morphological Concord precede linearization in Arregi and Nevins' model. For this reason, I continue to pursue a Lowering analysis in what follows, though an analysis along these lines is in principle consistent with the conclusions defended here.

In the next section, I extend a Lowering analysis to cases of nonlocal cliticization, which I argue arise by successive applications of the operation. Evidence for this conclusion comes from the fact that the morphological rules described above still apply in intermediate positions, on auxiliaries crossed by cliticization, reflecting a derivation in which rules of Lowering and node insertion are interleaved.

5 Successive lowering

This section develops an account of nonlocal cliticization in Tigrinya and argues that it arises by means of successive steps of Lowering. First, I present evidence that nonlocal cliticization involves two steps of Lowering, from the observation that Tigrinya displays reflexes of Lowering in intermediate position, in the form of stem allomorphy and the insertion of relative morphology. On this basis, I propose a conception of Embick and Noyer's (2001) Lowering in which it is not limited to heads in a head-complement relation, but simply targets the closest head (see also Adamson 2022; Weisser 2024). I argue that excorporation of clitics moved by postsyntactic rules is possible (cf. Güneş 2021), because Lowering does not need to result in projection, giving a lowered head the same c-command domain as the head to which it attaches. I then demonstrate how the interleaving of Lowering and Rel Insertion follow from a restriction on the ordering of postsyntactic operations, which orders obligatory operations before optional ones (Ringen 1972).

5.1 Intermediate reflexes of lowering

This section argues that nonlocal cliticization in Tigrinya reflects the application of multiple steps of Lowering. The primary source of evidence for this conclusion comes from the distribution of the morphological effects associated with complementizers, stem allomorphy, and insertion of relative morphology. As we will see, these morphological effects show up in intermediate position, offering evidence for intermediate steps of Lowering.

When a complementizer attaches to the verb across an auxiliary, the auxiliary shows evidence of an intermediate step of Lowering. In (53a–b), we see that both the verb and the auxiliary are marked with the relative prefix *zi-* when the verb hosts the complementizer.

(53) *Relative morphology on verb and auxiliary*

- a. ጾጋ ከምዘይትደርፍ ዘላ
 Josäf [_{CP} Ts'äga **käm**=z-äj=ti-därrif z-äll-a]
 Josef Ts'ega C=REL-NEG=3FS-sing.IPFV REL-AUX-3FS
 ሓቢሩ።
 habir-u.
 report.GER-3MS
 'Josef reported that Ts'ega is not singing.'
- b. እቲ ህጻን ስለ ዘድቅስ ዘሎ እቲ
 [_{CP} ?it-i häts'an **silä** zi-diqqis z-äll-o] ?it-i
 DEF-MS baby because REL-sleep.IPFV REL-AUX-3MS DEF-MS
 ሰብኣይ ሕጉስ እዩ።
 säb?aj hagus ?ijj-u.
 man happy COP-3MS
 'Because the baby is sleeping, the man is happy.'

Similarly, complementizers that trigger stem allomorphy require the perfective allomorph of auxiliaries, regardless of whether the verb or auxiliary is the host. The complementizer *käm*, for instance, triggers the perfective allomorph of the past tense auxiliary *ner-*. This allomorph must appear, even if the complementizer attaches to the verb (54a–b).²⁵

(54) *Stem allomorphy of auxiliary obligatory in nonlocal cliticization*

- a. ካብ ገዛ ከምዘይትወጽእ ነበረት
 [_{CP} kab gäza **käm**=z-äj=ti-wäts'i? zi-näbär-ät]
 from house C=REL-NEG=3FS-leave.IPFV REL-AUX.PFV.PST-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 'I reported that she was leaving the house.'
- b. * ካብ ገዛ ከምዘይትወጽእ ኔራ
 * [_{CP} kab gäza **käm**=z-äj=ti-wäts'i? ner-u]
 from house C=REL-NEG=3FS-leave.IPFV AUX.PST-3FS
 ሓቢረ።
 habir-ä.
 report.GER-1S
 'I reported that she was leaving the house.'

²⁵Interestingly, although stem allomorphy is obligatory, the spreading of relative morphology in intermediate position appears to be optional for the past tense auxiliary *ner-*, so that (i) is also possible.

(i) *Relative prefix optional on intermediate näbär-*

- ካብ ገዛ ከምዘይትወጽእ ነበረት ሓቢረ።
 [_{CP} kab gäza **käm**=z-äj=ti-wäts'i? näbär-ät] habir-ä.
 from house C=REL-NEG=3FS-leave.IPFV AUX.PFV.PST-3FS report.GER-1S
 'I reported that she was leaving the house.'

I take this optionality to reflect variation in the realization of the Rel node.

These facts also demonstrate that the verb and auxiliary behave like independent morphological words, which take prefixes independently and are associated with independent vocalic melodies. In fact, it is possible in Tigrinya for some auxiliaries to surface in a contracted form, as an enclitic onto the verb.²⁶ Both the present tense auxiliary *?all-* and copula *?i-* can appear as enclitics (55a–d), orthographically represented with an apostrophe.

(55) *Reduction and encliticization of ?all- and ?i-*

- a. ካብ ገዛ ወጸኡ ኣሎ።
 kab gäza wäts'i?-u **?all-o.**
 from house leave.GER-3MS AUX-3MS
 'He has left the house.'
- b. ካብ ገዛ ወጸኡ'ሎ።
 kab gäza wäts'i?-u=**ll-o.**
 from house leave.GER-3MS=AUX-3MS
 'He has left the house.'
- c. እቲ ቡን መሪር እዩ።
 ?it-i bun märrir **?ijj-u.**
 DEF-MS coffee bitter COP-3MS
 'The coffee is bitter.'
- d. እቲ ቡን መሪር'ዩ።
 ?it-i bun märrir=**jj-u.**
 DEF-MS coffee bitter=COP-3MS
 'The coffee is bitter.'

This kind of contraction may be an alternative way of satisfying the phonological requirement in Tigrinya that every word has an onset consonant. These auxiliaries are arguably onsetless and otherwise surface with an epenthesis glottal stop.

But contraction does not play a role in nonlocal cliticization. Contraction remains possible in embedded clauses with complementizers that do not trigger relative morphology (56a), but becomes ungrammatical with complementizers that do trigger spreading of relative morphology and so alter the form of the auxiliary (56b).

(56) *Contraction does not facilitate nonlocal cliticization*

- a. እቲ ሰብኣይ ነታ ሰበይቲ ካብ ገዛ ወጸኡ
 ?it-i säb?aj n-ät-a säbäjt [CP kab gäza wäts'i?-a
 DEF-MS man ACC-DEF-FS woman from house leave.GER-3FS
 እንተ'ኣ] ኣትቲዋ።
?intä=ll-a] hatit-uw-a.
 whether=AUX-3FS ask.GER-3MS-3FS.O
 'The man asked the woman whether she has left.'
- b. * ካብ ገዛ ከምዘወጸለ'ሎ ኣቢረ።
 * [CP kab gäza **käm=zi**-wäts'ä?-ä=ll-o] habir-ä.
 from house C=REL-leave.PFV-3MS=AUX-3MS report.GER-1S

²⁶ An anonymous reviewer notes that contraction of this type may be subject to regional variation, since the speakers they work with, from Debub and Gash-Barka, do not appear to accept it.

‘I reported that he has left the house.’

I conclude that cliticization is genuinely nonlocal and does not reflect a process of reanalysis by which the verb and auxiliary form a single prosodic word.

I propose that intermediate morphological effects arise because nonlocal cliticization involves an intermediate step of Lowering, in which the complementizer is hosted by the auxiliary (57).

- (57) *Successive lowering onto the verb*
 [_V **käm=** [_V ti-wäts’iʔ_V]] [_T **käm=** [_T zi-näbär-ät_{Aux}]] **käm=**
-

At this intermediate stage, the rule of Rel Insertion may apply and insert relative morphology. In addition, this intermediate step can explain the distribution of allomorphy, since it creates a configuration within which the complementizer is adjacent to the auxiliary. In the next section, I develop a conception of Lowering which derives the distribution of these effects.

5.2 Excorporation and successive lowering

The Tigrinya facts described in this paper provide evidence that lowering can be nonlocal by means of successive steps of Lowering. This view is at odds with Embick and Noyer’s (2001) initial formulation of Lowering, in which Lowering translates a head-complement relation into morphological adjacency. But, based on the Tigrinya pattern, it cannot be the case that Lowering can only target the head of the complement.

In fact, Embick and Noyer (2001:589) already challenge this idea based on a discussion of Lowering of English tense and how it interacts with constituent negation, suggesting that the locality conditions on Lowering ought to be stated in terms of the closest head rather than strictly the head of the complement. Adamson (2022) reaches the same conclusion based on patterns in lowering of the definite article in Bulgarian. The Bulgarian definite article typically appears on the first morphological word in the noun phrase, so that a prenominal adjective must function as host (58a–b). But with adjectives that cannot carry inflection, many speakers allow the definite article to exceptionally skip over a modifier and be hosted by the noun (58c).

- (58) *Bulgarian definite article can skip over inflectionless adjective*
- interesni-**jat** čovek
interesting.MS-DEF person
 - *interesen čovek-**at**
interesting.MS person-DEF
‘the interesting person’
 - %erbap žena-**ta**
skillful woman-DEF
‘the skillful woman’
(Adamson 2022:1)

Adamson argues that this pattern reflects an operation of Lowering of a D head that targets the closest possible host, rather than necessarily the head of its complement. Weisser (2024, 2025) also argues at length that postsyntactic lowering targets the closest eligible target rather than necessarily the head of the complement, based on patterns involving floating coordinators.

The idea that the locality conditions on lowering ought to be relaxed is supported also by other apparent cases of nonlocal cliticization that operate downward. In Tiwa, focus clitics with sentential scope attach either to the verb or auxiliary (59a–b), which Dawson (2017) argues is the result of lowering.

(59) *Nonlocal cliticization of focus clitic in Tiwa*

- a. Lí thái-do=sê.
go AUX-IPFV=FOC
'They are still going.'
- b. Lí=sê thái-do.
go=FOC AUX-IPFV
'They are still going.'
(Tiwa; Dawson 2017)

Another pattern of successive lowering seems to be found in varieties in German, when we examine the placement of the infinitival marker *zu*. Infinitival *zu* acts like a proclitic that typically attaches to the final auxiliary or verb in a verb cluster (Salzmann 2019; Schallert 2020), which Salzmann (2019) analyzes as a case of lowering from a clause-final position. As a result, the morphosyntax of *zu* is generally comparable to the default pattern found with Tigrinya complementizers. But Schallert (2020) points out that there are dialects in which *zu* seems to be able to lower farther leftward and downward, across the closest verb or auxiliary in a verb cluster (60a–b). Such cases may even give rise to *zu*-doubling (60c), implicating intermediate steps of lowering, as in the Tigrinya pattern.²⁷

(60) *Nonlocal cliticization of zu in German varieties*

- a. Er is lieber humplig ham glofa, als sich vo mir **z**=fahra lo.
he is rather limping home walked than REFL from me to=drive let
'He rather walked home limping than let himself be driven home by me.'
(Vorarlberg Alemmanic; Schallert 2020:52)
- b. Mei Vāta glap **z**=gwing kinn.
my father believes to=win can
'My father believes he is able to win.'
(Eastern Tyrol; Mayerthaler et al. 1995:55, cited in Schallert 2020:52)
- c. Ich brauch merr deß net **zu** gefalle **zu** gelasse.
I need me.DAT that not to please to let
'I don't need to put up with that.'
(Frankfurt; Brückner 1988:3651, cited in Schallert 2020:52)

²⁷See Arregi and Nevins (2012: ch. 5) on the relationship between postsyntactic displacement and doubling.

Pots (2017) describes a related set of facts in Dutch. In Dutch, many speakers permit infinitival *te*, a cognate of German *zu*, to displace leftward in a head-initial verb cluster. In (61), the base position of *te* is before the final verb *wachten* ‘wait’, since *zitten* ‘sit’ can select for a complement headed by *te*. Pots investigates variation across speakers and shows that *te* can move leftward and appear in front of any higher verb in the same cluster.

(61) *Leftward raising of te in Dutch verb clusters*

Peter zal vanwege de nieuwe dienstregeling binnenkort nog langer op
 Peter will because.of the new schedule soon even longer on
 de trein [**<te>** moeten **<te>** zitten **<te>** wachten].

the train to must.INF to sit.INF to wait.INF

‘Because of the new schedule, Peter will soon have to wait even longer for the train.’

A similar pattern of variation is found with particles of particle verbs (e.g., Bennis 1992), as in (62a–c).

(62) *Leftward raising of particles in Dutch verb clusters*

- a. ...dat Fenna de tekening heeft willen **af**-maken.
 that Fenna the drawing have.3S want.INF off-make.INF
- b. ...dat Fenna de tekening heeft **af** willen maken.
 that Fenna the drawing have.3S off want.INF make.INF
- c. ...dat Fenna de tekening **af** heeft willen maken.
 that Fenna the drawing off have.3S want.INF make.INF
 ‘...that Fenna wanted to finish the drawing.’

Such cases can similarly be thought of as nonlocal cliticization, but with a post-syntactic operation of Raising (Harizanov and Gribanova 2019). Finally, Bruening (2019) discusses patterns of inflection in Maliseet-Passamaquoddy, in which high functional morphemes must attach to the verb despite the presence of an intervening auxiliary. Such cases may involve nonlocal Lowering rightward.

I conclude that Lowering of a head does not necessarily target the head of its complement (Harizanov and Gribanova 2019; Adamson 2022; Weisser 2024, 2025). Instead, I follow Embick and Noyer (2001:589) and adopt the idea that Lowering targets the *closest* head. I provide a definition of Lowering in (63).

(63) *Lowering*

If X and Y are syntactic heads, X c-commands Y, and Y is the closest head to X, replace $[Y^0]$ with $[Y^0+X^0]$.

I define closeness in (64).

(64) *Closeness*

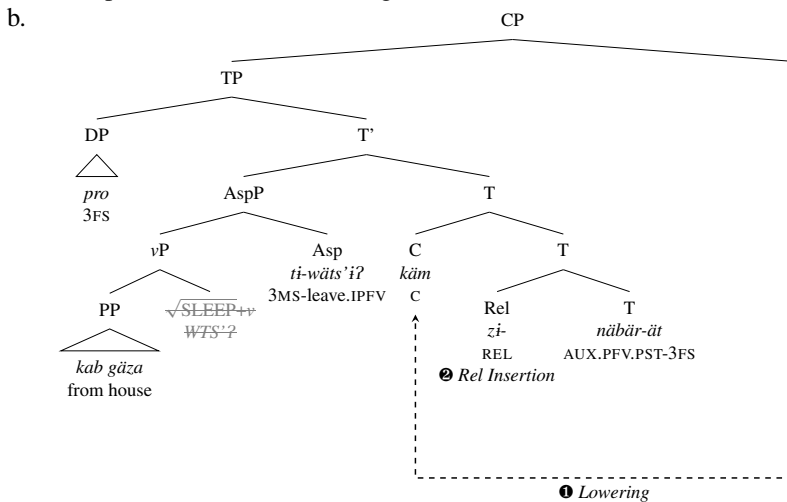
Y is the closest head to X if there is no head Z such that X asymmetrically c-commands Z and Z asymmetrically c-commands Y.

In the usual case, this view of Lowering will still pick out the head of the complement. In Tigrinya complementizer placement, we saw that the highest verb/auxiliary is

the preferred target. Consider again the derivation of such an example (65a), with Lowering and concomitant Rel Insertion (65b).

(65) *Lowering in the postsyntactic derivation of (65a)*

- a. ካብ ገዛ ትወጽእ ከግዞከነረት
 [CP kab gäza ti-wäts'i? kām=zi-näbär-ät]
 from house 3FS-leave.IPFV C=REL-AUX.PFV.PST-3FS
 ኣቢረ።
 habir-ä.
 report.GER-1S
 'I reported that she was leaving the house.'



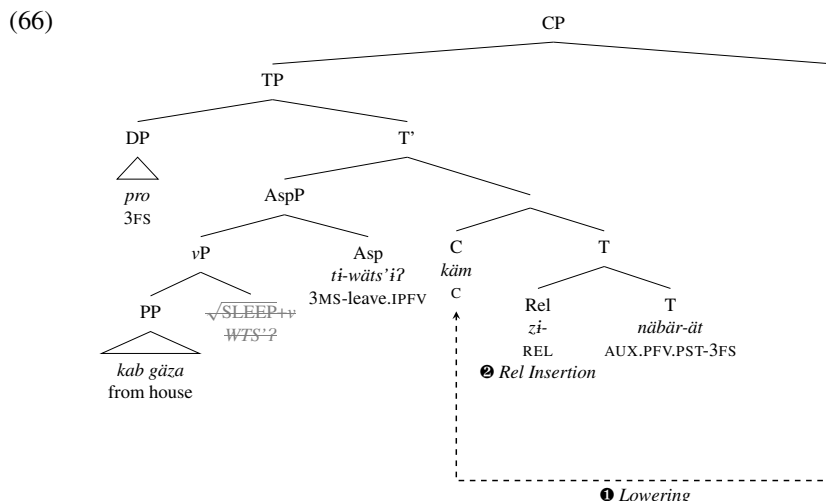
C asymmetrically c-commands T and Asp, but, since T asymmetrically c-commands Asp, T is the closest target for Lowering.

Let me now show how these changes to the locality conditions on Lowering can be used to deliver successive Lowering, by revising slightly the kind of structure that Lowering creates. The intuition behind this analysis is that excorporation is permitted in Lowering because is not subject to syntactic constraints (see also Güneş 2021). Embick and Noyer (2001:561) make the point that Lowering is a postsyntactic operation, and so is not necessarily expected to obey the same restrictions on displacement. For example, Lowering is typically taken not to leave copies, as is also evident in (65b). I suggest, on similar grounds, that Lowering does not need to result in *projection*. Projection or labeling is a property of the narrow-syntactic operation of Merge, and so I argue not a necessary outcome of postsyntactic operations.²⁸ The idea that structures created by Lowering do not need to obey constraints on projection

²⁸ An interesting question is whether Lowering *can* result in projection. Note that, if Lowering never gives rise to projection, derivations in which multiple heads undergo Lowering, for example because both T and C lower onto V, are still possible, with T undergoing Lowering before C. It also remains possible in this view to account for heads that undergo Lowering but behave like affixes, and so appear to be inside the morphological word associated with the verb (see also fn. 29), because departures from the strict isomorphism between M-Words and prosodic words can arise through constraints on the mapping

is already implicit in structures like (65b), since the absence of a copy means that the CP lacks a head.

In this view, Lowering of C to T can create a complex head [C T], *without a head*, as shown in the revised tree in (66).



In this tree, T and the lowered C find themselves in an essentially symmetrical structure. Note that this structure is in line with the morphophonology of Tigrinya, in which proclitic complementizers fall outside of the prosodic word associated with the verb/auxiliary.²⁹

I suggest that the absence of projection has consequences for the calculation of closeness. If empty nodes are ignored for the purposes of c-command,³⁰ then C ends up with the same c-command domain as T. As a result, under the definitions of Lowering and closeness adopted above, another step of Lowering is possible. C still c-commands Asp, and since C no longer asymmetrically c-commands T, both Asp and T meet the definition of closest head. The complementizer may then undergo

from morphological to phonological or prosodic structure (e.g., Shwayder 2015). But, for concreteness, I posit that projection can be mandated by the structural description of the well-formedness requirement that drives Lowering, allowing for Lowering operations that are strictly local.

²⁹Several diagnostics support this conclusion. Complementizers never supply an onset consonant to onsetless verbs/auxiliaries. Onsets are obligatory word-initially, for example resulting in glottal stop insertion in the present tense auxiliaries *?all-* and *?i-*. Similarly, word-internal vowel hiatus is typically repaired by glide insertion, but such repairs do not occur after complementizers. Finally, stacking of prefixes before verbs is limited, frequently resulting in omission or coalescence, but complementizers do not interact with this system. Embick and Noyer (2001:574) propose that the morphological word (or M-Word) associated with the verb is the maximal head not contained within another head. As a result, the absence of projection means that complementizers remain outside the M-Word associated with the verb.

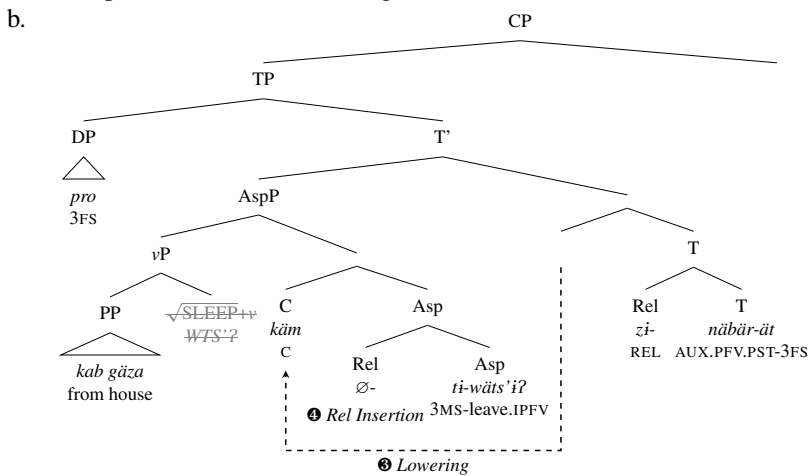
³⁰For concreteness, we can define c-command as in (i), excluding empty nodes.

- (i) *C-command*
A c-commands B iff A dominates B or every *nonempty* node that dominates A dominates B.

excorporation and undergo another step of Lowering, targeting Asp. The derivation in (67b) demonstrates for the example in (67a).³¹

(67) *Successive Lowering in postsyntactic derivation of (67a)*

- a. ካብ ገዛ ከምትወጽእ ከነበረት
 [CP kab gäza kām=ti-wäts'i? zi-näbär-ät]
 from house C=3FS-leave.IPFV REL-AUX.PFV.PST-3FS
 ሓቢረ።
 ስብራ-።
 report.GER-1S
 'I reported that she was leaving the house.'



The second step of Lowering is also followed by Rel Insertion, although the relative prefix is null before the imperfective agreement prefix *ti-*. Subsequent to these postsyntactic operations, the structure undergoes bottom-up Vocabulary Insertion (Bobaljik 2000; Embick 2010). Because of the application of Rel Insertion in intermediate position, the effects of complementizer displacement remain visible on the clause-final auxiliary, which hosts relative morphology and surfaces with the perfective allomorph (as per the insertion rules in 10).

In this derivation, the applications of Lowering and Rel Insertion are interleaved, with each step of Lowering obligatorily followed by node insertion. A question that arises is what rules out a derivation in which Lowering applies twice before Rel Insertion, which would result in the absence of intermediate morphological effects. I suggest that the ordering of morphological operations in instances of successive Lowering can be understood by thinking about their relationship to

³¹Further steps of Lowering are possible as long as there is a suitable host. Tigrinya does not seem to permit multiple auxiliaries (Bulakh 2019, Cacchioli and Overfelt 2024: Sect. 4.1.2), and so I have not found a construction in which this prediction can be tested. Lowering must also respect domain boundaries. As noted in Sect. 3.2, in the biclausal future construction, the stative copula embeds a subjunctive clause into which complementizers cannot lower. For concreteness, I propose that postsyntactic operations are limited to phases, so that Lowering is restricted to the CP phase.

morphological well-formedness constraints. Both Lowering and Rel Insertion can be seen as responses to well-formedness conditions: Lowering satisfies the requirement of some complementizers to precede a verbal head, while Rel Insertion reflects a well-formedness condition on such configurations. I propose a general condition on the postsyntactic component that prioritizes operations that satisfy well-formedness conditions (68), based on Ringen's (1972) discussion of rule ordering in transformational grammar.

(68) *Obligatory Precedence Principle* (Ringen 1972:270)

Obligatory morphological operations apply before optional ones.

This precedence principle generates the right ordering in Tigrinya complementizer displacement. The first step of Lowering is an obligatory response to a morphological well-formedness condition. This well-formedness condition is satisfied by adjunction to T, and an important consequence is that the second step of Lowering is not necessary to yield a grammatical output. In other words, successive Lowering is optional. As a result, the Obligatory Precedence Principle prioritizes the application of Rel Insertion in intermediate position, because Rel Insertion *does* satisfy a well-formedness condition, and guarantees that this operation must precede a second step of Lowering. Since Lowering feeds Rel Insertion, any instance of optional Lowering must still be followed by a step of Rel Insertion.

An advantage of this account is that it ties the possibility of excorporation to the postsyntactic nature of Lowering. As a result, we can maintain a view of syntactic head movement in which it must always deliver Mirror Principle-compliant orders. Head movement, because it is the output of Merge, is accompanied by projection and so does not create symmetrical structures. If we adopt a view of locality in which domination counts for c-command (see, for instance, the definition in fn. 30), the head that projects will always be closest to a higher head. As a result, excorporation will not be possible.

6 Concluding remarks

This paper has presented a novel pattern of complementizer placement in the Ethio-Semitic language Tigrinya. Various complementizers can move leftward and downward through a head-final verb cluster, to attach to a verb or auxiliary, which I argued reflects an operation of Lowering in the sense of Embick and Noyer (2001). I showed that such displacement is associated with two morphological effects on the host of the complementizer: spreading of relative morphology and stem allomorphy. In cases of nonlocal cliticization, in which complementizers attach to a verb across an auxiliary, these morphological effects obligatorily appear in intermediate positions, providing evidence for a conception of lowering as a morphosyntactic operation that can apply multiple times (Embick and Noyer 2001; Arregi and Pietraszko 2021). On the basis of these facts, I argued that the postsyntactic nature of Lowering means that excorporation is possible, since it need not result in projection. This proposal derives the possibility of nonlocal lowering in the postsyntax, but not with syntactic head movement, and only by means of successive steps of Lowering, as evidenced by the morphological reflexes associated with Tigrinya complementizers.

Declarations

Competing Interests The author declares no competing interests.

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