The Structure of Attitude Reports: Representing Context in Grammar

by

Carolyn Spadine

B.A., University of Minnesota (2013)

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Abstract

This dissertation argues for a view of grammar that encodes certain facts about the discourse context in the narrow syntax. In particular, the recurring claim that there are clause peripheral elements that correspond to a kind of perspectival center is supported by novel evidence that this perspectival element can be overt in certain languages. This is shown using data from attitude reports in Tigrinya (Semitic, Eritrea), which overtly realizes a perspective holder, as well as a diverse collection of other languages, including Ewe and Malayalam.

In analyzing this construction, I propose that the certain complementizers have a secondary use as a marker of reported speech. I unify this use of complementizers with their more common clausal subordination use by adopting the proposal in Kratzer (2006), which argues that the modal quantification component of attitude reports is in the complementizer, rather than the attitude predicate, as is commonly assumed. I also analyze two unique properties of these reportative complementizer constructions, indexical shift and logophoricity.

In Tigrinya, indexical shift can be accounted for by allowing these reportative complementizers to quantify over contexts, rather than worlds, and by introducing a context-shifting operator. From a morphosyntactic perspective, I find evidence from indexical shift that person features must be assigned throughout the course of the derivation, rather than at the point of lexical insertion. I also find that these constructions create contexts for matrix clause indexical shift in Tigrinya, something that has not previously been observed. Evidence from Ewe and other languages suggests a correlation between logophoric domains and the presence of a complementizer with reportative properties. Based on this distinction, I argue that Condition A-violating reflexives in languages like French and English are not reducible to logophors, based on their distribution, as well as other syntactic properties.

Thesis Supervisor: David Pesetsky
Title: Professor of Linguistics
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Chapter 1

Introduction

This dissertation argues for a model of grammar where the narrow syntax has access to certain discourse-contextual properties in the course of the derivation. Specifically, the author of a proposition can be encoded in a position of the clause periphery, and that author argument can interact with other elements of the syntax. The proposal that syntactic structure includes some kind of clause peripheral point-of-view argument is not novel, but this dissertation describes a construction where this kind of argument is overt.

These configurations, where an author argument is present overtly in the clause periphery, correlate with two morphosyntactic processes that have been considered point-of-view phenomena: indexical shift and logophoricity.

1.1 Context in grammar, and why it matters

A recurring but controversial suggestion in syntactic research is that some kind of contextual information needs to be represented in syntactic structure, and accessible to morphosyntactic processes. This proposal is at odds with the prevailing understanding of the distribution of labor in grammar: we typically think of syntax being extremely constrained, in that the only information it can interact with is the content of the lexicon, without any access to information about discourse context. Context, on this model, interacts with grammar only on the pragmatic level, which filters out certain sentences after they have been constructed, based on whether they are contextually appropriate. However, there is ev-
idence that the introduction of contextual information cannot be post-syntactic, and this dissertation adds to that body of evidence.

In particular, it is important to differentiate between the (widely adopted) assumption that the meaning of lexical items can make reference to context, and the claim (which I advocate for in this dissertation) that some contextual factors are represented as syntactic objects. The difference between these two positions is can be clarified by looking closely at two different types of analysis of exempt reflexives in English.

Exempt reflexives (also called long-distance reflexives, perspectival reflexives) are those that appear to be exempt from Condition A of binding theory, which requires that all reflexive pronouns are bound within their local domain. For example:

(1) Criticisms of herself, in the newspaper harmed Lucy’s morale.

In (1), the reflexive pronoun *herself* is not c-commanded by an antecedent, making it appear to violate Condition A. Further, in this context, either the anaphor or the pronoun would be acceptable.

(2) PROj Criticisms of her, in the newspaper harmed Lucy’s morale.

(1) and (2) are truth conditionally equivalent, but native speaker intuitions attribute to (1) a sense that the author of this utterance is inhabiting Lucy’s point-of-view, while (2) maintains more psychological distance between the author and Lucy. This distinction is subtle and nebulous, and a satisfying formal analysis of the semantic difference between the two sentences remains elusive.

Even without a precise model of why these two example differ, we can reason about the way this use of anaphors relates to different levels of grammar. An analysis of the contrast between (1) and (2) that maintains that context is not part of syntax could posit that there are two types of *self* pronouns in English: reflexive pronouns that are subject to Condition A, and a homophonous pronoun that is not subject to Condition A, but which has as part of its definition that it must refer to someone who is some kind of point-of-view holder for the proposition. This is the approach taken in Reinhart and Reuland (1993), and on this view, syntax is blind to the relationship between a proposition and the person whose attitude is
described by that proposition. Instead, this point-of-view interpretation comes from the semantics of this homophonous, non-reflexive pronoun *herself*, which is lexically specified as referring to a point-of-view holder.

By contrast, an approach taken in Charnavel and Zlogar (2015) posits that the apparent exceptions to Condition A are actually bound by a covert but syntactically present pronoun. On this view, (1) contains an element, $pro_{log}$, which corresponds to the ‘logophoric center’ of the proposition, and binds *herself*. By adopting this model, Charnavel and Zlogar (2015) does consider a contextual factor, specifically the identity of the attitude-holder whose view is expressed in the sentence, to be part of syntactic structure, because there is a syntactic position that corresponds to a point-of-view argument.

These two approaches represent different conceptions of how point-of-view is encoded. In the former view, there is no syntactic reflex of point-of-view, and instead the lexical entry for *herself* in (1) contributes the point-of-view interpretation. In the latter view, the point-of-view interpretation is induced by the presence of a null pronoun in a specified position, and the reflexive pronoun is evidence that such a null pronoun is present. The criteria that would adjudicate between these two models is whether there are examples that require one approach over the other. It is not yet clear if this is the case. In using English exempt reflexives to provide evidence for the syntactic status of a perspective holder argument, it is not sufficient to observe that certain kinds of reflexives contribute an interpretational component that incorporates point-of-view. Instead, we need to look for evidence that the syntactic analysis of English exempt reflexives is able to fit the data in ways that the lexical/pragmatic analysis does not.

An instructive case here comes from Basque allocutive agreement, as described in Oyharçabal (1993). Basque auxiliary forms provide evidence for a model of syntax that encodes the addressee syntactically. The basic data is given in (3):

(3) Basque allocutive agreement

a. Vouvoiement

pettek lan egin dizü
Peter.ERG(M) worked AUX.3.ERG.ALLO_{vouv}

‘Peter worked’
b. Masculine tutoiement

\[
\text{pettek} \quad \text{lan egin} \quad \text{dik} \\
\text{Peter.ERG(M)} \quad \text{worked} \quad \text{AUX.3.ERG.ALLO}_{\text{masc}}
\]

‘Peter worked’

c. Feminine tutoiement

\[
\text{pettek} \quad \text{lan egin} \quad \text{din} \\
\text{Peter.ERG(M)} \quad \text{worked} \quad \text{AUX.3.ERG.ALLO}_{\text{fem}}
\]

‘Peter worked’

d. Non-allocutive

\[
\text{pettek} \quad \text{lan egin} \quad \text{dû} \\
\text{Peter.ERG(M)} \quad \text{worked} \quad \text{AUX.3.ERG.ALLO}
\]

‘Peter worked’

The boldface verb forms in each sentence in (3) vary based on the gender and number of the person that the utterance is directed at. The pattern of morphology on the auxiliary looks like a kind of agreement, which could be taken to mean that a representation of the addressee is present in the structure to serve as a target of agreement.

However, this data alone does not necessitate that conclusion. There are possible alternative explanations that do not treat the morphology on the auxiliary as a reflex of φ agreement. For example, a possible solution is to posit that there are four different auxiliaries in Basque that each introduce a different presupposition about the identity of the addressee. If this were the case, the syntax would be able to freely construct any of the forms in (3) by inserting any auxiliary, but only one would be pragmatically appropriate in each context. This analysis would conform to the traditional view of the relationship between syntax and context: syntax blindly generates any form in (3), and later in the derivation, a pragmatic component rules out those that are inappropriate for the speech context.

However, in the case of Basque, other data on allocutivity evidences its status as a morphosyntactic agreement phenomena, specifically, the interaction with other agreement markers:

(4) Ban on overlapping agreement marking in Basque

\[\text{[Oyharçabal (1993)]}\]
a.  pro  lan egin  
   duzue  
   2.PL.ERG  work  AUX.2.PL.ERG  
   ‘You (pl.) worked’

b.  *pro  lan egin  
   dinazue  
   2.PL.ERG  work  AUX.2.PL.ERG.ALLO\textsubscript{fem}  
   INT: ‘You (pl.) worked’

When a verb already shows agreement for second person, allocutive agreement becomes impossible. This is an example of a more general property of Basque agreement, which prevents verbal morphology from ever realizing overlapping person features. The grammatical form, (4a), does not contain allocutive marking. The ungrammatical form in (4b) contains second person singular feminine allocutive marking, indicating that this is a statement being addressed to one female person, where the speaker is asserting that a group of people including the addressee worked. If Basque allocutive agreement arose as a result of the pragmatics filtering out alternative forms of the auxiliary where the presuppositions it introduced were not met, that process should be insensitive to the presence or absence of other second person agreement markers in the sentence. However, (4b) shows that allocutive marking interacts with other agreement processes, and therefore that it must be present in the syntactic structure.

Consider, on the other hand, oriented predicates like come and go, which Speas and Tenny (2003) consider one of several phenomena related to a syntactic point-of-view position not unlike the one argued for in this dissertation. By default, come describes motion that culminates or would culminate at the speaker’s position, while go describes other motion. However, these predicates can also be used relative to another individual’s position, in certain contexts:

(5)  
   a.  He\textsubscript{i} was happy when his\textsubscript{i} own mother  came  to visit him\textsubscript{i} in the hospital.
   
   b.  ?? He\textsubscript{i} was happy when his\textsubscript{i} own mother  went  to visit him\textsubscript{i} in the hospital.

The distribution of come and go must be relative to some reference point; in (5b), the reference point is whoever the referent of he is, and using go to describe motion toward that reference point produces an odd interpretation. There are likely systematic principles...
that define what the reference point is for these predicates, but there is no independent
evidence to conclude that this reference point is represented syntactically, or that it can
reliably be used to test or control for the presence of a syntactically represented point-of-
view argument.

The difference between allocutive agreement and oriented predicates like *come* and *go*
is that, even though both are subject to contextual factors, only one clearly interacts with
other syntactic processes, which rules out an analysis that treats it as a post-syntactic effect.

Beyond presenting novel data on a construction that realizes an overt author argument in
the clause periphery, a goal of this dissertation is to present arguments for very concrete
ways that this author argument is present in grammar, and for ways that it interacts with
other morphosyntactic processes.

Specifically, I will argue that there is, in some clauses, a syntactic position in the clause
periphery that encodes the author of the proposition. Consider the Tigrinya sentence in (6),
where there is an overt author argument, *Kidane*.

(6) **Author argument in Tigrinya**

```
kidane almaz màtšaf ?anbib-a ?il-u

‘Kidane says that Almaz read the book’
```

A major argument of this dissertation is that in (6), *Kidane* occupies a position in the
periphery of the clause. In a typical attitude report, the author of the attitude is the external
argument of an embedding attitude predicate, which is a position that is associated with
a wide array of different thematic roles. The clause peripheral argument in (6), however,
is only associated with the author of a proposition, and only appears in certain types of
clauses. If syntax contains a position that is uniquely available to the individual that the
attitude is attributed to, then authorship clearly has a morphosyntactic status. The rela-
tionship between a clause-peripheral author and the proposition must, therefore, be part of
syntax.

The claim that (6) is a monoclause with a peripheral author argument is at odds with
the free translation that accompanies this data point, which is biclausal. This incongruity
persists throughout this dissertation. I have elected to provide these translations, which are
not structurally parallel to the data point they represent, because they reflect the translation offered up by all of my Tigrinya speakers when presented with sentences like (6). Nonetheless, it should be noted that, while the default interpretation is one of a speech event, there are also available interpretations in which the attitude is ascribed to the author based on an inference about the author’s beliefs, rather than a spoken report. Section 2.5.2 discusses this fact briefly, and in Section 2.7, the problem that this fact poses for a semantic analysis is considered. I suggest that there is a default speech report interpretation of underspecified attitudes, but unfortunately have little else to say as to why this should be the case.  

1.2 Main proposal

The central question that this dissertation addresses is whether grammar has access to information about the speech context, and how this information is represented. The conclusion that I will come to is that context is represented semantically as a set of coordinates, \langle \text{AUTHOR}, \text{ADDRESSEE}, \text{LOCATION}, \text{WORLD} \rangle and possibly others, and that syntactically, clauses that allow for the manipulation of context parameters are different than those that do not. Cross-linguistically, this difference can be observed in a distributional restriction, where clauses that involve context change are restricted in terms of the predicates that can select for them. This difference is also sometimes evident language-internally: for example, Tigrinya and Uyghur both have multiple types of clausal embeddings, independently differential based on morphology, where one type of clause involves context shift, and the other does not.

A secondary claim that I make is that the driving semantic mechanism for attitude ascriptions, quantification over possible worlds, or over possible contexts, is associated with a functional head inside the clause, rather then imposed by the predicate that selects that clause. This is crucial for my proposal, but it also has the consequence of explaining a kind of attitude report construction that has mostly escaped the attention of the generative

---

1A complicating factor is that the precise semantic requirements of different types of attitude reports are far less clear than the seem at first glance. For example, it might be more appealing to translate (6) as "According to Kidane, Almaz read the book", but native English speakers intuit that "according to" actually requires a speech event nearly as strongly as "say" does.
literature. In these constructions, an element that is used elsewhere as a complementizer can also contribute a speech report interpretation to a matrix clause. The sentence in (7) Malayalam (Dravidian) exemplifies one version of this construction:

(7) Reportative complementizer in Malayalam

a. john [prime minister varunnu ennu] paranju  
   John(M) prime minister coming COMP said  
   ‘John said that the prime minister is coming’

b. prime minister varunnu ennu  
   prime minister coming COMP  
   ‘Someone said that the Prime Minister is coming’

In (7a), -ennu appears to be a complementizer, but it can also be used as in (7b), where it functions as a kind of reportative marker. The two uses of this morpheme can be unified on a model where -ennu is the element that provides attitudinal quantification.

An even more surprising version of an attitude report with a matrix complementizer element is represented in (8), from Ewe (Gbe).

(8) Author argument in Ewe

a. john bu [be yè nya nu]  
   John(M) think COMP LOG know thing  
   ‘John, thinks that he, is smart’

b. john [be yè nya nu]  
   John(M) COMP LOG know thing  
   “John, says that he, is smart”

Like the Malayalam data in (7b), (8b) involves an element that appears to function both as a complementizer and a matrix clause speech report marker. However, unlike (7b), (8b) retains the attitude-holder argument in from (8a).

These reportative complementizers correlate with the morphosyntactic phenomena that I examine as evidence of context change, indexical shift and logophoricity. If a language has a reportative complementizer and either logophoricity or indexical shift, then clauses
that are headed by the reportative complementizer will be the clauses that allow these phenomena.

By looking at the indexical shift of Tigrinya in more detail, I find that the possible realizations of indexicals within a clause suggest a system of pronominal feature valuation is constrained in a way that suggest that person features themselves are at least sometimes introduced throughout the derivation based on the contextual coordinates that the syntax encodes.

1.3 Notes on data collection, glosses, and transcription

Data in this work that does not occur with a citation was collected by the author. Tigrinya data was collected from three native Tigrinya speakers living in the Boston area. One of these speakers is from Asmara, while two of the speakers are from the Tigray region of Ethiopia. No significant dialectal variation was noted.

Because of the topic of this work, factors of the elicitation context are often reflected in the example sentences, especially when discussing indexical shift. A significant contextual factor that influences the realization of example sentences is that for the most part, in elicitation contexts, both the researcher and the consultant are individuals who identify as female. As such, in examples where the participants trigger φ agreement, that agreement will be feminine.

The transcription of the Tigrinya data follows the conventions in Kifle (2011). For the most part, the spelling of words in Tigrinya straightforwardly reflects their pronunciation, though certain regular phonological processes have been ignored. The orthography of Tigrinya, and specifically the fact that the Ge’ez alphabet used for written Tigrinya is a syllabary, complicates the transcription of the data in two ways. First, the orthography does not permit vowel-initial words, and all words that appear to be vowel-initial are indicated with the symbol for a syllable with a glottal stop in the onset. I assume that this glottal stop is not phonemic in this position, because there are not vowel initial words in written Tigrinya.

While elsewhere in this document, author is used to refer to the attitude holder of a particular proposition, in this instance and in this instance only it refers to the attitude holder of this dissertation, me, Carrie Spadine.
Tigrinya. The phonological transcription of these words also includes a glottal stop. Second, the syllabary does not allow coda consonants, so codas are indicated with the symbol that indicates the relevant consonant followed by the default epenthetic vowel, $i$. It is difficult to tell when this vowel is epenthetic, so in the transliterated versions, the presence or absence of $i$ is intended to reflect when this vowel is actually pronounced, rather than when the orthography would predict its presence.

Unless otherwise noted, examples from other works have preserved the gloss that they are originally presented with, except for some formatting conventions (e.g. smallcaps for functional words, hyphens for morpheme boundaries).
Chapter 2

The role of complementizers in attitude reports

2.1 Complementizers and verbs of speech

The claim that there is a connection between verbs of saying and complementizers is not a new one. This connection is most clearly instantiated in the often-observed grammaticalization pathway that derives new complementizers from verbs of saying (Lord (1993); Hopper and Traugott (2003)). However, another way that the connection between verbs of saying and complementizers is borne out is that many languages have morphemes that appear to be ambiguous between a complementizer and a speech report verb – Sells (1987) claims that Tuburi (9), Gokana and Ewe all contain morphemes that are “both a verb and a complementizer” (p. 448). We can see clearly what he means in (9), where the verb riŋ is described as “optional”.

(9) Speech reports in Tuburi (Niger-Congo) [Sells (1987), originally Hagège (1974)]

à (riŋ) wò gā tisā:rā tʃi sǎ:rā
3 (say) PL COMP head LOG hurt
‘They said that they had headaches’

Sells (1987) assumes that the complementizer gā, which is historically related to a say-verb, can itself convey that its complement is an instance of reported speech, because
regardless of the presence of the verb *riti*, the sentence in (9) has both a speech report interpretation and a pronominal argument that corresponds to the speaker. Both the interpretation and the presence of an argument associated with a speaker are unexpected in the version that lacks an attitude predicate, given that the speech report interpretation and the presence of a matrix attitude-holder are typically attributed to a matrix attitude verb.

Another language that displays this pattern is Tamil (Sundaresan, 2013), where the say-verb *so* is optional:

(10) Speech report in Tamil (Dravidian) [Sundaresan (2013)]

a. raman [[jićær tirūmbi va-r-aar-ūnnū] so-nn-aan
  ‘Raman said that the teacher was coming back’

b. raman [[jićær tirūmbi va-r-aar-ūnnū]-aan
Raman.NOM(M) teacher return come-PRS-3.M.SG.HON-COMP-3.MSG
  ‘Raman said that the teacher was coming back’

Steever (2005) considers the absence of a main clause verb of saying in Tamil examples like (10b) to be a case of deletion, while Sundaresan (2013) assumes that the complementizer -ūnnū either has dual functions as both a verb and a complementizer, or that there are two homophonous -ūnnū morphemes, one a verb and one a complementizer.

Works that observe this dual functionality of speech report verbs as complementizers note that these constructions are unsurprising if thought of as an intermediate stage along a pathway of historical change. However, situating this construction within a diachronic picture does nothing to explain its synchronic status. In Tigrinya, the use of an unembedded complementizer to convey reported speech is observed as early as Leslau (1941), and is still completely productive. Dismissing these kinds of constructions as momentary anomalies in transition from one structure to another misses the point that a synchronic grammar still must be able to produce these sentences.

Notably, there is also a tendency for verbs of saying to grammaticalize into speech report markers (Klamer (2000); Aikhenvald (2004); Jäger (2010)). Below is an example from Ecuadorian Quechua, where according to Jäger (2010), the verb of saying *ni* and the
third person marker -n have fused into a reportative marker.

(11) Reportative marking in Ecuadorean Quechua

\[
\text{huasha-man cunuj yacu tía-n nin}
\]

behind-towards hot water be-3.SG REP

‘On the other side (of the ridge) there are hot springs, they say’

I will argue that these reportative markers can also be analyzed using the semantics provided for the complementizers that can be used to convey reported speech, but by saturating the perspective holder argument via existential closure, rather than by inserting a pronominal element.

The goal of this chapter is to provide an analysis of the syntax and semantics of complementizers with a reportative meaning component in main clause uses, as in (9) and (10). Because the CP layer of the clause is thought of as being composed of multiple projections, rather than one singular CP projection, following Rizzi (1997); Cinque (1999), refering to this element as a “complementizer” is somewhat reductive, but I continue to do so for the sake of terminological simplicity. Further, while clauses containing certain kinds of perspective sensitive elements are often said to be headed by “logophoric complementizers”, one of the aims of this dissertation is to be cautious about whether these elements are really reducible to the same underlying phenomena, and as such, I reserve the term “logophoric” for logophors in the sense of Hagège (1974); Clements (1975); Culy (1994). Instead, I will refer to these elements as “perspectival complementizers”, and the arguments that they introduce as the “author” of the attitude.

2.2 The data

The next section will provide an in-depth description of clause types in Tigrinya, and the differences between clauses that have a perspectival complementizer and an author argument, and clauses that lack them. This will eventually provide the basis for a syntactic analysis, which will then be extended to other languages.

In Tigrinya, the perspectival complementizer is ?iil. In (12a), ?iil- is embedded under
The verb *ti-ammin*, “believe”. In (12b), it occurs in a matrix clause to convey reported speech, along with an author argument.

(12) The perspectival complementizer in Tigrinya

Hiwēt(F) 1.SG.NOM DET book read-1.SG COMP-3.F.SG 3.F.SG-believe
‘Hiwēt, believes she, read the book.’

b. [hiwēt ?anā nāti māšaf ?anib-ā ?il-a]
Hiwēt(F) 1.SG.NOM DET book read-1.SG COMP-3.F.SG
‘Hiwēt, said that she, read the book’

There are several potential explanations for the absence of a matrix attitude predicate in the structure in (12b), the most obvious involving a deleted or null matrix clause. In the next sections, syntactic tests will show that (12b) is actually a monoclausal construction, leading me to analyze *?il-* as a functional head in the clause periphery. Under such an analysis, a sentence like (12b) is monoclausal.

As has been mentioned above, the free translations in sentences like (12b) are not intended to parallel the structure of the Tigrinya sentence or the exact range of possible meanings. I will argue extensively below that the Tigrinya sentences are monoclausal, while the English free translation is biclausal. Similarly, the English free translation contains the verb *say*, which at least canonically requires a speech event, while it is far less clear what kind of event, if any, is strictly speaking required to attribute the attitude in (12b) to its clause-peripheral author.

Similar facts have been observed in Ewe by Clements (1975); Pearson (2013). The morpheme *be* can either be used under a matrix attitude verb, as in (267b), or alone in a monoclausal construction with a author argument, as in (13b).

(13) Speech reports in Ewe

considers *?il-* to be a "subordinating serial verb" (p. 122, footnote 2). Part of the motivation for this analysis is that *?il-* has a couple of other uses in Tigrinya, as a benefactive marker, and as a kind of verbalizer for ideophones. While there are certainly interesting things to be said about the connection between these uses of *?il-*, an analysis of these connections falls well outside the scope of this dissertation. It is worth noting that in all three uses, there is an applicative-like function, where *?il-* is associated with the presence of an argument that would not otherwise be present.
a. john bù [be yè nya nu]
   John(M) think COMP LOG know thing
   ‘John, thinks that he is smart’

b. john [be yè nya nu]
   John(M) COMP LOG know thing
   ‘John, says that he is smart’

As in Tigrinya, the variant in (13) with a complementizer but no attitude predicate is interpreted as reported speech, and there is an additional nominal, John, which is interpreted as the speaker.

A final language that I consider is Malayalam. The Tigrinya and Ewe data are striking because of the presence of a perspective holder argument without any attitude verb. Malayalam lacks this element — the author argument is only possible if there is an overt attitude verb, as in (14a). However, the complementizer ennū can occur in a matrix clause to convey a reported speech without specifying a specific source, as in (14b).

(14) Speech reports in Malayalam

   a. prime minister varunnu ennū john paranju
      prime minister coming COMP John(M) said
      ‘John said that the Prime Minister is coming’

   b. prime minister varunnu ennū
      prime minister coming COMP
      ‘Someone said that the Prime Minister is coming’

   c. prime minister varunnu ennū (*john)
      prime minister coming COMP John(M)
      INT: ‘John said that the Prime Minister is coming’

The Malayalam examples can be understood as having the semantics associated with the reportative complementizer, with existential closure over the author argument.

These proposals are predicated on the conclusion that constructions using complementizers as reportative markers are actually monoclausal. Arguments for this will be laid out in section 2.4. First, section 2.3 will describe clausal embedding in Tigrinya generally.
2.3 Properties of perspectival clauses in Tigrinya

There have been several proposals that posit a perspectival argument in the clause periphery: Ross (1970); Jayaseelan (1998); Speas and Tenny (2003); Sundaresan (2013); Charnavel and Sportiche (2016). One point of variation that emerges among these proposals concerns the distribution of these arguments. Should they be present in every clause? Should their distribution be determined by the lexical semantic properties of the predicate that embeds them? Are they obligatory, or optional?

Tigrinya exhibits a constellation of properties that allow detailed investigation of these questions. As mentioned above, there are overt author arguments in Tigrinya. These overt arguments radically simplify the syntactic test required to determine their distribution, allowing us to observe them directly rather than via secondary effects such as agreement or binding. However, another way that Tigrinya is well-suited to exploring the distribution of perspectival arguments is that there are two types of clausal embedding, but only one has an author argument. We can therefore contrast properties of the two types to understand how perspective interacts with other properties, and when an author argument is possible at all.

The finding is that clauses headed by ʔil- not only allow an author argument, but they create new contexts for the evaluation of indexicals, a phenomena known as indexical shift, and allow binding of reflexive pronouns that would not otherwise be available. Clauses that lack an overt perspectival argument also lack indexical shift and these ostensibly Condition A-violating binding configurations.

The sentences in (15a) and (15b) exemplify perspectival clauses in Tigrinya, a type of construction seldom mentioned in the literature, used in some instances of clausal embedding — I will refer to sentences like (15a) and (15b) as ʔil- constructions, after the ʔil-morpheme that shows up either sentence-finally (15a), or preceding the matrix verb (15b). More specifically, I will refer to sentence like (15a) as truncated ʔil- constructions, given their apparent lack of an embedding verb, and sentences like (15b) as full ʔil-constructions.
Below, I will argue that sentences like (15a) and (15b) are attitude report constructions that encode an author in a high, clause-peripheral functional head. This is contra the claim in Kifle (2011) that ?il- is simply a verb in (15a), and that (15b) is a “subordinating serial verb” construction (a construction not possible with other verbs in Tigrinya). On the other hand, the embedding construction in (15c) exemplifies a more prototypical clausal embedding strategy that, I will propose, lacks such a projection. Note that the English free translations provided for all data reflect my consultants’ intuitions about the information conveyed by the sentence, and are not intended to constitute a claim about the structure of the Tigrinya sentences.

The rest of this section will compare the properties of these three clause types. In doing so, I will provide evidence that there are two distinct clause types in Tigrinya, which differ in a number of respects. This will also serve to lay the groundwork for the subsequent section, where I discuss the extent to which the presence of a perspectival complementizer and an author argument can explain these differences.

2.3.1 Verbal morphology varies based on clause type

Verbs in Tigrinya show sensitivity to root vs. non-root clause contexts in their morphology. Like other Semitic languages, Tigrinya has a morphological system that combines conso-
nantal roots with a set of vocalic templates. In the verbal domain, these templates indicate aspectual distinctions. According to Kifle (2011), Tigrinya has two perfective forms: simple perfective and historic perfective. My own data shows that the simple perfective form is only available in root clauses. While Kifle (2011) does not specifically mention this constraint on the distribution of the historic perfective, the data she presents reflects this generalization. The perfective historic form must be used in non-root clauses, and can only be used in root clauses in pragmatically marked contexts.

The sentence in (16) below shows the verb “read” (infinitive form mi-nbab) in the simple perfective (Panbib-) in a root clause.

(16) Root clause (stem = ?anbib, no prefix)

?anā nāti māṣḥaf ?anbib-ā
1.SG.NOM DET book read-1.SG
‘I read the book’

In non-root contexts, the same verb is used with a perfective historic template (-nbāb). These verbs also feature some kind of prefixal subordination marker in each case, as well as an agreement paradigm specific to the historic perfective (e.g. 1.SG agreement in (17a) is -ku, but in (16) is -ā).

(17) Non-root clauses (stem = nbāb, prefix)

a. Relative clause

zi-nbāb-ku-wo māṣḥaf
REL-read-1.SG-M.OBJ book
‘The book that I read’

b. Raising

kidane māṣḥaf zi-nbāb-ā yi-missil
Kidane(M) book REL-read-3.M.SG M-seem
‘Kidane seems to have read the book’

---

2This dissertation addresses only verbs in the two varieties of perfective aspect.
c. Control

nāṭi māṣḥaf ki-ni-mbāb ?i-dāli?

DET book REL-1.SG-read 1.SG-want

‘I want to read that book’

kim-zi- clauses clearly pattern with the non-root clauses in (17), rather than the root clause in (16), with respect to these morphological properties.

(18) kim-zi- clauses (stem = mbāb)

ḥiwāt nāṭi māṣḥaf kim-zi-mbāb-āt yiʔammin

Hiwet(F) DET book COMP-REL-read M-believe

‘I believe that Hiwet read the book’

I take this to show that typical embedded clauses in Tigrinya are required to have verbal morphology that is distinctly marks it as being non-root.

Compare this to ?iil- clauses; here the morphology on the main verb under ?iil- is always simple perfective, hence root-like, regardless of whether there is an embedding verb in the structure.

(19) Root morphology in ?iil- clauses

Kidane ḥiwāt māṣḥaf ṭanbīb-a ?iil-u (tāzarāb-u)


‘Kidane said that Hiwet read the book’

Other types of clauses, then, are sensitive to a root/non-root distinction, but clauses containing ?iil- do not show this sensitivity. Sundaresan (2018) suggests that ?iil- clauses, because they are indexical shift contexts, are embedded root clauses, which is consistent with the morphology they reflect, but I leave for future research whether independent syntactic evidence supports this proposal.

2.3.2 Indexical shift

?iil- embedded clauses differ from kim-zi- embedded clauses in that the indexicals they contain can and sometimes must receive a shifted interpretation. Chapter 3 focuses on Tigrinya indexical shift in greater detail, but the basic facts are outlined below.
(20) Indexical shift in Tigrinya

\[
\text{hiwät} [\text{?anā nātī māṣḥaf ?anib-ā ?il-a}] \text{ ti-ʔamin}
\]

Hiwet(f) 1.SG.NOM DET book read-1.SG COMP-3.F.SG 3.F.SG-believe
✓ Hiwet, believes she, read the book.  [indexical shift]

In (20), the first person indexical ?anā is interpreted as referring to hiwät, the subject of the matrix sentence. The first person indexical in an embedded ?il- clause can also refer to the speaker in the utterance context, but this version of the sentence differs slightly in the verbal agreement marking. In the shifted version in example (20), the verbal agreement reflects the shift in features of the embedded subject and is realized as first person. In example (21) below, the first person pronoun is unshifted (i.e., refers to the speaker in the discourse context) and the verbal agreement reflects third person features.

(21) Tigrinya ?il- clause with unshifted indexicals

\[
\text{hiwät} [\text{?anā nātī māṣḥaf ?anib-a ?il-a}] \text{ ti-ʔamin}
\]

Hiwet(f) 1.SG DET book read-3.F.SG ?il-3F.SG 3F.SG-believe
✓ Hiwet, believes I, read the book.  [no indexical shift]

This shift in the interpretation of person features cannot be reduced to an instance of quotation, as wh-movement is possible out of the clause with the shifted indexicals:

(22) Wh-words in Tigrinya ?il- clauses

a. Wh- extraction possible

\[
i nān ?iy-ā kidane rāʔay-ā ?il-u?
\]

DOM who AUX-1.SG Kidane(M) see-1.SG COMP3.M.SG
‘Who did Kidane say that he saw?’

b. Question interpretation of in-situ wh- words

\[
kidane ni nān ?iy-ā rāʔay-ā ?il-u?
\]

Kidane(M) DOM who AUX-1.SG see-1.SG COMP-3.M.SG
‘Who did Kidane say that he saw?’

By contrast, as shown in (23), indexicals within embedded kim-zi- clauses are never shifted. They are always interpreted with respect to the utterance context.
No indexical shift in *kim-zĩ*-clauses

Hiwät [ʔanā nātī māšḥaf *kim-zĩ*-ʔanbib-ā] tiʔamin

Hiwet(F) 1.SG DET book COMP-read-3.F.SG 3F.SG-believe
✓ Hiwet believes I read the book. [no indexical shift]

Indexical shift has been proposed to be related to the presence of an author or attitudinal argument in the CP layer of the clause Speas and Tenny (2003); Baker (2008); Sundaresan (2013), so the fact that indexical shift occurs in *ʔil*-clauses but not *kim-zĩ*-clauses accords with the larger proposal that *ʔil*-clauses have an attitudinal argument.

### 2.3.3 Distribution

For most verbs that take finite clausal complements, *kim-zĩ*- and *ʔil*- complements are equally available. There are exceptions to this, however, where *kim-zĩ*-clauses are possible but *ʔil*-clauses are not. Once such example involves perception verbs; for example, *kim-zĩ*-clauses are possible with *hear* but not *ʔil*-clauses.

#### (24) a. *kim-zĩ*-clauses: compatible with perception verbs

Hiwät kāb sāraḥ *kim-zĩ*-wāṭṣā-ya šāmiʔ-a

‘Hiwet heard that someone fired her from work’

#### (24) b. *ʔil*-clauses: incompatible with perception verbs

*hiwät kab sāraḥ wāṣīʔ-ā *ʔil-a/u šāmiʔ-a

Hiwet(F) from work fired-1.SG *ʔil*-3F.SG/3.M.SG hear-3.F.SG

INT: ‘Hiwet heard someone fired her from work’

When both types of clausal complements are available, there usually is no perceptible difference in meaning for most speakers. For example, (25a) and (25b) are synonymous, with the caveat that the embedded subject in (25b) must be corefer with the matrix subject, while no such requirement is imposed on (25a).

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3To my knowledge, the opposite case, where a predicate allows *ʔil*- but not *kim-zĩ*- clauses, does not occur.
(25) *kim-zi* - and *?il* - clauses

a. kidane ʔissued *kim-zi-šānif* yi-hasib
‘Kidane, thinks that he/she/it will win’

b. kidane ʔanā ʔiy-ā ʔi-šānif ʔil-u (yi-hasib)
Kidane(M) 1.SG.NOM AUX-1SG FUT-win COMP-3.M.SG M-think
‘Kidane, thinks that he/she/it will win’

Considering for a moment only the reading of (25b) with coreference between *kidane* and the embedded pronoun ʔissued, speakers feel (25a) and (25b) to be equivalent. However, (25a), according to one consultant, makes Kidane seem very overly confident about the outcome, and comes off as rude. (25b) does not share this property. This is likely indicative of some difference in the properties of the two clauses, though it is difficult to pinpoint exactly what. The *kim-zi*- version somehow conveys stronger commitment to the embedded proposition on the part of Kidane, which could mean that the *?il*- version involves the kind of weakening often attested with reportative marking (Aikhenvald (2004)). However, pragmatic effect of this weakening with evidential marking typically applies to the utterance context speaker’s commitments, rather than to the origin of the reported information’s commitments, and further work is required to develop how such pragmatic weakening might be derived.

A more concrete difference is that (25b) must be read *de se*, while no such constraint applies to (25a). This means that (25b) requires the perspective holder to self-identify as the person he believes will win, while (25a) does not. For example, imagine that Kidane is running for president, and listens to a talk radio station discussing a recent presidential debate. The pundits on the radio show are playing clips of a particular candidate who they think really stood out during the debate, but Kidane did not hear the name of the candidate they were talking about specifically. Kidane is very impressed with this candidate, and believes that, whoever he is, he will certainly win the election. Worried about what it means for his own campaign, he tells me “I think that candidate will win the election”. Unbeknownst to him, the candidate under discussion is Kidane himself.

In this situation, I could then report what Kidane has said to me using (25a), but (25b) is
judged to be an inaccurate report of Kidane’s thoughts, as the first person indexical imposes
the constraint that Kidane realize it is he himself that he thinks will win.

This contrast is consistent with the generalization noted in Deal (2017) that all lan-
guages with shifted first person indexicals require them to be read de se.

2.3.4 Binding

Further evidence for the monoclausal analysis of truncated ʔil- constructions comes from
binding. The Tigrinya reflexive pronoun baʔa]- must be locally bound by a coreferring
antecedent, as in (26). The φ-features of the antecedent are reflected in a suffix on the
reflexive pronoun.

(26) Reflexive pronouns in Tigrinya

mahari baʔal-u/*pro tāḥasib-u
‘Mahari washed himself’

Antecedents outside the clause containing the reflexive pronoun are not sufficiently lo-
cal to serve as binders. The clausal embedding in (27) shows that for embedded clauses
with the kim-zi- complementizer, binding a reflexive pronoun in subject position by an an-
tecedent outside the clause is not possible. The properties of this kind of clausal embedding
and the ways in which they differ from ʔil- clauses will be discussed in more detail later, but
for now, the crucial fact is that an intervening clause boundary blocks pronominal binding.

(27) Binding into kim-zi- clauses

birhanei ʔissu$_{i/j}$/baʔal-u nāti muvi kim-zi-fāti-u-wo
tāzārab-u
said-3.M.SG

‘Birhane$_i$ said that he$_{i/j}$ liked the movie’

The sentence in (27) is grammatical with a pronominal argument, ʔissu, or with pro
but in the same position, the reflexive pronoun baʔa]- is impossible. This generalization
holds both in the case where the pronominal element is interpreted as coreferential with
birhane and in the case where it refers to some other masculine singular individual. This pattern, where pronouns are possible but reflexive pronouns are prohibited, is expected if a finite clause boundary delimits a binding domain. The potential antecedent, birhane, is not sufficiently local to bind the reflexive pronoun within the binding domain, giving rise to a Condition A violation; birhane is sufficiently separated from ḫissu/pro that it can bind either of these pronouns without causing a Condition B violation.

On the other hand, (28) shows that the opposite pattern holds in the ḫil- embedded clauses; the pronominal argument ḫissu/pro is impossible, but the anaphor ḫal-u is possible. This indicates that, in this configuration, no clause boundary intervenes between the reflexive pronoun and the antecedent birhane, as birhane is able to bind the reflexive pronoun without giving rise to a Condition A violation.

(28) ✓ Binding into ḫil- clauses

\[ CP \text{birhane}_i \text{ ḫal-u}/\#\text{ḥissu}_i \text{ nātī muvi ḫātiw-u-o} \]

\#āl-u]

‘Birhane; said that he\textsubscript{i/sj} likes the movie’

An apparent counterexample to the generalization that ḫil- embedded clauses allow bound reflexive pronouns as subject is the data point in (29), where indexical shift yields a configuration where a non-reflexive coreferential pronominal subject ḫanā appears under the coreferential DP Birhane:

(29) ✓ Binding into ḫil- clauses (except shifted indexicals)

\[ CP \text{birhane}_i \text{ pro } / \#\text{ḥanā}_i / \#\text{āl-ā}_i \text{ nātī muvi ḫāti-āy-o} \]
Birhane(M) pro 1.SG self-1.SG DET movie like-1.SG-3.M.SG.OBJ

\#āl-u]

‘Birhane; said that he\textsubscript{i/sj} likes the movie’
Here a shifted first person pronoun ?anâ/pro refers to the higher argument birhane, while the first person reflexive pronoun baʕal-â is ungrammatical. This is at first glance an apparent violation of Condition B, as it is a case where the pronoun appears to be locally bound by a coreferring antecedent. However, this example could instead be indicating that featural matching is a condition on binding; that is, in order for a nominal to serve as an antecedent for another nominal, they must corefer, but coreference is not sufficient. There is an additional requirement that they must also share the same phi features, or the potential antecedent will be unable to bind the lower argument. On this view, ?anâ is licit in this position because it cannot be bound by birhane, because birhane carries third person features and ?anâ is first person, so no binding relation is possible between them.

2.3.5 Summary: ?il- vs. kim-zi- clauses

The section above has outlined some of the major difference between the two types of finite clausal embedding in Tigrinya, kim-zi- and ?il- clauses. First, ?il- clauses are root-like in terms of their verbal morphology, while kim-zi- clauses are morphologically more similar to relative, control, and raising clauses. Second, the distribution of ?il- clauses is slightly more restricted that that of kim-zi- clauses, in that there are some types of predicates, like hear, that allow only kim-zi- embedding, but no known predicates that allow only ?il-clauses to the exclusion of kim-zi- clauses. Third, embedded ?il- clauses allow indexical shift, whereas embedded kim-zi- clauses do not. Finally, it is possible to have a reflexive pronoun in the subject position of an embedded ?il- clause, but not in an embedded kim-zi-clause.

2.4 ?il- clauses contain attitude holders

This section examines two other significant differences between the examples in (15a)-(15c) (repeated below in (30)) that will constitute the foundation for a syntactic analysis of ?il- constructions. I first show that, for the purposes of adverbia l modification, (30a) behaves as a single clause, whereas (30b) and (30c) both have a biclausal structure available for modification.
(30) a. Truncated ʔil- construction

naomi anam siga sarih-u ʔil-a
Naomi(F) Aman(M) meat cook-3M.SG.SBJ COMP-3.F.SG
‘Naomi says that Aman cooked meat’

b. Full ʔil- construction

naomi [aman siga sarih-u ʔil-a] ti-ḥasib
Naomi(F) Aman(M) meat cooked-3M.SG.SBJ COMP-3.F.SG 3.F.SG-think
‘Naomi thinks that Aman cooked meat’

c. kim-zi- clause

naomi [aman siga kim-zi-sarih-āt] *(ti-ḥasib)
Naomi(F) Aman(M) meat COMP-REL-cook-3M.SG.SBJ 3.F.SG-think
‘Naomi thinks that Aman cooked meat’

This fact suggests that truncated ʔil- constructions like (30a) are not embedded clauses, but monoclausal constructions. Second, I show that both the truncated ʔil- construction in (30a) and the full ʔil- construction in (30b) allow binding of reflexive pronouns in the subject position, while the kim-zi- embedded clause in (30c) do not allow this possibility. This suggests that both (30a) and (30b) have a nominal position above the subject but within the same clause that an antecedent can occupy to satisfy Condition A requirements on binding reflexive pronouns; in (30a), this nominal position is occupied by Naomi, but in (30b), this position is occupied by pro. I will show that this need not be the case, however; overt nominals can also occur in this position.

Based on the apparent monoclausalty of truncated ʔil- constructions based on modification and binding, I argue that naomi in (30a) is introduced by a left-peripheral head. Full ʔil- constructions like (30b) are instances of the construction in (30a) embedded under an attitude predicate.

2.4.1 Adverbial modification

Truncated ʔil- constructions like (31) are puzzling because they simultaneously appear to consist of only a single predicate, since they contain only one verb, but at the same time appear to have a meaning and argument structure most readily associated with clausal em-
bedding. Specifically, they have an interpretation as an attitude report and an argument associated with the attitude holder, in this case, *kidane*.

(31) Tigrinya attitude report

\[
\text{kidane \ almaz mätṣaf ?anbib-a \ ?ił-u}
\]


‘Kidane says/thinks/believes that Almaz read the book’

One approach to explaining this apparent contradiction would be to assume that there is some kind of higher clause in (31) with *kidane* as the subject, and a null or elided verb selecting the complement clause and contributing an attitude report interpretation. Another possible approach, the one supported here, is that there is only a single clause in (31) and the attitude holder argument, and the attitude report interpretation, is introduced by a functional element inside the clause. These two hypothesis diverge in a testable way; while the presence or absence of a null verb may not be directly detectable, the concomitant clausal structure should be.

The same modification possibilities should be available for a clause headed by a null verb as would be available for a clause headed by an overt verb. Adverbial modification can therefore be used as a diagnostic for the presence of a higher clause in sentences like (31). Crucially, this test is a syntactic one; there might be various semantic preconditions for adverbial modification, such as the presence of an event variable or compatibility with the predicate being modified. The claim underlying this test is that meeting these semantic preconditions is not sufficient to license the presence of an adverbial modifier, but instead that the syntactic structure needs to make available the appropriate attachment site. For example, if manner adverbs adjoin to the vP, then using a manner adverb to modify a particular predicate relies on the presence of a vP associated with that predicate. That a given adverb must attach at a particular point in the structure is a commonly held view; this is why adverbs can be used as landmarks to detect movement of other elements, and is frequently used in the causative and nominalization literature to determine the amount of clausal structure associated with the caused or nominalized predicate.

As a baseline, both *kim-zī*- sentences and full *?ił*- sentences allow manner modification of both the saying event (32a,33a) and the buying event (32b,33b).
(32) *kim-zi*-constructions: modification of either the matrix or embedded verb is possible

a. ✓ Modification of the higher verb

naomi [aman mänbär käs *kim-zi-gäz?-ät] tazaräb-a
Naomi(F) Aman(M) chair quickly COMP-REL-buy-3.M.SG say-3.F.SG
‘Naomi said that Aman quickly bought a chair.’

b. ✓ Modification of the lower verb

naomi [aman mänbär *kim-zi-gäzät] käs tazaräb-a
Naomi(F) Aman(M) chair COMP-REL-buy-3.M.SG quickly say-3.F.SG
‘Naomi said quickly that Aman bought a chair.’

(33) Full *?iI*-constructions: modification of either the matrix or embedded verb is possible

a. ✓ Modification of the higher verb

naomi [aman mänbär gäzi?-u ?il-a] käs tazaräb-a
‘Naomi said quickly that Aman bought a chair.’

b. ✓ Modification of the lower verb

naomi [aman mänbär käs gäzi?-u ?il-a] tazaräb-a
‘Naomi said that Aman quickly bought a chair.’

By contrast, the truncated *?iI*-clauses disallow modification of the saying/thinking/believing event, but allow modification of the buying event:

(34) Truncated *?iI*-constructions: modification of the saying event disallowed

a. ✗ Modification of the saying event

(*käz) naomi aman mänbär gäzi?-u (*käs) ?il-a
(*quickly) Naomi(F) Aman(M) chair buy-3.M.SG (*quickly) COMP-3.F.SG

(*käs)

(*quickly)

‘Naomi said (*quickly) that Aman bought a chair.’
b. ✓ Modification of the lower verb

Naomi(F) Aman(M) chair quickly buy-3.M.SG COMP-3.F.SG
‘Naomi said that Aman quickly bought a chair.’

This contrast suggests that full ?i?l- constructions contain the relevant attachment sites for manner modification of the event described by the embedding verb, but truncated ?i?l-constructions lack this structural position. However, there are other possible explanations for this discrepancy; perhaps the covert verb in example (34) is for some reason semantically incompatible with manner modification; the translations given by native speakers reflect a speech event interpretation of truncated ?i?l- clauses, but it is in principle possible that the relevant attitude is more like think in being stative and therefore disallowing modification by adverbs like quickly. However, the same contrast holds for temporal modification, which should be available regardless of the semantics of the embedding verb. (35a) shows that the lower buying event and the higher believing event can be specified to have occurred at different times, but in (35), this specification is ruled out.

(35) Truncated ?i?l- constructions disallow specific temporal reference

a. ✓ k?im-zi- construction: higher event can be temporally specified

lomi today Naomi(F) Aman(M) chair COMP-REL-buy.3.M.SG
‘Today, Naomi believes that Aman bought a chair yesterday’

b. ✓ Full ?i?l- construction: higher event can be temporally specified

lomi today Naomi(F) Aman(M) chair buy-3.M.SG ?i?l-3F.SG
‘Today Naomi believes that Aman bought a chair yesterday.’
c. Truncated ?il- construction: higher event can’t be temporally specified

\*lomi naomi anan timali mānbār gāzi?-u ?il-a
today Naomi(F) Aman(M) yesterday chair buy-3.M.SG ?il-3.F.SG

INTENDED: ‘Today Naomi said that Aman bought a chair yesterday.’

If temporal modifiers like lomi, ‘today’ are associated with the TP projection, then the contrast in example (35) would suggest that there is a TP projection associated with the embedding attitude predicate in kim-zī- constructions and full ?il- constructions, but that this projection is absent in truncated ?il- constructions.

This prohibition against temporal modification even extends to multiple instances of the same modifier, showing that this effect cannot be the result of a requirement that the two events coincide temporally, but that this is really a prohibition on modification. (36a) shows a full ?il- construction with ḥādi, ‘right now’ modifying both the thinking event and the losing event, but an analogous sentence in (36b) is impossible without an overt embedding verb.

(36) a. ḥādi almaz ḥādi kīšīnīf ?il-a tihasib
    now almaz now losing ?il-3.F.SG thinks
    ‘right now Almaz thinks she’s losing right now’

b. (*ḥādi) almaz ḥādi kīšīnīf ?iy-ā ?il-a
   (*now) almaz now losing AUX-1.SG ?il-3.F.SG
   INT: ‘right now, almaz says she’s losing right now’

I take this to mean that truncated ?il- clauses lack verbal structure that is present in full ?il- clauses. In absence of an overt embedding verb or the concomitant structure of a higher predicate, the truncated ?il- clauses appear to be monoclausal.

Extraposition

Though patterns of clausal extraposition in Tigrinya do not provide an argument against a null verb analysis of truncated ?il- constructions, they do provide evidence against treating ?il- as a verb. Embedded clauses in Tigrinya can move to a position above the matrix subject, and in (37b) and (38b).

40
The word order that results from this movement, as seen in (37b) and (38b), is one where the embedded clause is followed by the matrix subject, which itself is followed by the matrix verb. Based on these examples, the material that can be extraposed is everything up to, but not including, the matrix verb.

In truncated ?il- constructions, ?il- must extrapose with the rest of the clause.

If ?il- in (39a) was truly a verb, it would occupy the same position as nāgār-ati-ni in (37a) and (38a), and therefore it should be left behind by extraposition of the embedded clause, as in (39b). However, this word order is ungrammatical. Instead, ?il- must be moved
with the rest of the clause, as in (39c), suggesting that ?il- occupies the same position in both truncated and full ?il- clauses. Though this data could be compatible with an analysis where a null verb is present in (39), it is incompatible with the proposal that ?il- actually is itself a verb in (39).

2.4.2 Agreement

Another clue to the position of the projection headed by ?il- is that the presence of the author argument does not interfere with the normal agree relation between T and the subject. In (40a), the verb shows 3rd masculine singular \( \phi \) feature agreement with the subject, aman. In (40b), where a author projection has been added, the agreement on the verb remains unchanged, despite the fact that there is now a higher DP in the clause.

(40) a. aman mänbär gäzi?-u
   Aman(M) chair bought-3.M.SG
   ‘Aman bought a chair.’

   b. naomi [aman mänbär gäzi?-u] ?il-a
   Naomi(F) Aman(M) chair bought-3.M.SG ?il-3F.SG
   ‘Naomi said that Aman bought a chair.’

The perspectival argument must be above the subject, but for the pattern of agreement exemplified in (40) to hold, it must also be above \( T_0 \). Otherwise, the \( \phi \) probe on T would reach the author argument before the subject argument, and T would have its features valued based on the features of the author argument, contra the attested pattern (41).
(41) Agreement with Subj DP is impossible if Auth DP is below T

However, if the author DP is positioned above TP, as in (42), it no longer interacts with agreement between the subject and T, allowing for the agreement pattern attested in the data.

(42) Agreement with Subj DP is possible if Auth DP is above T

Therefore the author argument must be above T. A related question is how to derive agreement with the attitude-holder argument in (42): I propose that the $X^0$ also comes into
the derivation with unvalued $\phi$ features. It initially probes downwards, but because there are no available goals, as the subject is already in an agree relation with $T^0$, the probe then looks upward, following Béjar and Rezac (2009), and finds the attitudinal argument.

2.4.3 Proposal

Recall from section 1 that a number of proposals have posited projections in the clausal periphery to account for phenomena like allocutive agreement, logophoric pronouns, and others. I argue that $?il$- heads some such projection.

The structure that I propose is presented in (44) for the sentence in (43).

In (44) $?il$- heads a projection some distance above TP but within the clause, and introduces a nominal argument in its specifier.

2.4.4 Embedded $?il$-

The analysis given above for truncated $?il$- constructions accounts for syntactic properties like the lack of an embedding clause, the ability to bind reflexive pronouns in subject positions, and the agreement patterns attested in these constructions. The question now is how
to extend that analysis to sentences like (45), where the ?il- clause appears under an attitude verb.

(45) full ?il- constructions

naomi [aman siq sarif-u ?il-a] ti-?asib
Naomi(f) Aman(M) meat cooked-3.M.sg ?il-3.F.sg F-think
‘Naomi thinks that Aman cooked meat’

The discussion above of the adverbial modification possibilities for ?il- clauses suggests that the full ?il- constructions, unlike the truncated ?il- constructions, are actually biclausal. Given that there are two verbs in (45), sarifu, ‘cooked’, and ti-?asib, ‘think’, it would be reasonable to assume that the ?il- morpheme here is not contributing a perspectival argument, meaning that this ?il- morpheme is behaving differently than the ?il- morpheme in the truncated ?il- sentences in the previous section. There are a few reasons to reject that hypothesis, and to believe instead that there is actually an author argument in sentences like (45). First, because full ?il- constructions like (45) can have an extra argument between the subject of the matrix clause and the subject of the embedded clause, as in (46):

(46) argument of ?il- can be overt in embedded contexts

a. kidane [?issu [?anâ nafot?i ?iy-?i] ?il-u] yi-?ammin
‘Kidane, believes that he, is smart’

‘Hiwet, believes that she, is smart’

The pronouns ?issu and ?issa in (46a) and (46b) respectively are in exactly the position we would expect if they were a perspectival argument introduced by ?il-. If the structure of (46) is really such that ?il- is contributing an argument, the matrix verb yi-?ammin in (46a) has the subject kidane, issu is the argument of ?il-, and anâ is the subject of the embedded clause. Further evidence that this configuration really is the structure of (46) is that this combination of nominals at the left edge of the sentences in (46) is not possible in a truncated ?il- clause, where there is no matrix verb to license the higher subject, as in (47a).
Removing one of the nominals repairs the sentence (47b).

(47) (46) is ungrammatical without an embedding verb

   INT: ‘Kidane says that he is smart’

b. [kidane [?anā nāfo'i ?iy-ā] ?il-u]
   Kidane(M) 1.SG smart.M COP-1.SG ?il-3.M.SG
   ‘Kidane says that he is smart’

The contrast between (46) and (47) constitutes evidence in favor of a theory in which ?il- is always introducing a perspective holder. Another piece of evidence in support of this claim is that there is apparently a possibility of having a perspective holder nominal embedded under an attitude predicate without being coreferent with the subject of the higher clause, as in (48).

(48) Argument of ?il- need not refer to matrix subject

Almaz(F) Mahari(M) see-1.SG-3.F.SG ?il-3.M.SG F-say
‘Almaz says Mahari thinks he saw her’

Here, the matrix verb tiḥasib agrees with the highest DP almaz, but ?il- agrees with mahari, strongly suggesting that that ?il- and the main verb are associated with two distinct argument positions.

Finally, evidence from binding suggests that, even in cases where the perspectival argument is not overtly present, there is still a pro argument in the same position. Recall that the truncated ?il- clauses differed from the kim-zi- clauses in allowing binding of reflexive subjects:
The availability of subject reflexive pronouns is expected given the analysis of truncated ?il- sentences presented in the previous section, as there is no intervening clause boundary to prevent binding.

Full ?il- constructions also allow binding of subject reflexive pronouns, regardless of the presence or absence of an overt pronoun like the ones in (46), as shown in (51).

For the variant of (51) with an overt pronoun as the argument of ?il-, it follows straightforwardly on my account that binding of a reflexive pronoun in subject position is possible in this configuration. If the argument of ?il- is pro the same logic applies, but in this case the antecedent is covert, giving rise to the erroneous appearance of cross-clausal binding.

Given this evidence that ?il- projects an argument even when embedded, full ?il- constructions can be understood as simply a case of ?il- introducing a covert argument, giving a sentence like (52) the structure in (53):

(49)  $\times$ binding into k1m-zi- clauses

birhane, $[CP \text{ pro}_{i}^{*}ba\text{ʕal-}u_{i} n\ddot{a}ti m\ddot{u}vi k1m-zi-\ddot{f}atiw-u-o]$


täzarāb-u

say-3.M.SG

‘Birhane, said he, likes the movie’

(50)  $\checkmark$ binding into ?il- clauses

$[CP \text{ birhane}_{i} \text{ baʕal-u}_{i}/^{*}\text{pro}_{i} n\ddot{a}ti m\ddot{u}vi f\ddot{atiw-u-o} ?il-u]$


‘Birhane, said that he, $i/\ast j$ likes the movie’

(51)  embedded subject anaphor bound by the argument of ?il-

kidane $[\text{?issu}_{i}/\text{pro}_{i} ba\text{ʕal-u}_{i} n\ddot{a}foʔ ?iy-\ddot{a} \text{?il-u}]$


yi-ʔammin

M-believe

‘Kidane believes that he is smart’

(52)  embedded subject anaphor bound by the argument of ?il-

kidane $[\text{?issu}_{i}/\text{pro}_{i} ba\text{ʕal-u}_{i} n\ddot{a}foʔ ?iy-\ddot{a} \text{?il-u}]$


yi-ʔammin

M-believe

‘Kidane believes that he is smart’

(53)  embedded subject anaphor bound by the argument of ?il-

kidane $[\text{?issu}_{i}/\text{pro}_{i} ba\text{ʕal-u}_{i} n\ddot{a}foʔ ?iy-\ddot{a} \text{?il-u}]$


yi-ʔammin

M-believe

‘Kidane believes that he is smart’

For the variant of (51) with an overt pronoun as the argument of ?il-, it follows straightforwardly on my account that binding of a reflexive pronoun in subject position is possible in this configuration. If the argument of ?il- is pro the same logic applies, but in this case the antecedent is covert, giving rise to the erroneous appearance of cross-clausal binding.

Given this evidence that ?il- projects an argument even when embedded, full ?il- constructions can be understood as simply a case of ?il- introducing a covert argument, giving a sentence like (52) the structure in (53):
(52) naomi [CP pro [aman siga sarih-u] ʔil-a] ti-ḥasib
Naomi(F) pro Aman(M) meat cook-3.M.SG ʔil-3.F.SG F-think
‘Naomi thinks that Aman cooked meat’

(53) The structure of full ʔil- constructions

\[
\begin{array}{c}
\text{CP} \\
\text{TP} \\
\text{DP} \\
\text{naomi} \\
\text{Naomi(F)} \\
\text{VP} \\
\text{T'} \\
\text{T^0} \\
\text{CP} \\
\text{V} \\
\text{ti-ḥasib} \\
\text{F-think} \\
\text{pro [aman siga sarih-u] ʔil-a} \\
\text{pro(F) Aman(M) meat cook-3.M’S.G COMP-3.F.S.G}
\end{array}
\]

2.4.5 Perspectival complementizers cross-linguistically

Section 1.2 recognized that the data analyzed for Tigrinya in the previous section closely resembles a similar construction in Ewe, repeated in (54).

(54) Ewe

a. john bù [be yè nya nu]  
John(M) think COMP LOG know thing
‘John thinks that he is smart’

b. john [be yè nya nu]  
John(M) COMP LOG know thing
‘John says that he is smart’

In order to apply the analysis proposed for Tigrinya directly to Ewe, it must be shown that Ewe sentences of the type in (54b) are also monoclausal.

\[\text{Abigail Bimpeh, p.c.}\]
A version of this question has been taken up by Clements (1975), who notes that the relevant complementizer differs from verbs in Ewe with respect to inflectional properties. On such property is that pronominal subject clitics, often fused with tense marking, frequently attach to verbs in Ewe. An example of this is in (55), where ma is a combination first person clitic and future tense marker.

(55) **Ewe be does not allow clitics**

a. **ma-gbl** be kofi le afe me
   PRO/T-say that Kofi(M) be home in
   ‘I will say that Kofi is at home’

b. *ma-be kofi le afe me
   PRO/T-that Kofi(M) be home in
   INT: ‘I will say that Kofi is at home’

As illustrated by the ungrammaticality of (55b), this cliticization is not possible for be. Clements (1975) observes that preverbs, which express adverb-like meanings, cannot be used with be, though they do attach to verbs generally:

(56) **Ewe be does not allow preverbs**

a. **me-ga-gbl** be kofi le afe me
   PRO-P-say that Kofi(M) be home in
   ‘I said again that Kofi is at home’

b. *me-ga-be kofi le afe me
   PRO-P-that Kofi(M) be home in
   INT: ‘I said again that Kofi is at home’

Finally, Clements (1975) points out that aspectual reduplication is possible with typical verbs but prohibited with be.

(57) **Ewe be does not allow reduplication**

a. me **gbɔ-gblɔ-m** be kofi le afe me
   PRO RED-say-A that Kofi(M) be home at
   ‘I am saying that Kofi is at home’
b. *me be-be-m kofi le afe me
   PRO RED-that-A Kofi(M) be home at
   INT: ‘I am saying that Kofi is at home’

The examples in (55-57) demonstrate that attitude reports without a lexical attitude predicate are defective with respect to morphological processes like hosting subject clitics, aspectual morphology, and verbal modifiers. This difference could be attributed to syntax, i.e. an absence of the positions where aspectual or verbal modifiers would originate, or it could be due to a morphological property of be, for example it might be the case that be is simply not an element that can host host affixes and clitics. Below, I will show evidence that these Ewe constructions are like the Tigrinya examples examined in this chapter, in that they have a monoclausal structure in spite of the attitude report interpretation. First, however, it is worth noting that Tigrinya ?il- is also morphologically defective. I show this with negation below. I use negation rather than aspect or tense because tense in Tigrinya is not marked on verbs, and aspect is marked on verbs through vocalic templates, which could not straightforwardly be applied to ?il-. Negation, however, is conveyed via a circumfix on the verb, which is not possible with ?il-.

(58) Tigrinya ?il- does not allow negation

a. mahari almaz si?asi?-a ?il-a ?äy-bäli-n
   Mahari(M) Almaz(F) dance-3.F.SG COMP-3.M.SG NEG-say-NEG
   “Mahari didn’t say that Almaz danced”

b. *mahari almaz si?asi?-a ?äy-il-a-n
   Mahari(M) Almaz(F) dance-3.F.SG NEG-COMP-3S-NEG
   INT: “Mahari didn’t say that Almaz danced”

Recall that a major evidence against a biclausal structure of perspectival clauses in Tigrinya was the unacceptability of adverbial modification of the saying event. This is true for Ewe as well: adverbial modification of the saying event is acceptable if a lexical verb is present, but impossible if it is absent.

(59) Ewe be can’t be modified by adverbs
a. john gblœ kaba be yè nya nu
   John(M) say fast that LOG know thing
   ‘John said quickly that he is smart’

b. john (*kaba) be (*kaba) yè nya nu
   John(M) (*fast) that (*fast) LOG know thing
   INT: ‘John said quickly that he is smart’

Malayalam also has a construction that uses a matrix complementizer to convey reported speech. As with Ewe and Tigrinya, adverbial modification is also impossible for the Malayalam matrix complementizer construction, as shown in (60b), (60c):

(60) Malayalam *enu can’t be modified by adverbs
a. john [prime minister varunu enn] veegam paranju
   John(M) prime minister coming COMP quickly said
   “John quickly said that the prime minister is coming”

b. *prime minister varunu enn] veegam
   prime minister coming COMP quickly
   INT: “Someone said quickly that the Prime Minister is coming”

c. *veegam [prime minister varunu enn]
   quickly prime minister coming COMP
   INT: “Someone said quickly that the prime minister is coming”

Likewise, wh- questions in Malayalam can only target the saying event if there is a real verb of saying present, as in (61a).

(61) Malayalam wh- questions
a. prime minister eppol varunu?
   Prime Minister when coming?
   “When is the prime minister coming?”

b. eppol aane john [prime minister varunu enn] parajathe
   when COP John Prime Minister coming COMP say-NOMNL
   “When did John say that the Prime Minister is coming?” (= time of saying)
c. prime minister eppol varunnu ennu annu john paranjathe?
Prime Minister when coming COMP COP John said-NOMNL
“When did John say that the Prime Minister is coming?” (= time of coming)

When only the matrix clause complementizer is present, there is no way to target the saying event with the wh-question, as shown in (62).

(62) Wh-questions can’t target Malayalam ennu

a. prime minister eppol varunnu ennu?
Prime Minister when coming COMP?
‘When did someone say the prime minister is coming?’ (= time of coming)

b. *prime minister varunnu eppol ennu?
Prime minister coming when COMP
INT: ‘When did someone say that the prime minister is coming?’ (= time of saying)

c. *prime minister varunnu ennu eppol?
Prime Minister coming COMP when?
INT: ‘When did someone say that the prime minister is coming? (= time of saying)

d. *eppol aane prime minister varrunu ennu?
when COP Prime Minister coming C?
INT: “When did someone say that the prime minister is coming?” (= time of saying)

The fact that, in Malayalam, wh-questions and adverbial modification cannot target the attitude event suggests that there is no attitude verb at all in these constructions.

For all three languages under consideration, then, syntactic evidence shows that the speech report constructions that use a complementizer but lack an embedding attitude predicate are not covertly biclausal. The elements associated with the speech report meaning must then be contained somewhere in the periphery of the clause, rather than in an embedding clause.
2.4.6  Evidence against a complementizer/reportative marker homophony

A possible objection that could be raised, especially regarding the data from Malayalam, is that the matrix clause complementizer is not truly a complementizer at all, but instead is a kind of reportative marker. A factor that greatly complicates this suggestion is that there is no unified understanding of reportative markers as a syntactic category. Taking into account theories of the extended left periphery starting with Rizzi (1997), it is also not exactly clear what syntactic position a complementizer occupies in the clause. These questions will be addressed in slightly more detail in section 2.5, but for the moment, the crucial aspect of the objection can be reframed as follows: why should we think that the elements that occur in matrix clause speech reports in Tigrinya, Malayalam, and Ewe have any relation to the homophonous elements occurring under attitude predicates in those languages? What prevents us from analyzing these morphemes as completely unrelated elements that happen to have the same phonological form?

This can be addressed most clearly in Tigrinya and Ewe. In Tigrinya, indexical shift occurs uniquely under ʔil-, regardless of whether there is an embedding predicate. In attitude reports that lack ʔil-, for example (63a), only the unshifted interpretation of the indexical is possible.

(63)  Indexical shift is only under ʔil-

a. hiwät ʔissa nātī māʃaf kim-zi-ńbāb-āt ti-ḥasib
   Hiwet(F) 3.F.SG DET book  COMP-REL-read-3.F.SG  F-think
   ‘Hiwat believes that she read the book’

b. hiwät [ʔanā nātī māʃaf ʔanbīb-ā] ʔil-a (ti-ḥasib)
   Hiwet(F) [1.SG DET book  read-1.SG COMP-3.F.SG (F.SG-think)
   Hiwat, thinks/said that I read the book. (shifted)

If ʔil- in (63b) is the same morpheme regardless of whether there is an attitude predicate in the structure, then it follows straightforwardly that both variants of (63b) create a new context for the evaluation of indexicals. Either ʔil- is directly inducing indexical shift, or ʔil- is selecting for an element that induces indexical shift. However, if we analyze the two variants of (63b) as containing two different morphemes that both have the pronunciation
?il-, then it would be surprising that both versions of this ?il- element give rise to a shifted interpretation of indexicals within their scope.

A similar situation arises for Ewe. The Ewe logophor yé occurs exclusively under be, regardless of whether there is an attitude predicate above be. (64a) shows the verb se, “hear”, with a complement that lacks be, while (64b) shows the same verb with a complement that contains be. Only (64b) allows for a logophoric pronoun within its scope.

(64) Complements of perception verbs in Ewe

a. kofi, se koku wò-m e, dzu-m  
   Kofi(M) hear Koku PRO-be PRO insult-A  
   ‘Kofi, heard Koku insulting him,’

b. ama, se be yè-xo nunana  
   Ama(F) heard that LOG-receive gift  
   ‘Ama, heard that she, received a gift’

An analysis that proposes that there are two be morphemes not only has to posit that the fact that both main clause be and embedded be license logophors is a coincidence, it also needs to consider the fact that there seems to be a cross-linguistic pattern of complementizers with matrix speech report uses to be a coincidence.

The more parsimonious story for Tigrinya and Ewe, then, is one that treats both uses of this morpheme as instances of the same element.

For Malayalam, without the cross-linguistic data it might be reasonable to posit that the -ennu that occurs in matrix clauses is simply a different morpheme than the one that occurs under attitude predicates in embedded clauses. However, given the general trend that complementizers in other languages can occur in matrix clauses to induce a speech report meaning, proposing that the matrix use of -ennu in Malayalam is completely unrelated seems to miss a crucial generalization. Further, an accidental homophony story for Malayalam would bring us no closer to an analysis for the reportative marker ennu.

Based on this logic, I continue to maintain the assumption that the most parsimonious analysis is one that unifies complementizers with their main clause counterparts.
2.5 Discourse projections in syntactic structure

This section presents an overview of the current literature on perspective in syntax, and situates the Tigrinya data within this literature. I argue that ?il- constructions support the general premise that some types of clauses need to have access to an attitude-holder argument, which is compatible with a most of the proposals available. I also point out a few commonalities between certain perspectival phenomena and the ?il- construction — specifically, the requirement that the author argument be sentient and range of verbs that embedded ?il- clauses, which conforms with a hierarchy familiar from other point-of-view phenomena. Finally, I observe a point of dissonance between the data and most theories of perspectival syntax: the optionality of the attitude argument.

2.5.1 Background: pragmatic projections in syntactic structure

It is difficult to define exactly what constitutes perspectival phenomena in syntax, but as a working definition for the purposes of this literature review, I assume that it encompasses any morphosyntactic process that requires (or is analyzed as requiring) access to information about the author, the addressee, or the person whose beliefs are being conveyed. The most canonical instance of this is ostensibly unbound uses of reflexive pronouns (Ross (1970); Sundaresan (2013); Charnavel and Zlogar (2015), a.o.), logophors (Koopman and Sportiche, 1989; Speas and Tenny, 2003), allocutive agreement (Zu, 2015, 2018; Oyharçabal, 1993), conjunct/disjunct marking Zu (2018). Other elements that sometimes fall within this umbrella are indexical shift (Tenny and Speas, 2004; Sundaresan, 2013), evidential marking (Tenny and Speas, 2004; Bhadra, 2017), verbs like “come” that refer to a point of origin (Speas and Tenny, 2003), speech act-modifying adverbs like honestly and frankly (Woods, 2014), certain types of honorifics (Miyagawa, 2012), among others. For nearly all of these phenomena, their status as syntactic, rather than pragmatic or semantic, is not completely settled. For example, perspectival anaphors are syntactic on accounts like the ones listed above, which involve binding by a covert attitude argument or operator, but are pragmatic on analyses like Sells (1987) and Reinhart and Reuland (1993). On these accounts, the syntax can allow either a reflexive or regular pronoun in certain syn-
tactic contexts, but depending on the pragmatic context, one or the other may be preferred.

A variety of syntactic proposals exist to account for the types of data listed above. Among these syntactic proposals, the vast majority share the assumption that information about perspective holders or speech act participants are located in the clause periphery. (though see Charnavel and Zlogar (2015); Charnavel and Sportiche (2016); Charnavel (2019b) for an analysis that locates the perspective holder at phase heads).

The idea that syntax contains information about the speech context dates back to the Performative Hypothesis of Ross (1970); the proposal was that at deep structure, all sentences contain information about their illocutionary force in the form of a performative verb that is deleted over the course of the derivation. A more recent proposal in Cinque (1999) argues that the highest region of the clause contains projections that serve as attachment sites for discourse-oriented adverbs; the relevant projections are in (65).

\[(65) \quad \text{[Speech Act Mood [Evaluative Mood [Evidential Mood [Epistemological Mode ...]]]]]}\]

Subsequent work had used these projections, as well as other, conceptually related ones, to account for a family of phenomena that involve morphosyntactic processes that appear to be sensitive to information about the speech context. The majority of recent work in this area takes Speas and Tenny (2003) as its point of departure. Speas and Tenny (2003) aims to motivate a highly constrained number of discourse-pragmatic projections based on theoretical concerns (specifically, defining the relevant projections and arguments configurationally in the tradition of Hale and Keyser (1998), and also based on typological considerations. The structure the propose is given in (66). To avoid confusion, when referring to the syntactic positions SPEAKER and HEARER (i.e. the higher specifier and complement of saP, respectively), I will use small caps, and the non-small caps terms speaker and hearer will refer to the individual in the actual world uttering the sentence and their addressee.
Under their analysis, the saP is responsible for clause-typing (declarative, interrogative, imperative etc), and contains the SPEAKER and ADDRESSEE. They assume that the saP occurs only in root clauses, but this assumption is not universal – for example, Bhadra (2017) proposes that every finite clause has a SPEAKER and ADDRESSEE.

Speas and Tenny (2003) propose that EvalP is embeddable under attitude predicates and introduces an argument, SEAT OF KNOWLEDGE that can be identified with the speaker, the addressee, or another salient individual. The SEAT OF KNOWLEDGE role is used in other works under several different names, and in this work it is comparable to the author argument.

While I remain agnostic as to the presence of a SPEAKER and ADDRESSEE argument and the cartographic structure proposed in Cinque (1999) and Speas and Tenny (2003), there are commonalities between the distribution and interpretation of the attitude-holder argument in Tigrinya and other phenomena that has been associated with the SEAT OF KNOWLEDGE and equivalent roles, which suggest that the overt perspective holders discussed in this work could be instantiations of this position, and which I discuss in the next section.
2.5.2 The author argument and perspective-sensitive phenomena

The first expectation laid out by the analysis in Speas and Tenny (2003) and other works is that the argument of ?il- should be the “perspectival center” of the proposition. Tigrinya ?il-constructions do convey a belief of the attitude-holder argument. This dissertation glosses sentences with ?il- a biclausal attitude report with the verb say, and in most situations native speakers of Tigrinya infer the existence of a speech event, but in contexts where it is clear that there is no speech event, ?il- sentences are still possible, as in (67).

(67) Context: You bake a cake for Almaz, who clearly finds it disgusting, but is too polite to say so. She eats the entire thing without complaining. Later, you report to a friend:

a. almaz ?iti cake hema ?ij-u ?il-a
   Almaz(F) DET cake gross COP-3.M.SG ?il-3.F.SG
   ‘Almaz thought the cake was gross’

This suggests that the speech component of ?il- is not a core part of the meaning, but rather is inferred by the listener. Regardless of the strong tendency to interpret ?il-constructions as speech reports in absence of evidence to the contrary, the argument introduced by ?il- clearly qualifies as a perspective holder, as predicted by previous work.

A consequence of requiring their SEAT OF KNOWLEDGE argument to be occupied by an individual whose holds a point-of-view on the proposition is that, according to Speas and Tenny (2003), the argument must necessarily sentient, and hence able to hold a belief. This is a position that had been widely adopted, and is especially evident for theories of perspective-based reflexive binding, which require sentient antecedents (Sundaresan (2013); Charnavel and Zlogar (2015)). If the argument of ?il- were equivalent to the covert antecedent arguments in those and other works, it should also be subject to the same restriction. (68) shows that this is the case; the argument of ?il- must be sentient.
Arguments of $ʔil$- must be sentient

a. #'ʔiti radio lomi maj ka-harimij-u ʔil-u (tāzārābu)  
   #“The radio said it will rain today”

b. kidane lomi maj ka-harimij-u ʔil-u (tāzārābu)  
   Kidane(M) today water FUT-fall-3.M.SG ʔil-3.M.SG(say)  
   ‘Kidane said it will rain today’

Notice that, in each sentence, the judgment holds regardless of whether there is a matrix verb embedding the $ʔil$- clause. In the versions of these sentences without an embedded verb, the way that this prediction is borne out is straightforward, where the non-sentient argument is clearly occupying the specifier of $ʔil$-, as in (69).

(69) #'ʔiti radio lomi maj ka-harimiy-u ʔil-u  
    “The radio said it will rain today”

In the cases like (70), where there is an embedded subject, the argument of $ʔil$- is actually pro.

(70) #'ʔiti radio [pro lomi maj ka-harimiy-u ʔil-u] tāzārābu  
    #“The radio said it will rain today”

Here the oddness of (70) could either be due to a sectional restriction imposed by the verb, or a selectional restriction imposed by $ʔil$-. This particular verb can also take complement clauses without $ʔil$-, as in (71), and in such cases, non-sentient subjects are fine.

(71)ʔiti radio lomi maj kim-zi-harrām-u tāzārābu  
    DET radio today water COMP-REL-fall-3.M.SG say  
    “The radio said it will rain today”

The fact that (71) is not odd suggests that the animacy requirement really is about the argument of $ʔil$-, and not a requirement of the verb. Recall from earlier that speakers will sometimes accept sentences where the argument of the embedding verb and the argument
of ?il- are non-co referential. On such a reading, the versions of (68a,c) with an embedding verb should be grammatical (on a reading where pro refers to some other salient individual), but it remains to be seen if this prediction is borne out.

Another prediction about clauses with an attitude-holder argument is that, if their distribution is limited, it conforms to the implicational hierarchy in (72), proposed by Culy (1994).

\[(72) \text{SPEECH} \to \text{THOUGHT} \to \text{KNOWLEDGE} \to \text{PERCEPTION}\]

The observation in Culy (1994) is that this implicational hierarchy predicts which predicates allow logophoric complements cross-linguistically. This hierarchy is obeyed in languages that show indexical shift as well, as is clearly documented in Deal (2017), Sundaresan (2013).

If the attitude-holder argument in Tigrinya ?il- clauses is an overt version of the argument involved in logophoricity and indexical shift, it should conform to the same hierarchy. This prediction is also borne out; say, know, think, and believe all allow ?il- complements, but hear does not, as in (73):

\[(73) ?il- \text{ clauses unavailable for perception verbs }\]

a. hiwät [kab sāraḥ kim-zi-wāṣuwa] sāmiʔ-a
   Hiwet(F) from work COMP-REL-fired
   ‘Hiwet heard that she was fired from work’

b. *hiwät kab sāraḥ wāṣiʔ-ā ?il-a/u sāmiʔ-a
   Hiwet(F) from work fired-1.SG ?il-3F.SG/3.M.SG
   INT: ‘Hiwet heard she got fired from work’

Based on the interpretation, sentience requirement, and distribution of ?il- clauses, they resemble perspective-sensitive phenomena cross-linguistically.

### 2.6 Optionality of attitude-holders

The presence of an author argument in monoclausal constructions in Tigrinya supports the general premises adopted in the literature that a.) point-of-view is relevant for syntax and
b.) point-of-view information is located at a particular point in the structure, in the left periphery. According to the theory proposed in [Speas and Tenny (2003)], the PerspP/EvalP projection should always be present in root clauses, as it is selected for by sa0.

At first glance, this is not actually the case in Tigrinya; not all root clauses have an ?il-morpheme, as exemplified in (74).

(74)  ?anâ nâti mâšhaf ?anbib-ä
1.SG DET book read-1.SG
‘I read the book’

One way to save the generalization that all root clauses contain this projection would be to posit a null version of the PerspP head, which would obligatorily introduce a null argument, and be available only in root clauses.

Recall from earlier that the argument of ?il- can bind an anaphor in the subject position. This is true even if the argument of ?il- is null, as in (75b). If a covert argument was present in a sentence like (74), then that covert argument should also be able to bind an anaphor in the subject position. (75a) shows that this is not possible.

(75)  a. ✗ subject anaphors in ?il-less clauses
     *baʕal-ä nâti mâšhaf ?anbib-ä
     self-1.SG DET book read-1.SG
     INTENDED ‘I read the book’

     b. ✓ subject anaphors in ?il- clauses
        pro [baʕal-ä nâti mâšhaf ?anbib-ä] ?il-ä
        pro [self-1.SG DET book read-1.SG] ?il-1.SG
        ‘I said/think I read the book’

This suggests that the PerspP projection is optional in root clauses. In embedded clauses, however, the PerspP projection is obligatory unless the subordinate clause has the morphological realization of a kim-zi- clause. Example (76a) shows that the ?il-morpheme is obligatory in the embedded clause. It is possible to embed a finite clause without the ?il-morpheme, but only if the alternative kim-zi- embedded clause type is used, in which case no attitude holder argument is possible.
2.7 Semantics of perspectival clauses

The previous section has laid out a proposal for the syntax of perspectival clauses, but the semantics of these constructions has yet to be explained. By default, the meaning conveyed by matrix perspectival clauses is one of a speech report, where the speaker in the utterance context need not have any commitment to the truth of the asserted content. Like other attitude reports, the meaning of a matrix clause with a reportative complementizer is that a proposition is true in the worlds compatible with the perspective holder’s beliefs.

In prototypical attitude reports, the relationship between a proposition and an individual is mediated by a verb that takes both as arguments and quantifies over possible worlds. For example, believe might have the following denotation:

\[
\text{believe} = \lambda p \lambda x. \lambda w. \forall w' [\text{Dox}_{x,w}(w') \rightarrow p(w')]
\]
“believe” takes a proposition $p$, and an individual $x$ and asserts that in all worlds that are compatible with what $x$ believes in the actual world, that proposition is true. In such a system, the complementizer is typically vacuous.

The matrix clause attitude reports described in this chapter invert this relationship. The complementizer is associated with the modal quantification interpretation, and the verb itself is not crucial. This section adopts an analysis proposed in Kratzer (2006) to account for these facts by locating the quantificational component of attitude reports in the complementizer.

### 2.7.1 Decomposition of attitude predicates

The point of origin for the proposal in Kratzer (2006) is the observation that many attitude predicates can also take nominal complements, as in (78).

\begin{align}
(78) & \quad a. \quad \text{I believe this story.} \\
& \quad b. \quad \text{He told me those lies.} \\
& \quad c. \quad \text{I am not assuming anything.} \\
& \quad d. \quad \text{I suspected this all along.}
\end{align}

Kratzer (2006) unifies the DP embedding use of attitude predicates with the familiar CP embedding use by assuming that the nominal argument is present in both configurations in (79), but is typically covert in the CP embedding configurations, as in (79a).

\begin{align}
(79) & \quad a. \quad \text{John believes that Orcutt is a spy.} \\
& \quad b. \quad \text{John believes the notion that Orcutt is a spy.}
\end{align}

In this system, attitude predicates, like believe, always take a content nominal as an argument, either overtly as in (79b), or covertly, as in (79a). The denotation of believe in (80) takes only a content nominal, $x$, an event argument, $s$, and asserts that $s$ is an event of believing $x$. 

63
In discussing the standard analysis of attitude predicates, like *believe* in (77), the two crucial arguments of an attitude predicate were a proposition and an attitude holder. The denotation of *believe* in (80) does not take either of these elements as arguments. Further, it does not introduce attitudinal quantification, which was the core meaning of *believe* as described in (77). In the system described in Kratzer (2006), the attitude holder is introduced by a $v^0$ above the verb via neo-Davidsonian event modification. The other two crucial elements of attitude predicates as described in (77) are, in Kratzer (2006), relocated to the complementizer.

This complementizer takes a proposition, $p$, and a content nominal $x$, and asserts that, in all worlds compatible with the content nominal, the proposition is true. An assumption implicit in this model is that a content nominal is the kind of thing that can describe a state of affairs such that possible worlds can be evaluated as being either compatible or incompatible with the content nominal. For example, the meaning of (79b) (as well as (79b)) involves a step that can be paraphrased as “In all worlds compatible with the notion, Ortcutt is a spy”.

Another way that the quantificational mechanism in (81) differs from that of (77), reproduced as (82) below, is the kind of accessability relation that relates the proposition to the attitude holder.

In (82), the worlds where $p$ is asserted to be true are the worlds doxastically accessible to the attitude holder, or in other words, the worlds compatible with what $x$ believes. In (81), the compatibility relation is underspecified, meaning that it is not predetermined by the meaning of *that* what kind of attitude relates the proposition and the content nominal. This underspecification means that the complementizer can be used under any attitude predicate, and the specific kind of attitude will be specified by the attitude predicate. For
example, in (83), the compatibility relation is still the underspecified ‘compatible’, but believe(x)(s) requires that the content nominal x describes an event of believing, so it will turn out to be the case that all the worlds compatible with x will be accessed via the belief relation.

\[
(83) \quad \text{[believe that } \phi ] = \lambda x \lambda s. \text{believe}(x)(s) \land \forall w' \text{[compatible}(x)(w') \rightarrow \phi(w')]
\]

Though this content nominal can be overt (79b), the content nominal can also be composed directly with the verb via Restrict (Chung & Ladusaw 2004), which existentially binds off the content nominal.

The benefit of this analysis over the traditional view of attitude predication for the purposes of this chapter is that it introduces the quantificational component in the complementizer, opening up the possibility of attitude reports independent of attitude verbs. Kratzer (2016) exploits this possibility to account for a kind of speech report construction in German. She notes that “that” clauses in German can induce a reported speech interpretation with unergative verbs, as in (84).

\[
(84) \quad \text{ralph tobte, dass man ihn nicht informiert habe}
\]

Ralth raged that they him not informed have.SUBJ

‘Ralph raged that they hadn’t informed him’

She posits covert ‘say’ operator in the periphery of the clause, which takes the underspecified compatibility relation of the ‘that’ clause and specifies it as an event of saying. This event is further specified as an event of raging by the unergative verb in (84).

2.7.2 Proposal

In order to fit the Kratzerian decomposition of attitude predicates to the data in this chapter, for example (85), I propose a few minor changes.

\[
(85) \quad \text{Tigrinya ?il- clauses}
\]

a. \[hiwät \ ?anä \ näti mäshaf \ ?anbib-ä \ ?il-a] \ ti-ammin
   Hiwet(F) 1.SG.NOM DET book read-1.SG COMP-3.F.SG 3.F.SG-believe
   Hiwet, believes she, read the book.
b. [hiwät ?anä nätí mäshaf ?anbib-ä ?ii-a]  
Hiwet(F) 1.SG DET book read-1.SG COMP-3.F.SG  
‘Hiwat said that she read the book’

The major difference between the Kratzerian complementizer as described in (81) and the one that needs to be posited for data like (85) is that our data requires that the complementizer be able to take an author argument. It is fairly straightforward to add this argument to the definition of the complementizer as formulated in (81). However, I propose an additional change: because the data under discussion in this chapter does not ever involve content nominal arguments, I propose a simplification of the Kratzerian system that connects the proposition to the attitude predicate via an event argument, rather than the content nominal.

(86) \[ \text{that}_{hiwät} = \lambda p \lambda x \lambda s. \text{author}(x)(s) \land \forall w' \in \text{compatible}(s) \rightarrow p(w') \]

In (86), the complementizer first combines with a proposition \( p \), and then an individual \( x \). As with the Kratzerian complementizer, the proposition is evaluated with respect to an underspecified compatibility relation, however in this case, compatibility is with an event argument \( s \), rather than a content nominal. The individual argument, \( x \), is defined as being the author of the attitude event \( s \).

An LF for (87), which lacks an embedding verb, will look like (88).

(87) aman naomi mänbär gäzi?-a ?ii-u  
Aman(M) Naomi(F) chair buy-3.F.SG COMP-3.M.SG  
“Aman said that Naomi bought a chair”

(88) \[ \exists s. \text{Author}(\text{Aman})(s) \land \forall w' \in \text{Compatible}(s) \rightarrow \text{Naomi bought a chair}(w') \]

The LF in (88) says that there was some event that Aman was the author of, and in all the worlds compatible with that event, Naomi bought a chair.

Examples with an embedding verb contain embedded versions of the LF in (88). For example, (89) has the LF in (90).
Aman said that Naomi bought a chair.

\[(90)\] \(\exists s.\text{Agent(Aman)}(s) \land \text{say}(s) \land \text{Author(Aman)}(s) \land \forall w' \in \text{Compatible}(s) \rightarrow \text{Naomi bought a chair}(w')\]

\(\exists s\) says that there is some event, \(s\), which Aman was the agent of, and which was an event of saying, and in all worlds compatible with this saying event, Naomi bought a chair. \(\exists s\) also asserts that Aman is the author of the saying event, which is redundant in the case of \(\exists s\), but necessary for \(\forall w'\).

For Tigrinya, this is actual a welcome feature of the analysis. Recall that ?il- clauses embedded under verbs still allow overt author arguments:

\[(91)\]

   'Kidane believes that he is smart'

   INTENDED: 'Kidane says that he is smart'

c. [kidane [?anā nāfoũ ?iy-ā] ?il-u]
   Kidane(M) 1.SG smart.M COP-1.SG ?il-3.M.SG
   'Kidane says that he is smart'

Having two distinct argument positions is unproblematic on the analysis in \(\exists s\). Recall that, for examples like \(\text{aman naomi manbãr gãzʔi-a ?il-u tãzarib-u}\), the author argument is present covertly as pro. The semantics in \(\exists s\) does not impose coreference between the author of the proposition and the agent of the speech event, but world knowledge tells us that the agent of an attitude event is also the individual whose attitude is being expressed, which enforces coreference between the author and attitude holder.

The structure of \(\text{aman naomi manbãr gãzʔi-a ?il-u tãzarib-u}\) is in \(\text{Kidane(M) 3.M.SG 1.SG smart.M COP-1.SG ?il-3.M.SG}\).
Using a modified version of the decompositional approach to attitude predicates proposed in Kratzer (2006), both the matrix and the embedded use of reportative complementizers can be analyzed in a uniform way. However, there is a puzzle that remains unresolved: recall that Kratzer (2006) used her analysis of complementizers to account for data like (93).

(93) ralph tobte, dass man ihn nicht informiert habe  
Ralph raged that they him not informed have.SUBJ  
‘Ralph raged that they hadn’t informed him’

In doing so, she needed a mechanism that would force the underspecified compatibility relation to be interpreted as a speech report. This is a problem shared by the analysis presented for reportative complementizers above, where there is a similar lack of a matrix attitude report.

One possible solution to adopt would be the one that she suggests, in which a “say” operator is optionally present in the left periphery of the clause. Implementing this solution would capture the general pattern of the data, though recall that in Tigrinya, contextual factors can force an interpretation of ?il- clauses which lacks a speech event.
A second solution is to posit a pragmatic principle that by default interprets an under-specified attitude event as one of speech. The logic behind such a principle is that typically, if we know what propositions someone is committed to, we gather this knowledge via something they have said to us.

Regardless of the specific analysis, the fact that matrix clause complementizers are interpreted as a speech report, rather than a report of some other kind of attitude, adds to a body of evidence that speech reports have a unique status in grammar. Besides being the default interpretation of a matrix clause complementizer, speech reports are most likely to embed logophoric phenomena and indexical shift. Speech verbs are also more likely to grammaticalize into complementizers, as noted in 2.1.

2.7.3 Reportative complementizers without author arguments

In addition to the Tigrinya-like structures, which contain either overt or covert pronominal author arguments of the complementizer, recall that there are languages like Malayalam, which also employ a complementizer in a matrix clause to convey a speech report, but do not include an author argument. These constructions can be analyzed as containing the same reportative complementizer, but with existential closure over the author argument.

(94) a. prime minister varunnu ennυ prime minister coming COMP

“Someone said the prime minister is coming”

b. $\exists x \exists s. Author(x)(s) \land \forall c' \in Compatible_s \rightarrow$ the Prime minister is coming$(c')$

Embedding this structure under a matrix attitude verb also gives rise to the correct interpretation, although in a somewhat roundabout way: the author argument is existentially closed over before combining with the attitude verb, which subsequently takes an agent argument. The resulting interpretation is one in which there exists an event which is an attitude event of the type specified by the lexical verb (here, saying), which John is the
agent of, and this is an event where the proposition is attributed to some author. Given that this is all one event, the agent and the author are interpreted as being the same individual.

(95) a. prime minister varunnu ennun john paranju
prime minister coming COMP John(M) say
“John said the prime minister is coming”

∃s∃ x.say(s)∧Agent(j)(s)∧Author(x)(s)∧∀c’∈Compatible_s→
the Prime minister is coming(c’)

b. λs∃ x.Author(x)(s)∧∀c’∈ Compatible_s→λpλs.say(s)∧Agent(j)(s)∧p(s)
the Prime minister is coming(c’)

prime minister varunnu ennun
Prime Minister coming

∆Pλxλs.Author(x)(s)∧∀c’∈ Compatible_s→P(c’)

John λxλpλs.say(s)
∧Agent(x)(s)∧p(s)

λpλs.say(s)∧p(s)
∧λxλs.Agent(x)(s)
t3 paranju
λs.say(s)

2.7.4 Reportative Evidentiality

The constructions under discussion in this chapter, especially matrix perspectival clauses that lack author arguments, as in (104) bear a resemblance to evidential marking. This section briefly explores the idea that there might be a connection between matrix perspectival clauses and reportative evidentiality in particular.

Evidential marking systems make use of some kind of morphosyntactic indicator to convey the type of evidence that the speaker has for the asserted proposition. The realization of these morphosyntactic indicators are extremely heterogeneous; Aikhenvald (2004) notes, “...there are hardly any morphological limitations on how evidentials can be expressed”. Common realizations of evidentials are second-position clitics, clitics that attach to verbs, focus associating clitics, auxiliary choice, verbal inflection, and markers derived from verbs meaning “say” through desubordination. The syntax of evidentiality is not well understood, except in so far as it has been identified with an evidential projection in the extended left-periphery as proposed by Rizzi (1997); Cinque (1999) and further developed
by Tenny (2006); Speas and Tenny (2003) and others. These syntactic works necessarily require a fair degree of abstraction, as the evidential morphemes typically are not realized in a position that could plausibly be identified with the evidential projection itself, though interpretationally, they do typically take scope over the entire proposition. For example, in (96), the direct evidential -mi associates with a focused element, but is interpreted as describing the evidential basis for the entire proposition:

(96) Reportative marking in Quechua [Lefebvre and Muysken (1988)]

    pidru kunan-mi wasi-ta tuwa-sha-n  
Pedro now-DIR.EV house-ACC build-PROG-3.SG

‘It is now that Pedro is building the house.’

Semantic work on evidentiality is more robust, but there is no consensus on how to analyze evidentials. Leading proposals say that they are either modal elements (Matthewson et al. (2007)), or speech act modifiers (Faller (2002)).

Given the wide variation of properties associated with evidentiality, especially in regards to their syntax, it is unclear if there is anything to be gained from identifying matrix perspectival clauses with evidential marking as a general phenomenon, or whether evidentiality is a unified phenomenon at all. Looking specifically at reportative evidentials, however, there are two properties that seem to consistently hold, which are also true matrix perspectival clauses. The first property is that, unlike other types of evidentials, reportative evidential marking does not require speaker commitment to the main proposition of the utterance. The second property is that reportative evidentials are often scopally ambiguous when combined with a question operator, yielding either a report of a question or a question about a report. Because evidentials frequently occur in positions that do not correspond to their interpretation (as in (96)), this ambiguity has been considered a kind of pragmatic underspecification in Faller (2002), but in Tigrinya and Malayalam, the two scopal possibilities correspond to two different morpheme orders.

The first property, referred to as reportative exceptionality in AnderBois (2014), is seemingly at odds with the premise of evidentiality. AnderBois (2014) frames the “baseline conception” of the meaning of a declarative sentence with propositional content \( p \) marked by an evidential morpheme as containing two parts: an assertion of \( p \) on the part of the
speaker, and a specification of the evidence that the speaker has for \( p \). The speakers commitment to \( p \) may be strengthened or weakened by the presence of the evidential, but the propositional content must be at least compatible with what the speaker believes to be true. If the speaker explicitly denies that they believe the proposition to be true, the result is anomalous, as in (97).

(97) Speaker commitment with direct evidentials in Cuzco Quechua

- \text{a. para-sha-n-mi}
- \text{rain-PROG-3-MI}
- \text{p = ‘It is raining’}
- \text{EV = the speaker sees that p}
- \text{b. #para-sha-n-mi, ichaqa mana crei-ni-chu}
- \text{rain-PROG-3-mi but not believe-1-NEG}
- \text{# ‘It is raining, but I don’t believe it’}

However, a proposition contained within a reportative-marked sentence does not require any speaker commitment:

(98) No speaker commitment with reportative evidentials

- \text{para-sha-n-si, ichaqa mana crei-ni-chu}
- \text{rain-PROG-3-REP but not believe-1-NEG}
- \text{p = ‘It is raining, but I don’t believe it’}
- \text{EV = speaker was told that it is raining}

This property also holds of constructions with matrix perspectival complementizers. For example, in Tigrinya, uttering (99b) immediately after (99a) does not give rise to a contradictory meaning.

(99) a. mahari almaz bi nābiri ni siraḥ kād-a ?i1-u
- Mahari(M) Almaz(F) PREP tiger DOM work go-3F.SG COMP-3M.SG
- ‘Mahari said that Almaz rides a tiger to work’

b. ... ḥasot ?iy-u
- ... false COP-3M.SG
- ‘It’s not true’
The sentences in (99) spoken together convey that Mahari said that Almaz rides a tiger to work, and commits the speaker to the proposition that Mahari said that Almaz rides a tiger to work, but does not commit the speaker to the proposition that Almaz actually does ride a tiger to work, which the speaker is explicitly denying in (99b).

Malayalam sentences with matrix clause perspectival complementizers also fail to commit the speaker to propositional content of the reported speech.

(100) a. enne joolliyil ninnu piričuvidaan pook-uka aamə ennu
     1.ACC job-LOC from let-go-INFL go-INFL Cop Comp
     ‘someone said they are going to let me go from the job’

b. ... pakshe enikku aŋgane ŋooonuŋuŋ-illa
   ... but 1.DAT so fall-PROG-NEG
   ‘...but I don’t feel like that’s true’

The reported speech interpretation, combined with the lack of speaker commitment, makes reportative evidentials look similar to the interpretation that arises in matrix perspectival complementizer constructions.

An additional similarity between reportative evidentiality and matrix perspectival complementizer is the ambiguity that arises in the presence of a question operator. This can be seen in (101), which is either interpreted as a report of a question or a question about a report that has been made.

(101) Ambiguity in questions with reportative evidentials in Cuzco Quechua

[Faller (2002)]

pit-ta-s inés-qə watuku-squ?
who-ACC-REP Inés-TOP visit-1.FUT
‘Who did Inés visit?’

(i) speaker indicates that someone else is asking

(ii) speaker expects hearer to have reportative evidence for his or her answer

Schwager (2010) analyzes Tagalog daw as a reportative evidential and notes that the same pattern emerges. She explains that (102) is ambiguous:
Ambiguity in questions with reportative evidentials in Tagalog

Schwager (2010)

bakit daw hindi ko siya tinawagan
why REP not me she call.DIR-PERF
‘She asked why I didn’t call her’

‘Why did she say I didn’t call her?’

The same ambiguity arises in matrix clauses with perspectival complementizers in Tigrinya, but the two readings differ in the order between the complementizer and the question particle do.

Ambiguity in questions with perspectival complementizers in Tigrinya

a. almaz mahari fiori qāzi?-u ?il-a do
Almaz(F) Mahari(M) flower buy-3M.SG COMP-3F.SG Q
“According to what Almaz has said, did Mahari buy flowers?”

b. almaz mahari fiori qāzi?-u do ?il-a
Almaz(F) Mahari(M) flowers buy-3M.SG Q COMP-3F.SG
“Almaz asked if Mahari bought flowers”

In yes-no questions in Tigrinya, the morpheme order mirrors the semantic scope. This is also the case in Malayalam:

Ambiguity in questions with perspectival complementizers in Tigrinya

a. p. m. varunn-oo ennu
P. M. coming-Q COMP
‘Someone asked if the Prime Minister is coming’

b. p. m. varunnu enn-oo
P. M. coming COMP-Q
‘Did you hear that the prime minister is coming?’

Interestingly, Malayalam allows multiple instances of the complementizer or the question marker in these configurations:
(105) a. prime minister varun-oo prime minister coming-Q
    “Is the prime minister coming?”

    b. prime minister varun-oo enn-oo prime minister coming-Q COMP
    “Someone asked if the prime minister is coming”

    c. prime minister varun-oo enn-oo prime minister coming-Q COMP-Q
    “Did somebody ask if the prime minister is coming?”

(106) a. prime minister varunnu enn-oo prime minister coming COMP
    “Someone said that the prime minister is coming”

    b. prime minister varunnu enn-oo prime minister coming COMP-Q
    “Did someone say that the prime minister is coming?”

    c. prime minister varunnu enn-oo enn-oo prime minister coming COMP-Q COMP
    “Somebody is asking someone said that the prime minister is coming.”

There are a few reasons that the evidence from Tigrinya and Malayalam, showing that semantic scope tracks morphological scope with respect to the complementizer and question marker, is important. First, this is another reason to think that the perspectival marking might be closely related to reportative marking. Second, the claim regarding these constructions in Faller (2002) is that the ambiguity in (101) is pragmatic, arising from an ambiguity of ordering of speech act operators. The Tigrinya and Malayalam data above complicates this claim by showing that the ambiguity is clearly part of syntax. If Faller (2002) wants to maintain a speech act operator analysis in light of this data, speech act operators would have to be syntactic elements.

Finally, work that considers the syntax of evidential marking (Speas and Tenny (2003); Tenny (2006)) often follow Rizzi (1997); Cinque (1999) in assuming that elements in the clause periphery occupy fixed positions. Under such an analysis, evidentials occupy EV-
1DP, while a clause typing head will occupy another position, possibly saP. In order to
derive multiple possible orders, and especially multiple occurrences of question operators
or complementizers, this peripheral region of the clause will need a level of flexibility that
is typically prohibited on these theories.

2.8 Conclusion

This chapter introduced a construction where a complementizer introduces an author argu-
ment and a speech report interpretation, based on evidence from Tigrinya, as well as other
languages. These constructions can occur in matrix or embedded contexts. In Tigrinya,
syntactic evidence from adverbial modification, wh- questions, and reflexive binding sug-
gest that the perspectival complementizer element does actually occupy the periphery of a
clause, rather than introducing a separate matrix clause with a null or elided verbs.

That this perspectival projection occupies the clause periphery is significant because it
constitutes support for a family of proposals that locate some kind of point-of-view argu-
ment in this location. However, unlike these proposals, the Tigrinya data suggests that only
some clauses, those headed by ?il-, have syntactically represented author arguments.

A consequence of this proposal is that the quantificational force of attitude predicates in
Tigrinya should be located in the perspectival complementizer, rather than the attitude pred-
icate itself, as is typically assumed to be the case. This allows the monoclausal sentences
that contain ?il- to be interpreted as attitude reports, although it is non-trivial to derive the
interpretation of truncated ?il- clauses as speech reports, rather than reports of some other
kind of attitude. This analysis could potentially be extended to account for some cases of
reportative evidentiality.
Chapter 3

Indexical Shift

3.1 Overview

In English, the pronoun I always refers to the individual who utters it. Not all languages are English-like in this respect—some languages have constructions where first person pronouns can refer to someone other than the person uttering the sentence. For example, consider the following contrast between the English sentences in (107) and the Tigrinya sentences in (108).

(107) a. I love injera.
   b. Rick says that I love injera.

(108) a. ʔanā ʔiniğiɾa ʔi-fātiw
   l.SG.NOM injera 1.SG-like
   ‘I like injera’
   b. ruth ʔanā ʔiniğiɾa ʔi-fātiw ʔi-l-a
      Ruth(F) l.SG.NOM injera 1.SG-like COMP-3.F.SG
      ‘Ruth says that she likes injera’

In the English examples in (107), the first person pronoun refers to the speaker regardless of whether it occurs in a matrix clause (107a) or a clause embedded under an attitude predicate (107b). By contrast, the Tigrinya sentences in (108) show that the first person
pronoun ?anā refers to the speaker when it occurs in the matrix clause, but when it is used in the kind of complement clause in (108b), ?anā instead must refer to the matrix subject, ruth. The pattern exemplified by the sentence in (108b) is reminiscent of direct quotation in English, (e.g. ‘Ruth says “I am smart”’), but syntactic tests reveal that the embedded clause in (108b) is not an instance of direct quotation (see section 3.4). The quotation-like interpretation of the pronoun in (108b) is exemplary of a phenomena known as indexical shift, and pronouns like ?anā in (108b) are said to be shifted.

Chapter 2 presented a construction that encodes non-speaker points of view in the periphery of certain clauses, based on which I argued that point-of-view is a part of grammar. In an intuitive sense, pronominal systems are inherently tied to some kind of point-of-view, in that they anchor themselves to a particular individual, the speaker, who is first person, and determine other values relative to this individual (i.e. second person is assigned to the addressee). It is non-trivial, however, that the kind of point-of-view that is relevant for pronominal systems has anything to do with the notion of point-of-view that is manifested in certain clause types as introduced in Chapter 1. Take for example Ewe, which is a language that has this mechanism to introduce a perspective holder into a clause, but lacks indexical shift.

(109) Embedded first person pronouns in Ewe

\[
\text{kofi be me-dzo}
\]

Kofi(M) COMP 1.SG-leave

‘Kofi said that I speaker/\ast_i left’

In (109), the proposition “I left” is true according to Kofi, but the only interpretation of the first person pronoun is one where it refers to the speaker in the utterance context. If we only considered Ewe, there would be no reason to think that first person pronouns had anything to do with point-of-view in the sense described, because even these constructions, where the belief being expressed belongs to someone other than the speaker, first person pronouns refer to the speaker and not the perspective holder.

The data from Tigrinya, however, reveals that there is, in fact, a connection between personhood and point-of-view, in that the environment that induces a reorientation of person features is also the environment that introduces a non-speaker point-of-view. Languages
like Ewe indicate that there is not a necessary correlation between being a the author of a proposition and being first person, but based on Tigrinya, it seems that the grammatical infrastructure involved in introducing an author in a clause periphery creates an environment where a reorientation of the person system is possible.

This chapter uses the connection between the point-of-view-introducing mechanism in Chapter 1 and indexical shift to bring clarity to some of the major theoretical questions surrounding indexical shift.

In doing so, I show that Tigrinya provides support for many of the existing proposals regarding indexical shift. Indexicals in Tigrinya obey the \textsc{shift together} and \textsc{no intervening binder} constrains observed by \cite{anand2004}, and indexicals can also move outside of the scope of a shift-inducing operator to yield non-shifty readings, similar to the facts described for Uyghur in \cite{shklovsky2014}.

In addition to providing support for existing mechanisms of indexical shift, data from Tigrinya reveals several surprising morphosyntactic facts. First, Tigrinya allows indexical shift in matrix clauses, contra the assumptions of the existing literature. The possibility of matrix clause indexical shift can be easily captured by the analysis for matrix clause complementizers proposed in the previous chapter.

Second, though Tigrinya does have the kind of optionality in shifting attributed to the position of the indexical relative to the shifting operator, there is an additional constraint on the realization of indexical pronouns, revealing a preference to realize first or second person features whenever possible. Additionally, we observe that in shifty clauses, verbal inflectional morphology can differ in $\phi$-features from the argument that the morphology is coindexing. These observations, taken together, suggest that person features can be assigned to pronouns throughout the course of the derivation, overturning the prevailing view that holds that pronouns enter the derivation with valued person features.

3.1.1 What is an indexical?

This chapter approaches indexicality through a very narrow lens – below, I present an analysis of the syntax of first and second person pronominal elements, as well as their
interactions with morphology and semantics. Indexicality also holds an important place in
the philosophy of meaning, but the overlap between that literature and the phenomena under
discussion is actually fairly limited. An extremely brief overview of the links between
the philosophical literature on indexicality and the semantic formalisms used to model it,
however, might have expository value.

Indexicals are often described as expressions that rely on the context for reference. However, this definition can be misleading: many expressions vary based on the con-
text, but would not be considered indexicals. For example, a definite description like ‘the
speaker’ relies on context to supply a unique contextually salient entity that fits that descrip-
tion, but would not be considered an indexical. Focusing for the moment only on languages
that lack indexical shift, indexicals differ from other elements in that their referent cannot
be changed by any other operation, like quantification over possible worlds. According
Kaplan (1989), this because indexicals get their meaning differently than non-indexical
expressions. This difference in the way that indexicals get their meaning will set “I” apart
from “the speaker” or even “the person speaking this utterance right now in the actual
world”, as will be discussed below.

Following Frege (1948), we can think of meaning as having two components: sense and
reference. The reference is the object or objects that an expression refers to, while the
sense is our world-independent understanding of what the expression means. For example,
‘Mark Twain’ and ‘Samuel Clemens’ both refer to the same person, so their reference is
the same. However, these two names express different conceptions of this one person, so
their senses are different. This distinction is intended to, among other things, capture the
difference between the trivial sentence ‘Samuel Clemens is Samuel Clemens’ and the non-
trivial sentence ‘Mark Twain is Samuel Clemens’, as the two names have different senses.
This is important because it illustrates that in addition to having a referent, speakers also
have a world-independent conception of what a word means.

This distinction can also capture an interesting fact about expressions interpreted under
attitude predicates. Generally, two words with identical denotations can be substituted for
each other in a proposition without altering the truth conditions of that proposition. For
example, (110a) has the same truth conditions as (110b).
(110)  a. Mark Twain is a writer.
   b. Samuel Clemens is a writer.

What Frege notes is that, under an attitude predicate, this substitution is no longer possible:

(111)  a. Lauren thinks that Mark Twain is a writer.
   b. Lauren thinks that Samuel Clemens is a writer.

It is possible for Lauren to hold the belief ‘Mark Twain is a writer’ without knowing anything about Samuel Clemens, so the two sentences in (111) do not express the same meaning. The reason for this, according to Frege (1948) is that the relevant meaning of elements under attitude predicate is their sense, rather than their reference. If we think about attitude predicates in terms of possible worlds compatible or incompatible with and individual’s mental state, the difference is captured by thinking of denotations as relativized to a particular world. The denotation of ‘dog’ in world $w_1$ is the set of entities that fit the sense of the word ‘dog’ in that world, which is potentially different from the set of things that are dogs in $w_2$. What is crucial is that the sense remain constant, and the denotation varies based on the world of evaluation.

Kaplan (1989) proposes that the defining property of indexicals is that they determine their reference in a way that is not mediated by a sense. Rather than determining reference in a given world based on a sense, indexicals have no sense and refer directly to a property of the context that they are uttered in. The difference between “I” and “the speaker” is that we have a conception of what it means to be “the speaker” that is relevant for determining a reference in a given world, but for “I”, there is no equivalent meaning component, but instead a rule that tells us that “I” always refers to the person who pronounces it. Indexicals do not have senses and their reference is not evaluated with respect to some world. Instead, their reference is retrieved directly from the context. Because their denotations are not mediated by their senses, the denotation of an indexical does not change depending on the world of evaluation, on Kaplan’s account. Formally, this will be modeled by making the meaning of indexicals dependent a context variable $c$, but independent of the relevant world variable.
Returning to the difference between “I” and “the speaker of this utterance in the actual world”, we can use Frege’s substitution under attitude predicates to show that “I” still behaves differently, despite our best efforts to construct a meaning that is exactly synonymous with “I”.

(112) a. I wish that I was Brigitte Bardot.

b. I wish that the speaker of this utterance in the actual world was Brigitte Bardot.

There are contexts where the two sentences in (112) could convey the same meaning, but (112a) must mean that the speaker wants to be Brigitte Bardot, whereas (112b) could mean that the speaker wishes that Brigitte Bardot were the one uttering the sentence instead of the speaker herself. This difference arises because predicates embedded under “wish” are evaluated with respect to worlds compatible with the speaker’s desires, and in these worlds, it is possible that someone other than the speaker in the actual world would be uttering the sentence. “I” does not permit these readings, because it does not have a meaning that varies based on the world of evaluation.

Based on this description of indexicals as context dependent but world independent, context must be represented as a variable or coordinate in grammar. The values of variables or coordinates in grammar can typically be altered by other grammatical operations, so we might wonder if the same could be said for context. Kaplan (1989) makes a point of the absence of a context changing operator in English, calling such an operator ‘monstrous’. The so-called ‘monster operator’ (Shklovsky and Sudo (2014)) takes its name from this comment, in that it does the precise kind of context changing operation that Kaplan wanted to prohibit for English. The existence of shifty indexicals proves that it must be the case that context-shift is a possible grammatical operation.

Incorporating cross-linguistic insights to the the view of indexicality described above, we now know that there are languages, like Tigrinya, which do allow indexicals to refer to individuals other than the speaker and addressee in the utterance context. If it were the case that, in these languages, indexicals behaved like non-indexicals, for example by being

\footnote{It is unclear whether Kaplan intended to claim that context manipulation is impossible in languages other than English.}
sensitive to quantification over worlds, we might want to draw a typological picture where some languages have indexicals and some do not. However, we find that the picture is even more complex. Languages with indexical shift often have multiple constructions that involve attitudinal quantification over possible worlds, but have indexical shift in only a subset of these constructions. Tigrinya is one such language, as shown in (113), where in (113a), the complement clause allows indexical shift, but in (113b), the complement clause does not.

(113) Indexical shift occurs only in ʔil- clauses

a. almaz ʔanā nāti nay māwādaʔita biʃkoti bāliʔ-äy-a
   Almaz(F) 1.SG.NOM DET PREP last cookie eat-1.SG-3.F.SG
   ʔil-a  tāzarāb-a
   COMP-3.F.SG say-3.F.SG
   ‘Almaz, said that she, ate the last cookie’

b. almaz ʔanā nāti nay māwādaʔita biʃkoti kim-zi-bāliʔ-ı-kuw-a
   Almaz(F) 1.SG.NOM DET PREP last cookie COMP-REL-eat-1.SG-3.F.SG
   tāzarāb-a
   say-3.F.SG
   ‘Almaz, said that I_spkr/ṣi ate the last cookie’

What data like (113) tells us is that Kaplan was getting at a distinction that was even richer than he may have realized. Kaplan may have imagined a system where context, in the sense relevant for the valuation of indexicals, is wholly determined by factors external to the grammar, and can be accessed but not altered by grammatical operations. This conceptualization of context accords with an intuitive sense that certain factors about a speech context (the time, the location, the speaker, etc) have a fixed value, regardless of what is being said. However, in example (113b), the context of evaluation for the pronoun has in fact changed, as evidenced by the interpretation of the indexical in the embedded clause. If one is tempted to argue that ʔanā is not actually an indexical (i.e., it is sensitive to quantification over worlds, rather than contexts), the unavailability of a shifted reading of the pronoun in (113a) should be enough to illustrate that this is not the case: even in languages with indexical shift, there is a distinction between context dependency and world
dependency. In other words, his distinction is not simply a philosophical point about how meaning is constructed, but also about the kinds of parameters that have an independent status in grammar, and about the mechanisms that grammar has available to modulate those parameters.

Given this evidence that context must be a parameter of grammar and that one way that grammatical context is made evident is through pronominal systems, what can we learn about the structure and meaning of different types of clauses by looking at grammar of indexical reference? Addressing this question means narrowing the scope of lexical items under consideration. Recall that for Kaplan, not only is “I” an indexical, but so is “you”, “him”, “her”, “it”, “tomorrow”, “yesterday”, “this”, “that”, “actual”, “present” and many others, on some, but not all, of their possible uses. Further, he includes in the class of indexicals expressions that require a some kind of pointing gesture. However, in talking about the morphosyntactic properties of indexical shift, we will be considering mostly first and second person pronominal elements, as there is a wealth of concomitant morphosyntactic effects to examine. Time and location indexicals are also part of the literature on indexical shift (Giorgi (2010); Sundaresan (2018); Deal (2017)), but will not play a central role in this chapter. Other categories, like third person pronouns, demonstratives, and adjectives like “actual” do not clearly participate in indexical shift as a morphosyntactic phenomena, but for each of these categories it would require careful thought as to what that would even mean. Some exploration of these questions exists in the ASL literature (Quer (2005); Davidson (2015)).

### 3.1.2 Background on indexical shift

Contra Kaplan (1989), there are in fact languages where the referent of an indexical can vary without changing who is actually uttering the sentence. Consider the data below from Uyghur (Shklovsky and Sudo, 2014).
First person pronouns in Uyghur \textit{Shklovsky and Sudo (2014)}

\checkmark (non-shifted) ‘Ahmet said that I$\_speaker$ left’
\xmark (shifted) ‘Ahmet said that he$\_i$ left’

\xmark (non-shifted) ‘Ahmet said that I$\_speaker$ left
\checkmark (shifted) ‘Ahmet$\_i$ said that he$\_i$ left’

(114) shows how two different types of embedded clausal elements behave with respect to the evaluation of indexicals. The first, (114a), involves a nominalized clausal element which does not induce indexical shift. The subject, mening, is a first person pronoun evaluated with respect to the utterance context (i.e., it must refer to the speaker in the actual utterance context). The second sentence, (114b), is an embedded clause that contains the first person indexical men. This is a shifted pronoun, in that the first person indexical must refer to Ahmet, rather than the speaker in the utterance context.

However we model the meaning of a first person pronoun, it should be able to locate the individual from whom an utterance originates in a context, and refer to that individual. In English, and in matrix clauses in shifty languages like Uyghur, the relevant context is the utterance context. However, as (114b) illustrates, this context can change — the embedded clause in (114b) is evaluated with respect to the context introduced by the upstairs attitude predicate.

On any analysis of indexical shift, (114b) must contain some kind of operator that changes the way that indexicals are interpreted in the structure below the point that the operator occurs. This is the ‘shifted’ region of the sentence. The analyses for indexical shift presented below in this chapter differ in the precise meanings they give to indexicals cross-linguistically, and differ in exactly what it is that changes in a shifty context to obtain shifty readings. A shared property on all accounts, though, is that the pronoun stays the same: a first person pronoun will always mean [the speaker in context (c)], and the reading (shifted vs. unshifted) will be determined by which context the indexical has access to.
Terminologically, a pronoun like *men* will sometimes be referred to as a ‘shifted’ pronoun, but this terminology is not intended to indicate that the pronoun has undergone any kind of change. Instead, it is intended to convey that the pronoun is being fed a context that differs from the utterance context.

### 3.2 Variation in indexical shift cross-linguistically

Languages with indexical shift vary in two major ways. First, the kinds of predicates that embed shifty complements vary cross-linguistically, but conform to an implicational hierarchy based on verb type. Second, the kinds of pronominal elements that can be shifted vary cross-linguistically, again conforming to an implicational hierarchy, in this case based on the features they encode. A final point regarding variation is that there are indexical shift languages where only covert arguments can be shifted.

**Variation based on predicate type**

Indexical shift has been characterized as an embedded clause phenomena. Though this dissertation presents evidence that indexical shift is also possible in matrix clauses, there are interesting typological generalizations about which predicates can embed indexical shift. As noted in Sundaresan (2013); Deal (2017); Sundaresan (2018) a.o., all known languages that have shifted indexicality allow it under ‘say’. A subset of those languages allow indexical shift under ‘think’, and a subset of those under ‘know’, forming an implicational hierarchy. The table in (115), including data taken from Anand (2006), Deal (2017) and Sundaresan (2018), presents this typology for some of the known indexical shift languages.

It is possible that a language could allow indexical shift under a predicate other than ‘think’, ‘know’, or ‘say’. If such a language exists, it would only be a counterexample to the hierarchical generalization described above if the language did not also allow indexical shift under ‘say’, ‘think’, and ‘know’.

(115)
Table 3.1: Cross-linguistic variation in predicates that embed indexical shift

<table>
<thead>
<tr>
<th></th>
<th>SPEECH</th>
<th>THOUGHT</th>
<th>KNOWLEDGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nez Perce</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Tigrinya</td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>Navajo</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Slave</td>
<td>✓</td>
<td></td>
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</tr>
<tr>
<td>Tamil</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zazaki</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A further concern is that the generalization, stated as in Culy (1994); Deal (2017); Sundaresan (2018), makes reference to verb ‘types’. One might wonder, for example, if all languages that allow indexical shift under ‘say’ also allow it under ‘tell’, ‘explain’, or ‘whisper’, or in other words, what constitutes a ‘say’-type verb. This is an empirical question that I do not have adequate evidence to answer generally, but there is enough data to suggest that languages vary further in this respect. Tigrinya, for example, allows indexical shift under ‘say’ and ‘think’, but not under ‘know’, ‘hear’, ‘see’, and also allows indexical shift under a speech verb with a manner component, like ʔaʔiwây-, ‘yell’.

(116) Embedding under *say* in Tigrinya

a. mahari may yi-harim all-o ŋil-u tâzarâb-u
   ‘Mahari said that it is raining’

b. mahari may kim-zî-harim-ä tâzarîb-u
   Mahari(M) water COMP-REL-fall-1.SG say-3.M.SG
   ‘Mahari said that it is raining’

(117) Embedding under *think* in Tigrinya

a. mahari may yi-harim all-o ŋil-u yi-hasib
   Mahari(M) water 3-fall COP-3.M.SG COMP-3.M.SG 3-think
   ‘Mahari thinks that it is raining’

b. mahari may kim-zî-harim-ä yi-hasib
   Mahari(M) water COMP-REL-fall-1.SG 3-think
   ‘Mahari thinks that it is raining’
(118) *Embedding under know in Tigrinya

a. *mahari may yi-harim all-o ?il-u yi-fälit
   Mahari(M) water 3-fall COP-3.M.SG COMP-3.M.SG M-know
   INT: ‘Mahari knows that it is raining’

b. mahari may kim-zi-harim-ä yi-fälit
   Mahari(M) water COMP-REL-fall-1.SG M-know
   ‘Mahari knows that it is raining’

(119) *Embedding under hear/see in Tigrinya

a. *mahari may yi-harim all-o ?il-u sämi?/rä?ay-u
   INT: ‘Mahari heard/saw that it is raining’

b. mahari may kim-zi-harim-ä sämi?/rä?ay-u
   Mahari(M) water COMP-REL-fall-1.SG heard/saw-3.M.SG
   ‘Mahari said that it is raining’

(120) Embedding under yell in Tigrinya

a. mahari may yi-harim ?all-o ?il-u ?a?iwäy-u
   ‘Mahari yelled that it is raining’

b. mahari may kim-zi-harim-ä ?a?iwäy-u
   Mahari(M) water COMP-REL-fall-3.M.SG yell-3.M.SG
   ‘Mahari yelled that it is raining’

By contrast, Ludwig et al. (2010) say that in Matses, only the quotative verbs ke ‘say’ and ka ‘tell’ allow indexical shift in their complements. The difference between Tigrinya and Matses could indicate the need for a more fine-grained hierarchy, but it could also be a result of some other constraints of complement selection that vary cross-linguistically.

Variation in shiftable pronouns

Deal (2017) notes that, in describing the typology of indexical shift languages, there is cross-linguistic variation in which pronouns are shiftable in a given language. Considering
first person, second person, and locative indexicals, she presents three different classes of indexical shift languages based on which pronouns can receive a shifty interpretation, which forms the implicational hierarchy of shiftable pronouns cross-linguistically, as in (121).

(121)  \textsc{first} \textrangle \textsc{second} \textrangle \textsc{locative}

The first group of languages, which includes Zazaki, along with Korean, Matses, Turkish, and Nez Perce, allow shifting of all three kinds of indexicals, as in (122):

(122) a. Zazaki shifty 1st person \[ Anand (2006) \]
    henseni va [kɛ ez newɛsha]  
    Hesen.OBL said that I be-sick-PRES  
    ‘Hesen, said that he, was sick’

b. Zazaki shifty 2nd person \[ Anand (2006) \]
    heseni va ali-ra [kɛ ti newɛsha]  
    Heseni.OBL said Ali-to that you be-sick-PRES  
    ‘Hesen said to Ali, that you were sick’

c. Zazaki shifty locative \[ Anand (2006) \]
    waxto kɛ o london-de bime ʔierrί ca [kɛ o ita  
    when that he London-at be-PAST Pierre.OBL said that it here  
    rindɛka]  
    be-pretty-PRES  
    ‘When he was in London, Pierre said that it is pretty there’

These languages are the most permissive with respect to shifting. A second group of languages behaves similarly with respect to person indexicals, but does not have a shifty locative indexicals. Uyghur is one such language, as shown in (123), and Tigrinya will turn out to be another.
(123)  a. Shifty first person, non-shifty locative in Uyghur [Shklovsky and Sudo (2014)]

Muhemmet 1SG.DAT [9th moth-from star-ing 1SG.NOM { there-LOC

brush-de } uqu-imen] di-di

‘Muhemmet, told me that he, would study there/# here from September’

b. Shifty second person in Uyghur [Shklovsky and Sudo (2014)]

Ahmet 2SG who-ACC well see-IMPERF.2SG] say-PAST.3

‘Who did Ahmet tell Aygül, that she, likes?’

The example in (123a) has a shifty first person pronoun men, but the locative pronoun in the same shifty clause must be u jer, “there”, rather than be jer, “here”, indicating that the locative pronouns in this language do not shift. Second person indexicals do shift, which can be seen in (123b), where verbal agreement shows that pro is second person.

A final class of languages allows only first person pronouns to shift. Deal (2017) uses Tamil (Sundaresan, 2013, 2018) to illustrate this possibility.

(124)  a. Shifty first person in Tamil [Deal (2017), via Sundaresan, p.c.]

Raman krishnan-kit[æ] [taan paris-æ dʒej-čč-een-nû] so-nn-aan
Raman.NOM Krishnan.ALL REFLEX.NOM.SG prize-ACC win-PST-1.SG-COMP

‘Raman, told Krishnan that he, had won the prize.’


Raman krishnan-kit[æ] [niitaan paris-æ dʒej-čč-aj-aaj-ûnû]
Raman.NOM Krishnan-ALL 2.SG/REFL.NOM.SG prize-ACC win-PST-2.SG-COMP

‘Raman told Krishnan, that you/*he, had won the prize’

In (124a), the verbal agreement is first person and the indexing given requires coreference between Raman and taan, suggesting that the subject is a shifted indexical, even though the target of agreement is typically thought of as an anaphor and is not morphologically similar to a first person pronoun. (124b) shows that second person shifty pronouns
are not available, which could be interpreted as speaking to the typological point in Deal (2017), that some languages allow only first person indexicals to shift.

However, various factors make the existence of indexical shift languages that allow only first person shifting somewhat unclear. The two examples of this kind of language mentioned in Deal (2017) are Tamil and Malayalam, and in both languages, the overt morpheme identified with indexical shift has typically been identified elsewhere as a long-distance anaphor. As noted above, the claim that Tamil has indexical shift comes from Sundaresan (2013, 2018), who does actually analyze \textit{uuan} as an anaphor, but argues based on the shifted first person agreement in examples like (124a) that, as a result of the Anaphor Agreement Effect, verbal agreement with \textit{uuan} in subject position is impossible. Instead, there is a covert shifted first person perspectival argument that is the target of agreement in an example like (124a).

Arguments that Malayalam \textit{taan} involves shifty indexicality comes from Anand (2006). His analysis differs from that of Sundaresan (2013, 2018) in that verbal agreement is not a factor, as he notes that Malayalam lacks verbal agreement, and that he considers \textit{taan} itself to be the shifted indexical. The motivation for this claim is that \textit{taan} has apparent logophoric properties, but does not obey the DE RE BLOCKING effect, which is a diagnostic to distinguish logophors from indexicals, and is discussed in greater detail below. In appendix A, I propose an alternative explanation for the lack of de re blocking effects in Malayalam: that \textit{taan} is not a logophor or a shifted indexical, but a long-distance anaphor, which I argue is a distinct phenomena.

If Malayalam \textit{taan} is not a shifted indexical, then Malayalam does not constitute support for the existence of languages with shifty first person pronouns but no shifty second person pronoun. If so, then the Tamil example constitutes the only evidence for the claim in Deal (2017) that some languages allow first person pronouns to shift without allowing second person pronouns to shift. If first person agreement is actually an indication of shifted indexicality, this would be a compelling argument, but Deal (2018) argues that, in some languages, logophors can trigger first person agreement. This introduces the possibility that first person verbal agreement is not a reliable indicator of indexical shift.

If it turns out to be the case that there are no real examples of languages that allow only
first person pronouns to shift, then the generalization in (121) could simply be reduced to the claim that locative shift only occurs in languages that also have person shift.

The other way that the specific choice of pronoun can impact the availability of a shifted reading is that, in some languages, only pro allows indexical shift. In these cases, as in Tamil, indexical shift is only detectable based on verbal agreement. This is claimed to be the case for Mishar Tatar in Podobryaev (2014).

(125) a. pro can shift in Tatar

alsu pro kaja kit-te-m diep at’-ty?
Alsu pro where go.out-PST-1.SG COMP say-PST
‘Which place did Alsu, say that she, went?’

b. Overt pronouns cannot shift in Tatar

alsu [min kaja kit-te-m diep] at’-ty?
Alsu I where go.out-PAST-1.SG COMP say-PST
‘# Which place did Alsu, say that she, went?’

(125a) and (125b) differ only in the realization of the embedded subject, such that in (125a) has a null overt subject and (125b) has an overt first person subject. In both cases, embedded verbal subject agreement reflects first person φ features. In (125a), where the pronoun is null, a shifted interpretation of the embedded clause is possible, but in (125b), where the pronoun is overt, this interpretation is unavailable. Amharic is also an example of a language where only pro is shiftable (Deal, 2017; Anand, 2006). Though these facts do not specifically bear on the discussion in this chapter, the fact that there are languages where only covert indexicals can shift is worth noting because it it not predicted by the prevailing analyses of indexical shift.

3.2.1 Syntactic constraints on indexical shift

Even controlling for the restrictions on embedding predicate and pronoun type described in the last section, the availability of indexical shift is still constrained within the languages that allow it. The syntactic configuration that an indexical occurs in, as well as the particular arrangement of contexts available, constrain the possible interpretations of indexicals.
These restrictions turn out to follow straightforwardly from the syntactic interactions between indexicals and context shift operators on an Anand (2006)-style analysis, but for the moment I will present them in theory-neutral terms, to the extent possible. A later section will detail how these facts can adjudicate between different models of indexical shift.

**Shift together**

The **Shift Together** generalization, Anand (2006), makes a prediction about the possible interpretations of indexicals that co-occur in a single clause.

(126) Multiple first person indexicals in Slave

\[
\text{sehlégé segha goñihkie rulu yudeli}
\]


‘She wants her friend to sew slippers for her’

The embedded clause in (126) contains two first person indexicals: the object pronoun \text{segha}, and the possessor inside the embedded subject \text{sehlégé}. Anand (2006) notes that, if each first person indexical could freely be interpreted with respect to either the utterance context or the embedded context, there should be four possible interpretations, schematized in (127).

(127) a. she\textsubscript{i} wants [my friend to sew slippers for me ]

b. *she\textsubscript{i} wants [my friend to sew slippers for her\textsubscript{i}]

c. *she\textsubscript{i} wants [her\textsubscript{i} friend to sew slippers for me]

d. she\textsubscript{i} wants [her\textsubscript{i} friend to sew slippers for her\textsubscript{i}]

However, in Slave, only two of these options are possible: (127a), where neither pronoun is shifted, and option (127d), where both pronouns are shifted. This pattern is illustrative of a larger empirical generalization that requires indexicals within the embedded clause to be interpreted with respect to the same context, prohibiting the kind of mixed readings in (127b) and (127c).
(128) **SHIFT TOGETHER constraint**

All shiftable indexicals within a *attitude-context domain* must pick up reference from the same context

*Exceptions to Shift Together*

While shift together holds in many languages, there are configurations that at least appear to violate (128). One such exception is presented in Shklovsky and Sudo (2014) in Uyghur in (129).

(129) **Exception to SHIFT TOGETHER in Uyghur** [Shklovsky and Sudo (2014)]

*Context:* Ahmet told me, “I like Aygül”. I tell Aygül what he said.

<table>
<thead>
<tr>
<th>ahmet [deni yaxshi kör-yemen] di-di</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahmet 2.SG.ACC. well see-IMPF.1.SG say-PAST</td>
</tr>
</tbody>
</table>

‘Ahmet said that he likes you’

The sentence in (129) should be understood as being uttered in a context with two participants, the speaker and Aygül, the addressee. The embedded context also has two participants, the speaker from the utterance context, who is also the addressee in the embedded context, and Ahmet, who is the speaker in the embedded context. The meaning conveyed by the embedded proposition in (129) is that Ahmet likes Agyül. There is no context where Ahmet and Agyül are both participants, because Agyül is only a participant in the utterance context and Ahmet is only a participant in the embedded context. If Shift Together held in Ughyr, we would predict two possible realizations for the two embedded arguments: either both pronouns will be realized in the embedded context, in which case the pronoun referring to Ahmet would be first person and the pronoun referring to Agyül would be third person, or both pronouns would be interpreted with respect to the embedded context, in which case the pronoun referring to Ahmet would be third person and the pronoun referring to Agyül would be second person. Instead, (129) shows that there is a possible realization of this sentence with a first person pronoun referring to Ahmet and a second person pronoun referring to Agyül, which represents the kind of mixing of contexts that should be prohibited by Shift Together.
Though this example does represent an exception to Shift Together, it is an exception that is constrained by other factors, specifically, word order, as [130] shows that this interpretation is only available if the shifted pronoun precedes the unshifted pronoun.

(130)  a. Multiple shifted pronouns in Uyghur  

Context: Ahmet told me, “I sent you a letter the other day”. Now I am telling you what he said.

ahmet manga [men sanga xet ewet-tim] di-di
Ahmet 1-SG.DAT 1-SG.NOM 2SG.DAT letter send-PST.1SG] say-PST.3
‘Ahmet, told me that he, sent a letter to me’

b. Shifted ⟢⟩ unshifted in Uyghur  

Context: Muhemmet told me “I sent a letter to Aygül”. I am talking to Aygül.

# muhemmet manga [men sanga xet ewet-tim]  
Muhmmet 1-SG.DAT 1-SG.SG 2.SG.DAT letter send-PAST-1SG

di-di  
say-PAST.3

INT: ‘Muhemmet, told me that he, sent a letter to you’

(130) shows the same sentences in two different situations. In (130a), both of the pronouns are interpreted as shifted, because the reported comment was spoken by Ahmet, who is referred to by the first person pronoun men, and the reported comment was directed at the speaker in the utterance context, who is referred to by the second person pronoun sanga. Both pronouns are interpreted in the shifted context, no violation of Shift Together is incurred, and the sentence is grammatical.

In (130b), however, the embedded first person pronoun men is intended to refer to Muhemmet, the speaker in the embedded context, and the second person pronoun sanga is intended to refer to Aygül, the addressee in the other context. This is not a possible reading, and in this configuration, the Shift Together violation is not tolerable and the intended meaning is ruled out.

Shklovsky and Sudo (2014) offer the explanation that indexicals can occupy a position below the attitudinal quantifier by above the shift-inducing operator to escape the interpretational constraints imposed by Shift Together.
NO INTERVENING BINDER

A second syntactic constraint on the interpretation of indexicals as described in Anand (2006) is NO INTERVENING BINDER. This is a generalization about the possible contexts that can be accessed for the interpretation of an indexical in configurations of multiple embedded contexts, formulated in (131).

(131) NO INTERVENING BINDER Constraint

A shiftable indexical \( ind_1 \) cannot pick up reference from a context \( C_A \) if there is an intervening context \( C_B \) which another indexical \( ind_2 \) picks up reference from.

The following schematic is presented in Anand (2006) to illustrate the logic of this constraint, where ‘C@’ indicates the actual context.

(132) C@ Ali said to me [\( C_1 \) that Hesen said to you [\( C_2 \) that I am Rojda’s brother] ]

This generalization could be reframed as a prohibition against allowing an indexical to reach across an intervening context to get its reference, in which case the description could be simplified to omit you in (131). However, in some languages, indexical shift is optional in all syntactic contexts where it is allowed. In these languages, (131) requires the presence of a second indexical picking up reference in an intermediate context to ensure that all three contexts are actually represented.

One possible interpretation of the kind of sentence schematized in (132) would involve the first person indexical in the embeddedmost clause being interpreted with respect to the utterance context, i.e., referring to the speaker in the actual world (C@). NO INTERVENING BINDER prohibits this option in configurations where another indexical, here indicated by you picks up its referent from \( C_1 \). A specific example of this in Zazaki is presented in (133), from Anand and Nevins (2004).

(133) NO INTERVENING BINDER in Zazaki [Anand and Nevins (2004)]

\( \text{speaker} = \text{Andrew} \)
Ali, mi_{j}-ra va [c_{1} ke heseni{k} to_{j}-ra va [c_{1} ez_{h,a,u} braye rojda-o]]

Ali said to me that Hesen said to you that Rojda-GEN is your brother.

In (133), there are three contexts, the actual context where Andrew is the speaker, C_{1}
where Ali is the speaker and Andrew is the addressee, and C_{2}, where Heseni is the speaker.
On the indexing given, Andrew is also the addressee of C_{2}. The second person indexical to
is interpreted with respect to C_{1}, because C_{1} is the context where Andrew is the addressee.
In the embeddedmost clause, the first person indexical ez can refer to the speaker of C_{1} or
C_{2}, but not C_{@} where the speaker is Andrew, because this would violate No Intervening
Binder.

3.2.2 Summary: Cross-linguistic constraints on indexical shift

Indexical shift languages all exhibit context shift for the purposes of indexical evaluation,
but differ in exactly how this is realized. One area of variation is distributional: not all
clauses allow indexicals to shift, and those that do adhere to an implicational hierarchy,
where indexical shift is most likely under say-verbs, and least likely under perception verbs.
Another point of variation is in which pronouns are able to shift. Every language with any
kind of indexical shift will exhibit first person shifting, but it is not clear whether there are
languages that allow only first person to shift to the exclusion of second person. Locative
pronouns can sometimes shift, but only in languages that allow person shifting. Finally,
there are languages where overt pronouns cannot shift, and shifting is only reflected on
verbal agreement.

There are additional constraints imposed on the interpretation indexicals based on their
relative position to and co-occurance with other indexicals. These constraints, SHIFT TO-
GETHER and No Intervening Binder might seem somewhat mysterious, but later discussion
will show that they fall out straightforwardly given the correct set of empirical assumptions
about the mechanisms involved in indexical shift.
3.3 Indexical Shift in Tigrinya

Tigrinya is an excellent language for studying indexical shift, because the particular constellation of morphosyntactic properties it has interact robustly with indexical shift. Both overt and covert pronouns can be shifted in Tigrinya, which makes it much easier to determine the position of the relevant elements. First person and second person pronouns shift, which crucially allows us to examine featural properties of shifted indexicals, as will be discussed below. Tigrinya also has verbal morphology cross-referencing the φ features of both subjects and objects, providing more morphosyntactic evidence for the structure and featural composition of shifty elements. Finally, word order is extremely free in Tigrinya, which means that there are few confounding factors when looking at the interaction of word order and shiftability. These factors conspire to provide insight into morphosyntactic patterns that would not otherwise be apparent.

The following table, taken from Kifle (2011), shows the range of nominative and accusative pronouns in Tigrinya.

(134) *Tigrinya Pronouns*
<table>
<thead>
<tr>
<th>Subject</th>
<th>Object</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.SG</td>
<td>?an-ä</td>
</tr>
<tr>
<td>1.PL</td>
<td>niḥ-na</td>
</tr>
<tr>
<td>2F.SG</td>
<td>nissi-ķi</td>
</tr>
<tr>
<td>2M.SG</td>
<td>nissi-ķa</td>
</tr>
<tr>
<td>2F.PL</td>
<td>nissi-ķatkin</td>
</tr>
<tr>
<td>2M.PL</td>
<td>nissi-ķatkum</td>
</tr>
<tr>
<td>2F.PL/H</td>
<td>nissi-ķin</td>
</tr>
<tr>
<td>2M.PL/H</td>
<td>nissi-ķum</td>
</tr>
<tr>
<td>3F.SG</td>
<td>niss-a</td>
</tr>
<tr>
<td>3M.SG</td>
<td>niss-u</td>
</tr>
<tr>
<td>3F.PL</td>
<td>nissa-tän</td>
</tr>
<tr>
<td>3M.PL</td>
<td>nissa-tom</td>
</tr>
<tr>
<td>3F.H</td>
<td>niss-ān</td>
</tr>
<tr>
<td>3M.H</td>
<td>niss-om</td>
</tr>
</tbody>
</table>

Example (135b) shows an example of a shifted first person indexical in Tigrinya.

(135) a. *(nissa)* saḥasīy-a
     (3.F.SG.NOM) dance-3.F.SG
     “She danced”

     b. almaz *(?anä)* saḥasīy-ā ?il-a (tazarāb-a)
        Almaz(F) (1.SG.NOM) dance-1.SG comp-3.F.SG say-3.F.SG
        “Almaz, said that she/they danced”

As a baseline, the example in (135a) shows a sentence with a third person pronoun and third person verbal agreement. Tigrinya is a pro-drop language, so the pronoun is optional here, but if overt, it must morphologically realize third person feminine. If (135a) is embedded under an attitude predicate, as in (135b), and there is coreference between almaz and the subject of the embedded clause, this optional pronoun is only realizable as first person, and the agreement on the embedded verb shifts to first person as well.

Second person pronouns can also shift in Tigrinya, (136).
(136) kidane ni almaz nissiki nifuṭi ?i-ki ?il-u
Kidane(M) DOM Almaz(F) 2.F.SG.NOM smart.F COP-2.F.SG COMP-3.M.SG

nägar-u-wa
say-3.M.SG-3.F.SG

‘Kidane told Almaz that she is smart’

Temporal indexicals can shift as well. In both sentences in (137), *timali*, “yesterday” is interpreted as part of the reported content, specifying the time that Kidane started his new job, according to his report. However, the reported times differ. In (137a), at the time of Kidane’s statement, he had started his new job the previous day. In (137b), it is not clear when Kidane made the statement about starting his new job, but we know that according to his report, his first day was yesterday, i.e., the day before (137b) was uttered.

(137) a. kidane ḫadish sārīḥ-ā timali ṭīmir-u ?il-u

‘Kidane said he started his new job yesterday’

b. kidane timali ḫadish sārīḥ-ā ṭīmir-u ?il-u

‘Kidane said he started his new job yesterday’

This dissertation does not explore temporal context shift, but one way to understand the contrast in (137) is that in (137a), *timali* is within the shifted context, where it will be understood as relative to the time of Kidane’s utterance, whereas (137b), *timali* is in a higher position in the clause, outside of the context of Kidane’s utterance, and inside the context of utterance for the entire sentence, where it is interpreted with respect to the time of utterance.

Unlike temporal indexicals, locative indexicals do not seem to be shiftable in Tigrinya. In (138), *ṭabzi*, “here” must be interpreted with respect to the utterance context such that it refers to whatever location (138) is uttered in.

(138) kidane ṭabzi ti-sā?i-il-u nera ?i-il-u
Kidane(M) here PASS-picture-3.F PAST COMP3.M.SG

‘Kidane said he was photographed here’
Below, I provide a basic description of the indexical shift in Tigrinya with respect to the syntactic conditions that these constructions are subject to.

Clause types and indexical shift

As discussed in the previous chapter, Tigrinya has two types of clausal complements, *kim-zi*- clauses and *ʔil*- clauses. The first, *kim-zi*- clauses, do not allow indexical shift.

(139) No indexical shift in Tigrinya *kim-zi*- clauses

a. kidane ni almaz ʔissu ʔaʕa kim-zi-rāʔay-ā-ya
   nāgar-u-wa
tell-3.M.SG-3.F.SG
   ‘Kidane told Almaz that he saw her’

b. kidane ni almaz ʔanā ʔaʕaki kim-zi-rāʔay-ku-ki
   nāgar-u-wa
tell-3.M.SG-3.F.SG
   ‘Kidane told Almaz that I saw you’

In (139a), the embedded third person pronouns are interpretable as coreferential with the matrix subject and object, and no indexical shift is evident. (139b) is an attempt to convey the same sentence with shifted indexicals, but this is impossible, and the first and second embedded pronouns can only refer to the speaker and addressee in the utterance context.

The other type of embedded clause requires the presence of the *ʔil*- morpheme described in the previous chapter. Inside these embedded clauses, a shifted reading of indexicals is available. In a sentence like (140), indexical shift is not only possible, but required because of the realization of *ϕ* features in the verbal inflection (see section 3.5.2).
(140) Indexical shift is possible under ?iil-

\[
\begin{array}{l}
\text{kidane ni almaz ?anā niṭaŋ̥ḁ\‐ki rāʔay-ā-ki ?iil-u} \\
\text{kidane(M) DOM almaz 1.SG.NOM 2.F.SG.ACC see-1.SG-2.F.SG COMP-3.M.SG} \\
\text{nāgar-u-wa} \\
\text{tell-3.M.SG-3.F.SG}
\end{array}
\]

‘Kidane, told Almaz that he saw her

Recall from chapter 1 that ?iil- can also occur in the periphery of a matrix clause in Tigrinya. These contexts license indexical shift as well.

(141) Tigrinya matrix clauses allow indexical shift

\[
\begin{array}{l}
\text{ruth ?anā nāti fātina ḡalīf-ā ?iil-a} \\
\text{Ruth(F) 1.SG.NOM DET test passed-1.SG COMP-3.F.SG}
\end{array}
\]

‘Ruth said that she passed the test.’

Configurations like (141) feature indexical shift in an unembedded clause, something that has not previously been reported in the literature on indexical shift.

Unsurprisingly, indexical shift is not possible in matrix clauses that lack this ?iil- morpheme. For example, (142) only has the interpretation where the first person pronoun refers to the speaker.

(142) Indexical shift in Tigrinya requires ?iil-

\[
\begin{array}{l}
\text{?anā nāti fātina ḡalīf-a} \\
1.SG.NOM DET test passes-1.SG
\end{array}
\]

‘I passed the test’

In summary, indexical shift can occur in any clause in Tigrinya that features the ?iil- complementizer, but is prohibited elsewhere, consistent with the view that indexical shift is a perspectival phenomenon.

What pronouns are shiftable?

Section 3.2, in presenting a cross-linguistic description of variation in indexical shift languages, showed that one point of variation is what type of pronoun shifts. Tigrinya is
extremely permissive in this respect, in that any pronoun can shift. Both first and second
person can be interpreted with respect to the shifted contexts, as in (143).

(143)  a. Tigrinya shifty first person
ruth ni almaz ?anä näti fätina ḥalif-ā ?il-a
Ruth(F) DOM Almaz(F) 1.SG.NOM DET test pass-1.SG COMP-3.F.SG
nägar-at-a
say-3.F.SG-3.F.SG
‘Ruth₁ told Almaz₂ that sheᵣᵢⱼ/ᵢⱼᵢ/ᵢⱼ/₉/₉/₉/₉ passed the test’

b. Tigrinya shifty second person
ruth ni almaz nissiki näti fätina ḥalif-ki ?il-a
Ruth(F) DOM Almaz(F) 2.SG.NOM DET test pass-2.SG COMP-3.F.SG
nägar-at-a
say-3.F.SG-3.F.SG
‘Ruth₁ told Almaz₂ that sheᵣᵢⱼ/ᵢⱼᵢ/ᵢⱼ/₉/₉/₉/₉ passed the test’

There are no apparent constraints on the shiftability of pronouns based on grammatical
function. In example (144a), the subject, ?anä is a shifted first person pronoun, while in
(144b), the applied object niʔayi is a shifted first person pronoun, and in (144b) the direct
object is a shifted first person pronoun.

(144)  a. Tigrinya shifty subject
kidane ?anä näti president dābdābā sādād-ā ?il-u
Kidane(M) 1SG.NOM DET president letter send-1SG COMP-3.M
‘Kidane said heᵣ sent the president a letter’

b. Tigrinya shifty applied object
kidane ?iṭi president niʔayi dābdābā sādād-u-lā
Kidane(M) DET president 1SG.ACC letter send-3M.SG-APPL.1.SG
?il-u
COMP-3.M.SG
‘Kidaneᵣ said that the president sent himᵣ a letter’

103
c. Tigrinya shifty direct object

kidane ʔiṭi president nīʔaʔyi gʷəniy-u-ni ʔiḷ-u
Kidane(M) DET president 1SG.ACC visit-3.M.SG-1.SG
‘Kidane said that the president visited him’

Example (145) shows a shifted first person possessive marker on the object, indicating that pronouns contained inside of DP arguments can also shift.

(145) Tigrinya shifty possessors

kidane ʔanā ni ṭark-ā rāʔay-ū-ʔiḷ-u
Kidane(M) 1.SG.NOM DOM friend-1.SG see-1.SG-3.M.SG COMP-3.M.SG
‘Kidane said that he saw his friend

Objects of prepositions can shift, as in (146), where the first person clitic -āy must refer to kidane.

(146) Tigrinya shifty PP objects

kidane ʔanā abtaq-āy temin rāʔay-ū ʔiḷ-u
Kidane(M) 1.SG.NOM next to-1.SG snake see-1.SG COMP-3.M.SG
‘Kidane said that he saw a snake next to him’.

Pronouns contained within relative clauses can also shift, as in (147). Here the relative clause contains a shifted first person nominative pronoun, ʔanā.

(147) Shifty pronouns inside relative clauses in Tigrinya

kidane [ʔita ʔanā zi-haqiz-ku-wa sābāyti] ṭafīʔ-a
kidane(M) DET.F 1.SG.NOM REL-help-1.SG-3.F.SG woman disappear-3.F.SG

ʔiḷ-u
COMP-3.M.SG
‘Kidane said that the woman that he helped disappeared’

The examples in (144)-(147) are intended to show that, within a shifty context, all pronominals in any position can receive shifted readings in Tigrinya.
Correlation between height and interpretation

The previous section established that, in principle, any pronoun can be interpreted relative to either a shifted or an unshifted context. However, syntax imposes constraints on the context a pronoun can be realized with respect to. In Tigrinya, the role of syntactic factors in determining indexical reference is evident from the fact that unshifted indexicals, those interpreted with respect to the utterance context, must occupy a higher position than shifted indexicals.

(148)  a. Unshifted ⟯ shifted

kidane  ṅiӌa?yi  ṭanā   rāʔay-ā-ya  ?il-u  tāzārab-u
Kidane(M) 1.SG.ACC 1.SG.NOM  see-1.SG-3.F.SG  COMP-3.M.SG
‘Kidane, said that he, saw me_{spkr}’

b. Shifted ⟯ unshifted

*kidane  ṭanā  ṅiӌa?yi   rāʔay-ā-ya  ?il-u  tāzārab-u
INT: ‘Kidane, said that he, saw me_{spkr}’

In (148a), the nominative pronoun ṭanā is shifted, referring to kidane, while the accusative pronouns niӌayi, referring to the speaker in the utterance context, is not. This combination of shifted and unshifted pronouns is possible only if the unshifted one precedes the shifted pronoun, as in (148a), and is ungrammatical in the opposite order (149a). This pattern is not reducible to a general constraint on word order, as both orders are possible if the two pronouns can be interpreted with respect to the same context, as in example (149a).

(149)  a. Object ⟯ subject

kidane  ṅiӌa?a  ṭanā   rāʔay-ā-ya  ?il-u
Kidane(M) 3.F.SG.ACC 1.SG.NOM  see-1.SG-3.F.SG  COMP-3.M.SG
    tāzārab-u
    say-3.M.SG
‘Kidane, said that he, saw her_{j}’
b. Subject >> object

Kidane(1.SG.NOM) → Kidane(M) → see-1.SG-3.F.SG → COMP-3.M.SG

‘Kidane said that he saw her’

In (149), the first person nominative pronoun ?anā is interpreted with respect to the embedded context. The third accusative pronoun niʕaʔa can be interpreted relative to either context, because in both contexts, the referent will be third person. The first person pronouns can be either above or below the third person pronoun, showing that the pattern in (148a) is not attributable to a general prohibition on the relative order of the two pronouns.

Likewise, if both pronouns are realized with respect to the utterance context, both orders are possible:

(150) a. IO >> DO

Kidane(nabāy niʕaki) → Kidane(M) → prep-1.SG 2.F.SG.ACC 1.SG.NOM recommend-1.SG-3.F.SG

‘Kidane said that he recommended you to me’

b. DO >> IO

Kidane(niʕaki nabāy) → Kidane(M) → 2.F.SG.ACC prep-1.SG 1.SG.NOM recommend-1.SG-3.F.SG

‘Kidane said that he recommended you to me’

In (150), both the first person pronoun inside the prepositional object, nabāy, and the second person object, niʕaki, are interpreted relative to the utterance context, and can appear in either order.

The basic generalization regarding indexical height and interpretation in Tigrinya is that unshifted indexicals must always be higher than shifted indexicals.
Clause-boundedness constrains shiftability

If, as illustrated above, the position of an indexical determines the context that it can be interpreted relative to, a logical consequence would be that indexicals cannot be interpreted relative to a context that they have no way of occupying syntactically. This prediction is borne out. Tigrinya has scrambling, but does not allow DPs from a lower clause to move into a higher clause.

(151) a. In-situ embedded subject

naomi kās [aman mānbār qāzi?-u ?il-a]
Naomi(f) quickly Aman(M) chair buy-3.M.SBJ COMP-3.F.SG

tāzarāb-a
say-3.F.SG

‘Naomi said quickly that Aman bought a chair.’

b. Extraction of the embedded subject

*naomi aman kās [mānbār qāzi?-u ?il-a] tāzarāb-a
Naomi(f) Aman(M) quickly chair buy-3.M.SBJ COMP-3F.SG quickly

INT: ‘ ‘Naomi said quickly that Aman bought a chair.”

In both (151a) and (151b), aman is the subject of the embedded clause. While the word order in (151a) is licit, where aman occurs below a low adverb in the higher clause, moving aman to a higher position in the clause, so that it occurs above the matrix clause adverb, results in ungrammaticality. The impossibility of positioning aman above a low adverb in the higher clause is consistent with the hypothesis that aman cannot move out of the embedded clause. It suggests more generally that movement of non-wh-elements across a clause boundary is prohibited.

In examples with multiple embedded shifty clauses, pronouns in the embeddedmost clause have access to the context of the lowest clause, where they originate, or the intermediate clause, but not the utterance context.

(152) a. Single embedding: embedded pronoun can refer to utterance context

birhane ?anā rā?ay-ate-ni ?il-u
Birhane(M) 1.SG.NOM see-3.F.SG-1.SG COMP-3.M.SG

‘Birhane says that I saw him’
b. Double embedding: embedded pronoun can’t access utterance context

\[
\begin{array}{c}
\text{almaz} \quad \text{birhane} \quad ?\text{anâ} \quad r\text{ä?ay-ate-ni} \quad ?\text{il-u} \quad ?\text{il-a} \\
\text{Almaz(F)} \quad \text{Birhane(M)} \quad 1.\text{SG.NOM} \quad \text{see-3.F.SG-1.SG} \quad \text{COMP-3.M} \quad \text{COMP-3.F.SG}
\end{array}
\]

‘Almaz said that Birhane said that I saw him.’

The first person pronoun in (152a) must refer to the speaker in the utterance context. A pronoun in the same position, but embedded under two context shifting operators, can no longer refer to the speaker in the utterance context. This outcome is consistent with the spirit of the NO INTERVENING BINDER constraint; the first person pronoun cannot reach across the domain where \textit{almaz} is the first person coordinate in order to reach the domain where the speaker in the utterance context is the first person coordinate. However, this example differs from a true NO INTERVENING BINDER configuration in that it lacks the eponymous intervening binder, which is meant to ensure that all the relevant contexts are actually being realized syntactically. The emergence of NO INTERVENING BINDER effects without an actual intervening binder in Tigrinya suggests that the presence of a shifted context is obligatory when possible.

The possible repair of moving the first person pronoun into a position where it can be interpreted with respect to the matrix context is independently ruled out because, as (151) shows, the movement required is prohibited.

(153) Cross-clausal movement cannot repair (152b)

\[
\begin{array}{c}
*\text{almaz} \quad ?\text{anâ} \quad \text{birhane} \quad r\text{ä?ay-ate-ni} \quad ?\text{il-u} \quad ?\text{il-a} \\
\text{Almaz(F)} \quad 1.\text{SG.NOM} \quad \text{Birhane(M)} \quad \text{see-3.F.SG-1.SG} \quad \text{COMP-3.M.SG}
\end{array}
\]

\text{INT: ‘Almaz said that Birhane said that I saw him.’}"

The utterance context is inaccessible to the indexical for the purposes of interpretation, because the indexical cannot reach a position where it would have access to that context.

The same effect can be demonstrated with only one instance of context change. The first person pronoun in (154) is prevented by some locality constraint from moving to a position where it can be interpreted in the matrix context. It also happens to be the case that another context intervenes, but it is not the presence of the intervening context that makes the intended interpretation impossible. In (154), there is an indexical in a clause...
that does not induce indexical shift, but that clause is itself embedded in a shifty clause. The context shifts only once in this structure, between the first and second clauses. The indexical in the embedded-most clause can only move to the edge of the clause where it originated, which is not sufficient to move it into a new context.

(154) Movement of double embedded indexicals

\[
\begin{align*}
\text{mahari} & \quad \text{almaz} & \quad \text{ni} & \quad \text{?adi-äy} & \quad \text{nissa} & \quad \text{kim-zi-barär-ät-a} \\
\text{Mahari(M)} & \quad \text{Almaz(F)} & \quad \text{DOM} & \quad \text{mother-1.SG} & \quad \text{3F.SG} & \quad \text{COMP-REL-fire-3F.SG-3F.SG} \\
\text{täzaräb-a} & \quad \text{?il-u} & \quad \text{ti-şasib} \\
\text{COMP-3.M.SG} & \quad \text{M-think}
\end{align*}
\]

‘Mahari, thought that Almaz said that I fired his mother.’

Despite the fact that there are only two contexts represented in (154), the utterance context and the embedded context, an indexical in the embedded-most clause can only be interpreted relative to the embedded context.

Based on this data, in Tigrinya, the structural position of a pronoun determines which contexts it can be interpreted with respect to. One way that the effect of position is evident is the requirement that unshifted pronouns occupy a higher position than shifted pronouns, but this effect also emerges as a constraint on the possible interpretations of multiply embedded indexicals.

**Preference for realizing person features**

In a language like Tigrinya that has both indexical shift and a syntactic mechanism for indexicals to escape shifty contexts, the logical possibility space of ways to express coreference is larger than that of English. For example, in English, a sentence like *Almaz said that she danced* must be expressed with a third person pronoun in the embedded clause, but in Tigrinya, it should in principle be possible to express the same meaning with either a first person pronoun that occupies a low position in the embedded clause or a third person pronoun that occupies a high position in the embedded clause. In actuality, only one of these options is a possible way to convey the intended meaning:
Example (155a) is the version of this sentence with a first person shifted pronoun in the embedded clause. Surprisingly, (155a) is the only grammatical version of this sentence on the intended meaning. (155b) and (155c) are attempts to convey the same meaning using unshifted third person pronouns ((155b) anticipates the discussion of verbal agreement below). (155b), which maintains first person verbal marking, is ungrammatical, while (155c), which changes the verbal marking to reflect third person features, is grammatical, but the third person pronoun cannot refer to Almaz.

The possibility space is also constrained for indexicals that do not refer to the matrix subject. For example, in (156), the only way to convey the equivalent of *Almaz said that I danced* is with a first person pronoun:

(156)  a. Speaker reference with embedded first pronoun

   almaz ?anā  saʕasiʕ-ā  ?il-a
   Almaz 1.SG.NOM dance-3.SG COMP-3.F.SG
   ‘Almaz said that I_spkr danced’

   b. No speaker reference with embedded third person pronoun

   almaz nissa saʕasiʕ-a  ?il-a
   INT: ‘Almaz said that she_j/wi_spkr danced’
The variant with a third person pronoun in the embedded clause, (156) is grammatical but cannot refer to the speaker.

Based on (155) and (156), there is a preference for realizing first person features if at all possible. The same holds for second person — it is always preferable to realize second person features over third person features, if possible.

(157)  
\[ \text{a. Coreference with shifted second person pronoun} \]
\[
\begin{align*}
\text{kidane} & \quad \text{ni} & \quad \text{almaz} & \quad \text{nissiki} & \quad \text{nifoti} & \quad \text{\?i-ki} & \quad \text{\?il-u} \\
\text{Kidane(M)} & \quad \text{DOM} & \quad \text{Almaz(F)} & \quad 2.F.SG & \quad \text{smart.F} & \quad \text{COP} & \quad \text{COMP-3.M.SG} \\
\text{nag\text{"u}-u-wa} & \\
\text{say-3.M.SG-3.F.SG} \\
\text{\textquoteright Kidane told Almaz\textsubscript{i} that she\textsubscript{i}/}\text{\textit{addr} are smart}\text{'}
\end{align*}
\]

\[ \text{b. No coreference with unshifted third person pronoun} \]
\[
\begin{align*}
*\text{kidane} & \quad \text{ni} & \quad \text{almaz} & \quad \text{nissa} & \quad \text{nifoti} & \quad \text{\?i-ki} & \quad \text{\?il-u} \\
\text{Kidane(M)} & \quad \text{DOM} & \quad \text{Almaz(F)} & \quad 3.F.SG & \quad \text{smart.F} & \quad \text{COP} & \quad \text{COMP-3.M.SG} \\
\text{nag\text{"u}-u-wa} & \\
\text{say-3M.SG-3.F.SG} \\
\text{INT:} & \quad \text{\textquoteright Kidane told Almaz\textsubscript{i} that she\textsubscript{i} are smart}\text{'}
\end{align*}
\]

(158)  
\[ \text{a. Addressee reference with unshifted second person pronoun} \]
\[
\begin{align*}
\text{kidane} & \quad \text{ni} & \quad \text{almaz} & \quad \text{nissiki} & \quad \text{nifoti} & \quad \text{\?i-y-a} & \quad \text{\?il-u} \\
\text{Kidane(M)} & \quad \text{DOM} & \quad \text{Almaz(F)} & \quad 2.F.SG & \quad \text{smart.F} & \quad \text{COP} & \quad \text{COMP-3.M.SG} \\
\text{nag\text{"u}-u-wa} & \\
\text{say-3.M.SG-3.F.SG} \\
\text{\textquoteright Kidane told Almaz\textsubscript{i} that you\textsubscript{\textit{addr/\textit{wi}}} are smart}\text{'}
\end{align*}
\]

\[ \text{b. No addressee reference with shifted third person pronoun} \]
\[
\begin{align*}
*\text{kidane} & \quad \text{ni} & \quad \text{almaz} & \quad \text{nissa} & \quad \text{nifoti} & \quad \text{\?i-y-a} & \quad \text{\?il-u} \\
\text{Kidane(M)} & \quad \text{DOM} & \quad \text{Almaz(F)} & \quad 3.F.SG & \quad \text{smart.F} & \quad \text{COP} & \quad \text{COMP-3.M.SG} \\
\text{nag\text{"u}-u-wa} & \\
\text{say-3.M.SG-3.F.SG} \\
\text{INT:} & \quad \text{\textquoteright Kidane told Almaz\textsubscript{i} that you\textsubscript{\textit{addr}} are smart}\text{'}
\end{align*}
\]

The examples in (157) contain two contexts: the utterance context, and the embedded context, where Kidane is the speaker and Almaz is the addressee. Relative to the utterance
context, Almaz should be referred to using third person pronouns, because she is not a participant in the utterance context, but relative to the embedded context, she is the addressee. (157) shows that a pronoun referring to Almaz must be realized in the embedded context, i.e., must be shifted.

By contrast, in (158), the embedded pronoun refers to the addressee in the utterance context, who is not represented in the embedded context. In this case, the pronoun must be realized in the utterance context, i.e., the unshifted context.

The contrast between (157) and (158) shows a preference for realizing second person features.

Though the literature on indexical shift contains cases of “optional” shift, it is optionality from a slightly different perspective, showing that first person indexicals can be interpreted with respect to either context.

(159) Shifted and unshifted first person indexicals in Uyghur

a. ahmet [men ket-tim] di-di
   Ahmet(M) [1SG.NOM leave-PAST-1SG] say-PAST3
   ✗‘Ahmet said that I left.’
   ✓‘Ahmet said that he left.’

b. ahmet [men ket-ti] di-di
   Ahmet(M) [1SG.NOM leave-PAST-3SG] say-PAST3
   ✓‘Ahmet said that I left.’
   ✗‘Ahmet said that he left.’

We have already seen that, in Tigrinya, first person pronouns can be interpreted with respect to either context, as in (160):

(160) a. Unshifted first person
   kidane `anä nifo? `iy-u `il-u
   Kidane(M) 1.SG smart COP-3.M.SG COMP-3.M.SG
   “Kidane says that I am smart”
b. Shifted first person

\[
\text{kidane} \quad \text{(?anā nifo?) ?iy-ā ?il-u}
\]

kidane(M) 1.SG smart COP-1.SG COMP-3.M.SG

“Kidane says that he is smart”

However, in a different sense, indexical shift is never optional for subjects and objects in Tigrinya: for a given meaning, there is only one possible realization of an indexical that will yield that meaning. For example, to convey that Kidane thinks that he himself is smart, (161a) is the only possible version of this sentence that conveys this meaning without employing an alternative type of clausal embedded, like a kim-zi- clause.

(161) a. Shifted pronoun required

\[
\text{kidane} \quad \text{(?anā) nāfo? ?iy-ā ?il-u}
\]

kidane(M) (1.SG) smart COP-1.SG COMP-3.M.SG

Kidane “Kidane says that he is smart”

b. Unshifted pronoun prohibited

\[
*\text{kidane nissu nāfo? ?iy-ā ?il-u}
\]

kidane(M) 3.M.SG smart cop-1.SG COMP-3.M.SG

INT: “Kidane thinks that he is smart”

c. Non-shifty clause

\[
\text{kidane nissu nāfo? ?iy-u ?il-u}
\]


“Kidane thinks that he_j/xi is smart”

Tigrinya shows a preference for realizing pronouns with local person features in configurations where there are two possible featural realizations of the pronoun in question. This means that, in configurations where a first or second person realization of a pronouns is possible, other realizations are ruled out. As will be discussed below, this is a requirement only for subject and object pronouns. For other pronominal elements, for example the object of prepositions, possessors, and pronouns contained within relative clauses, either a first/second person realization or a third person realization is available when both are possible.
Indexicals prefer to remain in their local context

The previous section described a preference for indexicals to be realized in a context where they are a participant when possible, but in indexical shift constructions, it is possible for an individual to be a participant in multiple contexts. A shifty clause under a predicate like “I said” or “I told you” will, for the author and addressee coordinates, replicate the utterance context, so that indexical shift will not be detectable. A shifty clause under a predicate like “You said” or “You told me”, “X told me” however, will result in a perceivable difference between the utterance context and the matrix context. Under “You said”, the utterance context addressee becomes the embedded context author, while in “X told me”, the utterance context speaker becomes the matrix context addressee.

These configurations bear on the constraint discussed in the previous section. If there is a preference in Tigrinya for pronouns to realize local person features, and both of the available contexts are ones in which the referent of the pronoun in question is a participant, then which context should the pronoun be realized in?

Example (162) is a construction where this question is relevant. The embedded pronoun, nissiňaktkum, refers to the speaker in the utterance context. Because the speaker in the utterance context is also the addressee in the embedded context, the second person pronoun can be used to refer to the speaker.

(162) Speaker referring embedded second person pronoun

kidane nissiňaktkum iti wädidir siʔir-kum ?iʔ-u
kidane(M) 2.F.PL.NOM DET competition win-2.F.PL COMP-3.M.SG

nägar-u-ii
say-3.M.SG-1.SG

“Kidane told me; that we\textsubscript{i+j} won the competition”

This example shows that the more local context is possible when realization of the pronoun in either context would involve participant features and that realization as a second person pronoun is possible when the alternative is realization as a first person pronoun.

It turns out that, for this example, not only is the local context realization and the second person realization available, it is obligatory. Replacing the second person pronoun in (162)
with a first person pronoun results in ungrammaticality.

(163)  No speaker referring first person pronoun

*kidane niįna ?iti wädidir siʔir-kum ?iʔ-u
kidane(M)  1.F.PL.ACC DET competition win-2.F.PL COMP-3.M.SG

nāgar-u-ni

INT: “Kidane told me, that we\textsubscript{i+j} won the competition”

In (163) the first person plural pronoun cannot be used to refer to the speaker in the utterance context. In this example, the verbal morphology that cross-references the first person plural pronoun reflects second person features, a fact that will be discussed later in this section. This kind of featural mis-match is required for unshifted indexicals, and is not the source of ungrammaticality in (163).

It is important to note that this example was constructed to avoid a particular confound. (164) is the same as (163), except that the embedded subject is singular. With the singular embedded subject, it is now possible to say the string in (164) with the intended meaning.

(164)  Overt first plural addressee pronoun

kidane niʕayi ?iti wädidir siʔir-ki ?iʔ-u nāgar-u-ni

“Kidane told me, that I, won the competition”

(164) appears to show an example that contradicts the finding in (163). It seems that the first person pronoun niʕayi, is a first person realization of the embedded indexical, whereas (163) only a second person realization of this element should be possible.

The apparent asymmetry between (163) and (164) is a deceptive result of the fact that Tigrinya is a pro-drop language. The first person singular pronoun in (164) is the addressee of the matrix clause, and not an unshifted subject. Evidence for this comes from (165), where the same first person singular pronoun is possible, even though the only possible singular pronoun would be the addressee.
Case marking can also differentiate between an addressee of the matrix clause and an argument of the lower clause in examples where the argument of the lower clause is nominative, like (162). The addressee argument of an example like (163) is accusative, which makes it observably different from the nominative embedded argument. Case alternations have been independently attested in indexical shift contexts by Shklovsky and Sudo (2014), where the shifted version of an argument might be nominative, but all unshifted pronouns must receive accusative case. In Tigrinya, no such case alternation occurs; for example, both sentences in (160) have nominative subjects, despite the fact that (160a) contains an unshifted pronoun and (160b) contains a shifted pronoun.

Putting aside this potential confound, the contrast between (162) and (163) is indicating one of two possible facts: first, it could be taken as evidence that second person pronouns are always preferable to first, if both are possible. Second, it could be an indication that the local context is preferable to a more distant context.

We can distinguish between these two options by engineering a configuration where a second person realization is in the utterance context, and the first person realization is in the local context. If (162) was a reflection of a preference for second person in Tigrinya, then the embedded indexical should be realized as second person. If, instead, (162) is revealing a preference for embedded indexicals to stay in their local context, then the realization should be first person. The examples in (166) reveal that the preference is for the local context, rather than for a second person realization.
(166)  
a. First person embedded indexical
nissiki niʔayi ?anā ni birhane riyaʔ-ā-yo
2.F.SG.NOM 1.SG.ACC 1.SG.NOM DOM Birhane(M) see-1.SG-3.M.SG

?il-ki nāgar-ki-ni
COMP-2.M.SG say-2.F.SG-1.SG

“You, told me that you, saw Birhane”

b. Second person embedded indexical
*nissiki niʔayi nissiki ni birhane riyaʔ-ā-yo
2.F.SG.NOM 1.SG.ACC 2.SG DOM Birhane(M) see-1.SG-3.M.SG

?il-ki nāgar-ki-ni
COMP-2.F.SG say-2.F.SG-1.SG

INT: ‘You, told me that you, saw Birhane’

The version with the first person embedded pronoun, (166a), is grammatical, while
the version with the second person pronoun, (166b) is not. Therefore, we can say that if
a Tigrinya pronoun has access to two different contexts of evaluation, and that pronoun
would have participant features in either context, then the pronoun will be realized in the
embedded context.

The generalization dictating the realization of person pronouns in Tigrinya is be sum-
marized in (167).

(167) Pronominal arguments in shifty clauses must be realized in (i.e. must syntactically
be inside of, morphologically reflect, and be evaluated with respect to) the most
local accessible context where the referent of that pronoun is a participant.

This generalization is formulated to apply only to subjects and objects, not to other DPs
within a clause (i.e. objects of prepositions, possessors).

In sentences where only one context is represented, this generalization is vacuously
satisfied. In sentences with two contexts, we can see the application of (167) in (168).

(168) (167) applied to sentence with two contexts
kidane [ʔanā nāfoQ ʔiy-ā] ?il-u
kidane(M) 1.SG smart COP-1.SG COMP-3.M.SG

“Kidane, thinks that he, is smart”
In (168), the bracketed constituent is the embedded context, while the material outside the brackets are located within the utterance context. Kidane is not a participant in the utterance context (he is not the person in the actual world uttering the sentence). He is, however, a participant in the embedded context. The embedded pronoun, ʔanä refers to Kidane. There are two contexts, where the embedded context is the most local one. In that embedded context, Kidane is a participant, so that is the context that the pronoun must be evaluated in.

In (169), the embedded pronoun refers to the speaker in the utterance context.

(169) Unshifted first person pronoun

kidane  [ʔanä  nifoʔti ʔiy-a] ʔil-u
kidane(M) 1.SG smart.F COP-3.F COMP-3.M.SG
“Kidane thinks that I am smart”

The speaker is a participant in the utterance context, but she is not a participant in the embedded context. The most local context for the embedded pronoun is the embedded context (as will always be the case for embedded pronouns) but it also has access to the speech context via movement. In the embedded context, the speaker is not a participant, but in the utterance context she is, so the most local context where the speaker is a participant will be the utterance context, even though it is less local than the embedded context. Therefore, as per the generalization in (167), the pronoun will be realized as first person and occur in the matrix context.

**Verbal agreement in indexical shift clauses**

Indexical shift constructions in Tigrinya can create configurations where the φ features on verbal morphology differs from the φ features on the nominal itself. Consider (170), where a first person pronoun occurs with third person verbal morphology.

(170) Mismatched phi features

kidane  ʔanä  nifuʔti ʔiy-a ʔil-u yi-ĥäšib
Kidane thinks that I(speaker) am smart
(171) *Matching phi features

*kidane ?anä nifu’ti ?iy-ä ?il-u yi-ḥasib

Kidane(M) 1.SG.NOM smart.(F) COP-1.SG COMP-3.M.SG 3-think

int: kidane thinks that I(speaker) am smart

The unshifted pronoun in (170) is referenced in verbal morphology as third person feminine, while the shifted pronoun in (171) occurs with the expected first person morphology.

The realization of non-subject/object indexicals

The previous section explained the conditions under which indexical shift obtains for pronominal elements selected by the verb. This section considers pronominal elements other than the subject or object of the embedded verb. The finding is that pronominal elements like possessors, objects of prepositions, and pronouns inside relative clauses do display optionality. They must always be interpreted within and morphologically realized with respect to the context they syntactically appear inside of, but independently available optional movement operations make both contexts available.

(172) Indexicals as objects of prepositions

a. kidane [?anä ?ab t’iq’-āy temin rā?ay-ā] ?il-u

kidane(M) 1.SG P next.to-1.SG snake see-1.SG COMP-3.M.SG

Kidane, said that he, saw a snake next to him.

b. kidane [?ab t’iq’-āy ?anä temin rā?ay-ā] ?il-u

kidane(M) P next.to-1.SG 1.SG snake see-1.SG COMP-3.M.SG

Kidane, said that he, saw a snake next to him.


kidane(M) 1.SG P next.to-3.M.SG snake see-1.SG COMP-3.M.SG

INT: Kidane, said that he, saw a snake next to him.

d. kidane ?ab t’iq’-o [?anä temin rā?ay-ā] ?il-u


Kidane, said that he, saw a snake next to him.

In (172), there are two indexical elements in the embedded clause that refer to Kidane: the first person subject and the object of the preposition. The subject must be first person,
as per the discussion above regarding the preference for pronominal elements to be realized with local person features. The object of the preposition can be either first person, as in (172a) and (172b), or third person, as in (172d). However, if the object of the preposition is third person, it must be above the first person subject or the result will be ungrammatical, as in (172c). This follows from the requirement that unshifted indexicals must occur above shifted indexicals.

The same logic applies to indexicals within relative clauses. In (173a), there is a first person pronominal object, as well as a first person subject inside the relative clause. Both refer to the speaker in the utterance context. Because pronominal arguments prefer to be realized with person features, the object pronoun must be first person, and therefore must be realized in the higher context. If both of these pronouns are first person, either order is possible. The relative clause can be above the object indexical as in (173a), or below the object indexical as in (173b). It is possible for the pronoun inside the relative clause to be realize relative to the shifted context, with third person features, but in this case the relative clause must be below the object, as in (173d). The variant with a third person pronoun in the relative clause above the first person object is grammatical, but the pronoun inside the relative clause cannot refer to the speaker in the utterance context, as in (173c).

(173) Indexicals inside relative clauses

a. kidane ni almaz [ʔita ?anā zi-ḥagiz-ku-a
   Kidane(M) DOM Almaz(F) DET.F 1.SG.NOM REL-help-1.SG-3.F.SG
   sābāyiti] niʕayi ḫabāʔ-at-a ʔil-u-wa
Kidane told Almaz that the woman I helped hid me

b. kidane ni almaz niʕayi [ʔita ?anā zi-ḥagiz-ku-a
   Kidane(M) DOM Almaz(F) 1.SG.ACC DET.F 1.SG.NOM REL-help-1.SG-3.F.SG
   sābāyiti] ḫabāʔ-at-a ʔil-u-wa
Kidane told Almaz that the woman I helped hid me
These examples show that, while subjects and object must be realized relative to the local context, other nominals are free to be realized in either context, provided that the syntax allows them to appear in a position that has access to that context.

### 3.3.1 Summary: Indexical shift in Tigrinya

This section has introduced several facts about indexical shift in Tigrinya. Both first and second person indexicals can be shifted under clauses headed by īl-. While Tigrinya typically allows nominal elements within a clause to have any order, in clauses with indexical shift, pronouns interpreted with respect to the utterance context (unshifted pronouns) must be above pronouns interpreted with respect to the shifted context (shifted pronouns). Syntactic constraints on movement, like clause-boundedness, can prevent a pronoun from accessing a context.

There is a preference to realize first or second features on a subject or object pronoun if possible. This preference can drive movement into a higher context, but if first or second person features are available in the local context, then the pronoun will stay put. If the movement that would yield a first or second person pronoun is independently ruled out, for example because it crosses a clause boundary, then third person realization of subject and object pronouns is possible. These constraints do not apply to other nominal elements in the clause; possessors, objects of prepositions, and nominals inside relative clauses do not show a preference for realizing person features, but are still subject to the constraint the
unshifted pronouns must be higher than shifted pronouns.

### 3.4 Formal models of indexical shift

Recall from section 3.1 that the defining property of an indexical is that it is, in the words of Kaplan (1989), “directly referential”, meaning it picks out a referent directly from the context, without a mediating ‘sense’. Focusing for the moment on English, we can see how this property of indexicals in formalized by looking at the analysis that Kaplan (1989).

(174) is the denotation for the first person pronoun in Kaplan (1989).

\[
[\text{I}]^{c,f,t,w} = c_A
\]

In his system, any expression will be associated with four parameters of interpretation, including time \((t)\) and world \((w)\) parameters and an assignment function \((f)\), and a context parameter, \(c\). Only the context parameter, \(c\), will influence the reference of \([\text{I}]\), as indicated by the fact that in (174) the other parameters are not part of the denotation. For Kaplan (1989), contexts are defined as follows:

(175) \(C\) is a nonempty set (the set of contexts)

(176) If \(c \in C\), then:
   i. \(c_A \in U\) (the agent of \(c\))
   ii. \(c_T \in T\) (the time of \(c\))
   iii. \(c_P \in P\) (the position of \(c\))
   iv. \(c_w \in W\) (the world of \(c\))

The parameter of interpretation for the context, \(c\), is made up of agent (the person speaking), time, position, and world coordinates. In the kaplani an system, these coordinates are always set to the actual agent, time, position, and world of the utterance, although later proposals will modify these values to account for indexical shift. The analytical choice of
which specific coordinates make up the context is based on the types of indexicals that an analysis intends to account for. Kaplan (1989) was concerned with several different types of indexicals, including temporal and locative indexicals, as well as person indexicals. For the purposes of this chapter, the temporal and locative coordinates will not be crucial, but I will need an additional addressee coordinate to account for second person indexicals. In discussing the different analyses of indexicals that employ context parameters, the variation in what constitutes a coordinate of the context is not particularly consequential.

Kaplan (1989) states that operators in English are “at most intensional” meaning that they can change the world of evaluation, $w$, but will never interact with $c$ or any of the values that $c$ contains (including $c_w$, the world coordinate contained in the context tuple). This captures the fact that “I” will refer to the speaker regardless of any intensional quantification, because the context parameter $c$ will always be available and will never vary. An example of this is in (177), where *thinks* quantifies over possible worlds, but does not interact with the context, so that the proposition *I am short* is evaluated with respect to $w'$, but the pronoun *I* refers directly to the context, $c$.

(177) a. $\llbracket$ Lauren thinks that I am short $\rrbracket^{c,f,t,w}$

b. $\forall w'$ compatible with what Lauren thinks in $w$, $[c_A \text{ am short}]^{c,f,t,w'} \rightarrow 1$

By introducing data from languages with indexical shift into this system, we will either need to revise the aspects of Kaplan’s analysis that deal with context variables, i.e., by allowing for quantification over contexts, or we will need to analyze indexicals in shifty languages as not being truly indexical. We will ultimately settle on the former variety of analyses. To demonstrate why, I will consider the major approaches to shifted indexicality that do not employ context shift: either treating indexical shift contexts as instances of direct quotation, or treating shifted indexicals as logophors.

**Quotational theories of indexical shift**

Returning to an observation discussed briefly in Chapter 2, indexical shift sentences often closely resemble instances of direct quotation. An analysis of indexical shift pursued in Cappelen and Lepore (2003); Maier (2007) is that indexical shift actually involves an
embedded quotation. This would make indexical shift languages basically English-like in allowing embedded quotations, which, by virtue of being a word-for-word replication of a prior utterance, will use first person features that orient to the origin of the original speech event.

(178)  
   a. Dylan said that he hates avocados
   b. Dylan said “I hate avocados”

Under this analysis, indexicals are contained within a clause or some smaller constituent that is being directly quoted. There is a clear prediction here: instances of direct quotation are unlike most embedded clauses in that they are completely opaque to any operation from outside the quoted content. If the data under discussion is actually quotation, we should be unable to extract out of it and unable to form a question based on the quoted material. This is true for instances of quotation in English, as illustrated by the ungrammaticality of (179).

(179)  
   a. Dylan said that he hates avocados.
   b. What did Dylan say that he hates?
   c. Dylan said, “I hate avocados”.
   d. *What did Dylan say “I hate”?

Tigrinya indexical shift clauses pattern with English embedded clauses and not with English direct quotation in allowing question formation to target the embedded clauses:

(180)  
   Wh- questions with shifted indexicals in Tigrinya
   ni män ?iy-ä kidane ?anä räyay-ä ?il-u
   DOM who AUX-1SG Kidane (1.SG) see-1.SG COMP-3.M.SG
   “Who did Kidane say that he saw’?”

(181)  
   Wh- questions with shifted indexicals in Tigrinya
   ?äyinay drama ?iy-u kidane tawasi?-ä ?il-u (täzaräb-u)
   which movie COP-3.M.SG kidane act-1.SG COMP-3M.SG (say-3M.SG)
   “Which movie did Kidane say that he acted in?”

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Wh- questions with shifted indexicals in Tigrinya

kindä sa?at ?i[y]-u kidane ?anää kāmāša ?il-u
what time COP-3M.SG Kidane 1.SG.NOM come-1.SG COMP-3M.SG

(tāzārāb-u)
(say-3.M.SG)

‘What time did Kidane say that he would come?’

Examples (180-182) are long-distance wh- questions targeting a clause with indexical shift. There is movement of wh- words outside of the indexical shift clause, which should be impossible on a quotational reading. It is therefore implausible to posit that indexical shift clauses in Tigrinya are examples of direct quotation.

Logophoric theories of indexical shift

A second proposal that avoids positing shifty contexts is that shifted indexicals are actually logophors. Logophors are a kind of pronoun that occurs only in attitude predicates to refer to the attitude-holder. Functionally and conceptually they are similar to a shifted first person indexical in that they orient to a perspective holder, although logophors are usually distinct morphologically from other pronouns. For example the logophor yē in (183) must refer to kofī.

(183) Logophors in Ewe

kofī be ye dzo
kofī COMP LOG smart
‘Kofi, thinks that he is smart’

The logic of classifying a particular element as either an indexical or a logophor hinges on there being a concrete difference between the two categories independent of the morphological form. This is a question taken up prominently in (Anand (2006); Deal (2017)). Theory-internally, these works draw quite substantial differences between indexical shift, which is ultimately a phenomena that relies on the semantics making available different contexts, and logophoric binding, which is a syntactic dependency between an antecedent in the form of a logophoric operator or pronoun, and an obligatorily bound logophoric pronoun. Empirically, the differences are subtle but detectable, and will be properties we return
to once more of the theoretical infrastructure has been laid down. Indexicals are subject to a constraint called **SHIFT TOGETHER**, Anand (2006), discussed briefly above, which says that all indexicals within a clause must be either shifted or unshifted, but mixing of contexts is not possible. There are apparent exceptions to this generalization, in which shifted and unshifted pronouns appear in the same clause, but these are necessarily arranged such that all unshifted pronouns precede all shifted pronouns, and therefore **SHIFT TOGETHER** holds below a certain point in the clause. This means that if there are constraints placed on where a shifted pronoun can occur in a clause, the constraints will force the shifted pronoun to be low, rather than high.

On the other hand, logophors are subject to the **de re blocking effect**. This is typically described as ban on configurations where a de re expression c-commands a coreferential, obligatorily de se expression (i.e. a logophor) within a given domain, typically the clause. The intuition here is that there is a binding relation between an operator at the edge of the clause and the logophor that the presence of a de re element can disrupt. This means that, in configurations where there is a logophor and a coreferring de re element in a c-command relationship, the logophor must be above the de re element.

Data from Yoruba (Deal (2017), taken Adesola (2005)), shows this pattern. Yoruba has a “strong” third person pronoun, óun, which functions as a logophor in embedded attitude contexts in the sense of obligatorily referring to the attitude holder and requiring a de se reading. Another “weak” third person pronoun, ó, behaves like a normal third person pronoun in attitude contexts.

(184) Constraints on coreference in Yoruba

[Deal (2017)]

olú sọ pé ój/wi rí hàbá óun
Olu say that he(weak) see father his(strong)
‘Olu, said that he saw his father’

Example (184) shows the de re blocking effect. There are two pronouns in the embedded clause that could refer to the speaker. One is the logophoric óun, which must refer to Olú, and the other is the normal third person pronoun ó, which c-commands óun. This sentence is grammatical on a reading where ó refers to someone other than Olú. If ó refers to Olú, even if it is read de se, the sentence is ungrammatical. In similar examples where the
regular pronoun does not c-command the logophoric pronoun, no ungrammaticality arises. In (259a), there is no c-command relation between the two pronouns in the embedded clause, while in (259b), the logophor c-commands the non-logophoric pronoun. Neither of these configurations imposes the requirement that the two pronouns have disjoint reference.

(185) Non-de re blocking configurations in Yoruba

a. olúk sọ pé [bàbá rẹ k,j] ti rí [iýá óunj k ]
   Olu say that father his(weak) AUX see [mother his(strong)]
   ‘Olu_k said that his_{k,j} father has seen his_k mother’

b. olúk sọ pé óunj ti rí iwé rẹi,j
   Olu say that he(strong) AUX see book his(weak)
   ‘Olu_k said that he_i has seen his_{i,j} book’

These two generalization, de re blocking and shift together, make conflicting predictions. We should be able to determine whether an element is a logophor or an indexical based the kind of syntactic constraints it is subject to in the presence of coreferential, non-de se elements.

(186) Logophors

a. ✓ ... that [ OP_{log} [LOG_i [ ... [pro_i ] ] ] ]

b. * ... that [ OP_{log} [pro_i [ ... [LOG_i ] ] ] ]

(187) Shifted indexicals

a. ✓ ...that [ 3rd_i [ [ ] ... [ 1st_i ] ] ]

b. * ...that [ 1st_i [ [ ] ... [ 3rd_i ] ] ]

It is possible to show that, in Tigrinya, SHIFT TOGETHER applies if we exploit the fact that non-arguments referring to an author can be either shifted or unshifted. (253) shows that if a shifted indexical and an unshifted indexical corefer and occur in the same clause, the shifted indexical must be lower in the structure than the unshifted indexical.

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2 In contradistinction to subjects and objects, which must be shifted
(188) Ordering constraints on indexical interpretation in Tigrinya

a. kidane ni ?ark-ä a?nä ri?y-ä-u ?il-u
   Kidane said he saw his friend

b. kidane ni ?ark-u ?anä ri?y-ä-u ?il-u
   Kidane said he saw his friend

   * Kidane(M) 1.SG.NOM DOM friend-3.M.SG see-1.SG-3.M.SG
   ?il-u
   COMP-3.M.SG
   INT: Kidane said that he saw his friend

d. kidane ?anä ni ?ark-ä ri?y-ä-u ?il-u
   Kidane(M) 1.SG.NOM DOM friend-1.SG see-1.SG-3.M.SG comp-3.M.SG
   Kidane said he saw his friend

De re blocking configurations are not possible to construct in Tigrinya. Logophors refer to the perspective holder, so the intervening pronoun will also need to refer to the perspective holder, and will need to be in a position to c-command the logophor. This means that the intervenier would need to be the subject or object, rather than an indexical contained with a DP or PP, which could not c-command another nominal in the clause. However, subject and object pronouns that refer to the perspective holder must be shifted, as discussed in section 3.3, and therefore could not be the kind of non-logophoric pronoun that would intervene for de re blocking. Though it would be preferable to be able to construct these examples to confirm the conclusion that shifted indexicals are not logophors, the data in (253c) show that indexicals in Tigrinya do not behave like logophors. (253c) is ungrammatical, but structurally parallel to the example in (259b), which shows that logophors are acceptable in this configuration.
3.4.1 Context shift theories of indexical shift

Given the evidence that indexical shift is not a type of direct quotation, and that shifted indexicals form a class distinct from logophors, the remaining option is to permit that, in some languages, there are context-shifting operations of the type described in Kaplan (1989) as “monstrous”. There are two major approaches to shifting context: pronoun-based Schlenker (2003, 2011) and operator-based Anand and Nevins (2004); Anand (2006); Shklovsky and Sudo (2014); Deal (2017). In general, the operator view is more prevalent, although some recent proposals have suggested that elements of the pronoun based view may be necessary in some languages (Sundaresan, 2018). The crucial difference between the two approaches is where cross-linguistic variation in indexical evaluation comes from. On the pronoun based view, pronouns in shifty languages have different semantics than those of non-shifty languages. On the operator based view, pronouns are the same in every language, but some languages have an operator that shifts the context of evaluation for pronouns, yielding shifty readings.

Pronoun-centric analyses

Recall Kaplan (1989)’s claim that intensional operators in English are “at most intensional”, meaning that they can alter the world parameter, but not the context parameter. Attitude verbs are one such operator.

The semantics given for say in (189) reflect the standard assumption that attitude verbs quantify over possible worlds, and that propositions are functions from worlds to truth values. Recall also that indexicals like “I” will, on his assumption, have a denotation as in (190), and therefore will be evaluated with respect to $c$, which reflects the speech context.

\[(\text{say})^{w,c} = \lambda p_{s,t}. \lambda x e \forall w' \text{ s.t. } w' \text{ is compatible with what } x \text{ has said in } c, p(w) = 1\]

\[(I)^{w,c} = \text{SPEAKER}(c)\]

The core proposal in Kaplan (1989) is that operators will not change the value of $c$, and therefore that the speaker in the utterance context will always be available.
In order to provide a shifted interpretation of indexicals, Schlenker (2003) reanalyses attitude verbs as quantifiers over contexts, rather than quantifiers over worlds, and propositions as functions from contexts to truth values.

(191) \[
\text{[say]}^{w,c} = \lambda p_{k,i}. \lambda x \forall i \text{ such that } SPKR(i) = x \text{ and } w_i \text{ is compatible with what } x \text{ has said in } c, p(i) = 1
\]

In (191), \(i\) is a context of type \(k\), made up of a tuple of coordinates containing at least \(\langle\text{WORLD}, \text{SPEAKER}, \text{ADDRESEE}\rangle\). The parameter \(c\) is then just a special case of \(i\) where all of the coordinates it contains are set to the values that hold in the actual world. Changing attitudinal quantification from quantification over worlds to quantification over contexts is crucial because it introduces this embedded context, \(i\), in which the matrix subject is the \text{SPEAKER} coordinate. This allows for a new denotation of the first person pronoun that will return the \(SPKR(i)\) rather than \(SPKR(c)\). This denotation is in (192), which assumes that a first person pronoun will always have a sister that is a variable of type \(k\).

(192) \[
\text{[I]}^{c,g} = \lambda i_k. \text{SPEAKER}_i.
\]

(193) a. jon jəŋna nə-ı̊n yil-all
John hero be-1.SG.obj 3M.say-3.M

‘John said that he is a hero’
b. \[
\forall i \text{ s.t. } \text{SPKR}_i = \text{John} \land w_i \text{ is compatible with what John has said in } c, \\
\text{SPKR}_i \text{ is a hero in } i = 1
\]

The tree in (193b) shows the context variables $i_5$ abstracted over and bound the quantifier in (191). This derives the shifted reading required to get the correct interpretation of (193a).

Given the changes to Kaplan (1989) described so far, the Schlenkarian system would generate shifted readings of all indexicals embedded under attitude predicates in every language, which is not the intended result. To account for this, he posits that there is another type of indexical “$I$”, with the denotation in (194).

(194) \[
[I]^{c,g} = \lambda i.\text{SPEAKER}(c)
\]

The definition in (194), like the one in (192), assumes that $I$ will take a context variable as its sister, but (194) differs from (192) in that the context variable does not actually impact the interpretation, which is now relative to the context parameter $c$, making it essentially the same as the denotation for $I$ assumed in Kaplan (1989). This denotation results in indexicals that are insensitive to attitudinal quantification, and hence, English-like.

Under this system, cross-linguistic variation depends on whether the denotations for indexicals in the language in question is like (192) or (194), or whether the lexicon contains
both. The core insight here is that there actually are operations in grammar that shift contexts, not just worlds. There are some predictions that come out of this system, however, that do not hold up. First, he considers all attitude verbs to be quantifiers over contexts, rather than quantifiers over worlds, and therefore that languages with indexical shift should have shifted indexicals under any attitude predicate. The actual facts, however, is that languages typically only allow shifting in a subset of their attitude predicates (see section 3.2). A second prediction is that languages with optional indexical shift should be able to freely place shifted and unshifted indexicals in the same clause. The Shift Together constraint, as well as the systematic requirement that exceptions to this constraint require a specific syntactic configuration, make it clear that there must be restrictions imposed on combinations of indexicals, and not just on individual indexicals, as Schlenker (2003).

Operator-centric analyses

As with the previous model of indexical shift, an operator based analysis also treats attitude predicates as quantifiers over contexts, rather than worlds. On that account, the actual context is always available as a parameter, and the local context bound by the attitude predicate, so both are simultaneously available for an indexical to access. In the operator-centric views of Anand and Nevins (2004); Anand (2006); Deal (2017) a.o. attitudinal quantification is still over contexts, rather than worlds, but the embedded context is made available for the interpretation of indexicals by overwriting the original context parameter $c$ with the embedded context parameter $i$ with an operator below the attitude predicate. On an operator-centric analysis, all indexicals are evaluated with respect to the context parameter, but that context parameter will be overwritten in indexical shift context to yield shifty readings. A major consequence of these analytical differences is that the operator-centric approach predicts that an indexical will only ever have access to one context of evaluation, and whether that context is the actual context or a derived context depends on the syntactic position of the indexical.

(195) a. jon jōgna no-iññ yil-all
   John hero be-1.SG.obj 3M.say-3.M
   ‘John$_i$ said that he$_i$ is a hero’
b.  \[\forall i \text{ s.t. } SPKR_i \text{ is } \text{ a hero in } i = 1\]

\[\lambda x. \forall i \text{ s.t. } SPKR_i = x \text{ is compatible with what } x \text{ has said in } c, \text{ SPKR}_i \text{ is a hero in } i = 1\]

\[\lambda i. \lambda x. x \text{ is a hero in } i\]

\[\lambda p. \forall i \text{ s.t. } SPKR_i = x \text{ is compatible with what } x \text{ has said in } c, p(i) = 1\]

The two models make contrasting predictions. Under the pronoun-centric model, whether a language has indexical shift depends on the lexical properties of the pronouns in that language, and optional indexical shift is the result of both types of pronouns being simultaneously available in a single language. This means that a language will either have indexical shift under all attitude predicates (if the language had only shiftable pronouns), no indexical shift at all (if the language has only unshiftable pronouns), or free variation between shiftable and unshiftable pronouns. If a language has both shiftable and unshiftable pronouns, then there should not be any restrictions on the relative positions or ordering of shiftable or unshiftable pronouns. Further, there is no mechanism that would allow a pronoun to target a context other than the utterance context (encoded as a parameter of interpretation) or the local context (quantified over by the embedding predicate), so in doubly embedded sentences, the pronouns in the embedded-most clause should not be able to access the intermediate context, on a schlenkarian analysis.

Under the monster-centric approach, variation lies in the availability of a context-shifting monster operator. A language will either lack such an operator, and consequently
lack indexical shift, or it will have the operator, and consequently have indexical shift. Recall that in Schlenker (2003), the denotation of an attitude predicate included the context of evaluation for shifted indexicals, so that attitude predicate and context shift operator are one and the same entity. On the Anand (2006) analysis, the monster operator is distinct from the attitude predicate, allowing for the possibility that a language might allow indexical shift under only a subset of attitude predicates, which the empirical data seems to support the need for. Separating the monster operator from the verb also creates a syntactic configuration where there is space below the attitude predicate but above the monster operator where a pronoun will be under the scope of attitudinal quantification, but above the shifted region of the clause, meaning that embedded pronouns in this position will not get a shifty interpretation.

The result is a doubly-indexed theory where elements in the embedded predicate are evaluated with respect to the world coordinate of $i'$, but where indexical expressions are evaluated with respect to $c$, which reflects the matrix context. He gives the following example:

(196) a. $\llbracket \text{believe} \rrbracket^{c,i} = \lambda P \forall R_i [P(i') = 1]$

b. $\llbracket \text{believe [that I am here]} \rrbracket^{c,i} = 1 $ if $\forall R_{\text{Auth}(c)}$ is located at LOC$(c)$ in WORLD$(i')$ at TIME$(c)$.

Example (196) illustrates an English-like language with no shifting of indexicals. Even though there is the local context, $i'$, available for the evaluation of indexicals, the denotations of the indexicals themselves are such that they ignore the local context and refer to the relevant coordinate in the utterance context.

Languages with indexical shift contain an additional operator that overwrites $c$ with the local context $i'$. This is the “monster operator” (terminology from Shklovsky and Sudo (2014).

(197) $\llbracket \alpha \rrbracket^{c,i} = \llbracket \alpha \rrbracket^{i,i}$

In the context of (198) this operator could be inserted between the attitude predicate and the proposition to yield a shifty interpretation:
Unlike the schlenkerian system, this analysis captures the variation between shifty and non-shifty languages without positing different sets of pronouns. This analysis consequently makes different predictions, specifically with respect to the No Intervening Binder and Shift Together generalizations discussed in section 3.2.1.

Shift Together prohibits indexicals within a clause from taking their reference from different contexts, as in (199).


vizeri rojda bill-ra va kr ez to-ra miradiša
Yesterday Rojda Bill-to said that I you-to angry.be-PRES

“You Yesterday Rojda said to Bill, ‘I am angry at you’.”

*“You Yesterday Rojda said to Bill, ‘AUTH(c) is angry at ADDR(c)’.”

*“You Yesterday Rojda said to Bill, ‘AUTH(c) am angry at you’.”

*“You Yesterday Rojda said to Bill, “I am angry at ADDR(c)”.”

On the account proposed in Anand (2006), this constraint follows straightforwardly from the fact that the monster operator is either present at the edge of the embedded clause, yielding shifted readings for both embedded pronouns, or it is absent, yielding unshifted reading for both. The exceptions described in Shklovsky and Sudo (2014) exploit movement of the indexical to a position above the operator to capture exceptions in a systematic way. By contrast, the pronoun-centric view posits no cooccurrence constraints on the interpretation of indexicals within a clause, as his theory again allows the insertion of either the variant of the indexical that accesses the matrix context or the variant that accesses the local context.

No Intervening Binder states that within a clause with multiple indexicals, either both of the indexicals must shift, or neither or them can shift, but configurations where two indexicals within a given clause are evaluated with respect to different contexts are ruled
out. Indexicals that move to a position outside the scope of a shifty operator give rise to apparent exceptions to this generalization.

**No Intervening Binder** is defined by Anand (2006) as:

(200)  **No Intervening Binder Constraint**

A shiftable ind\textsubscript{1} cannot pick up reference from a context C\textsubscript{A} if there is an intervening context C\textsubscript{B} which another ind\textsubscript{2} picks up reference from.

\[
\text{C}_A \ [ \ ... \ \text{modal} \ \text{C}_B \ ... \ \text{[ind}_1 \ ... \ \text{modal} \ \text{C}_C \ ... \ \text{[ind}_2 \ ]] \]
\text{ i. }

\[
* \ \text{C}_A \ [ \ ... \ \text{modal} \ \text{C}_B \ ... \ \text{[ind}_1 \ ... \ \text{modal} \ \text{C}_C \ ... \ \text{[ind}_2 \ ]] \]
\text{ ii. }

In the operator-centric analyses, this pattern arises from the fact that the original context is actually overwritten by the derived context, making the original context unavailable within the scope of the monster operator. Recall that exceptions to the Shift Togetherness generalizations are possible if the indexical is occupying a high position: this is because the indexical has moved outside the scope of the monster operator to access the higher context. In configurations like (200ii), the ind\textsubscript{2} is not in a high enough position to access C\textsubscript{A}.

The emphasis here on the presence of a second indexical picking up reference from the intervening context is to ensure that there is actually an intermediate monster operator and hence an intervening context. In some of the languages under discussion in Anand (2006), the monster operator is never obligatory even when it is possible, so in (200ii), the pronoun ind\textsubscript{i} picking up its reference in context C\textsubscript{B} indicates that the context C\textsubscript{B} actually is available, and that C\textsubscript{A} is overwritten by C\textsubscript{B} before being again overwritten to C\textsubscript{C}. If this is the case, there is no way for ind\textsubscript{2} to access C\textsubscript{A}. If, however, there is no operator overwriting C\textsubscript{A} to C\textsubscript{B}, then ind\textsubscript{2} can access C\textsubscript{A} by moving over C\textsubscript{C}, or alternatively omitting C\textsubscript{C} entirely, if the language permits.

This context-overwriting system in Anand (2006) accounts for No Intervening Binder constraint, but the system proposed by Schlenker (2003) makes no such prediction, as he allows for either the variant of a pronoun sensitive to the local context i or the variant sensitive to the utterance context c to be inserted freely as long as both are available in the lexicon.
3.4.2 The semantics of Tigrinya indexical shift

The operator-centric model of indexical shift outlined above can be applied to Tigrinya by adapting the mechanisms from Anand (2006) to the analysis of perspectival clauses in Chapter 2. The Tigrinya data in the previous section revealed a number of syntactic correlates of indexical interpretation, many of which will follow from the operator-centric model, which determines the reference of an indexical based on the position it occurs in.

Recall that the context for indexical shift in Tigrinya is within ʿil- clauses. In chapter 1, I presented an analysis of these clauses as containing a functional head that introduces a perspective holder.

(201) Tigrinya ʿil- constructions
almaz may yi-harim all-o ʿil-a (tāzarāb-a)
“Almaz said that it rained”
Anand (2006) identifies attitude verbs as the elements that introduce attitudinal quantification, as in the standard analysis. The arguments in the previous chapter propose to locate the quantificational element in the complementizer, so the denotation of tāzarāb- is fairly minimal, requiring only that there is some event that is a saying event, as in (203).

(203) \[ [\text{tāzarāb-}] = \lambda s. \text{say}(s) \]

The complement of tāzarāb- is a clause containing a perspectival projection, PerspP. This projection is headed by ?il-, and takes a author argument in its specifier. In (201), this argument is pro, but the last chapter showed that the specifier can also be an overt nominal element.

Also in the previous chapter, I adopted an analysis of complementation whereby the quantificational force of attitude predicates is actually contained in a complementizer-like
head in the periphery of the embedded clause. Tigrinya, I identified the element responsible for attitude quantification as ?il-. The semantics of ?il- are given in (204).

\[(204) \ [ ?il- ] = \lambda p_{(w,t)} \cdot \lambda x_e \cdot \lambda s_v . Author(\lambda s_v . ) (s) \wedge \forall w' \in Compatible(s) \rightarrow p(w') \]

To review, (204) treats propositions as functions from contexts to truth values. ?il- takes a proposition and an individual and says that the individual is the author of an attitude event, s, and that in all contexts compatible with this attitude event, the proposition is true.

In both Schlenker (2003) and Anand (2006) analyses of indexical shift, attitudinal quantification was over contexts, not worlds. A context, i is of type \(\kappa\) and is defined as a tuple of coordinates, \(\langle \text{WORLD, AUTH, ADDR, LOC} \rangle\). The reason for this is that, in embedded clauses with indexical shift, the AUTH should be the attitude holder, rather than the speaker in the utterance context, so that an indexical pronoun that refers to the author will be able to find the attitude holder as its reference.

The perspectival complementizer should therefore be altered from the definition in (204) so that it quantifies over contexts rather than worlds.

\[(205) \ [ ?il- ] = \lambda p_{(\kappa i)} \cdot \lambda x_e \cdot \lambda s_v . Author(\lambda s_v . ) (s) \wedge \forall i' \in Compatible(s) \rightarrow p(i') \]

This minimal change will not by itself change the meaning of a perspectival clause. The embedded proposition p will be interpreted with respect to \(\text{world}(i')\), and other context-sensitive elements will be interpreted with respect to the utterance context c.

Following Anand (2006), we can think of Tigrinya as containing a monster operator, \(\text{ oid} \), which is an operator that shifts the context parameter to the values of the local context.

\[(206) \ [ \text{ oid} \alpha ]^{c,i} = [\alpha]^{i,i} \]

The monster operator will use the fact that the perspectival complementizer in (205) quantifies over contexts by taking that context, i, and using it to overwrite c. The change from quantification over worlds to quantification over contexts in (204) and (205) was crucial for this reason, because in order for the monster operator to overwrite the default context, there had to be an embedded context available.
?il- and ⬕ work in tandem to create shifted contexts. ?il- quantifies over possible contexts, and for each context being evaluated, ⬕ uses that context to overwrite the utterance context.

(207) Tigrinya ?il- construction
almaz ?anä siʕasiʕ-ä ?il-a
Almaz(f) 1.SG.NOM danced-1.SGCOMP-3.F.SG

'Almaz, said that she, danced'
The tree in (208) shows how these elements come together to yield shifty readings. Attitudinal quantification comes from ?il-, which takes as its argument a clause that is of type \( \langle \kappa, t \rangle \) after the context coordinate of the embedded clause is abstracted over. The embedded clause contains a monster operator, which changes the context parameter \( c \) to the values of \( i \) for all elements within its scope. When the context-sensitive first person pronoun ?anä is evaluated under the scope of the monster operator, it will denote the author the shifted context \( c \), which has been set to the author of \( i \).

(209) almaz ?anä siqasiq-a ?il-a
   Almaz(F) 1sg.NOM danced-3.F.SG COMP-3.F.SG
   ‘Almaz said that I danced’
From the analysis laid out above, we can easily derive the result that embedded indexicals interpreted with respect to the utterance context must move to a higher position in the embedded clause. This is shown in (210), where the embedded indexical has moved into a position above the monster operator. It is therefore in a position where it will be evaluated relative to the actual world, and refer to the person uttering the sentence.

The pronoun-centric view, as proposed in Schlenker (2003), would have difficulty capturing the facts above. On his analysis, all attitude predicates quantify over possible contexts, introducing an embedded context that an indexical could, in principle, take its referent from, resulting in a shifty reading. The factor that determines whether a pronoun finds a referent in the embedded context or the utterance context is the semantics of the pronoun itself. Each pronoun is lexically specified to refer to an element in either the utterance context or the embedded context.

Shifted readings of indexicals are possible in ?il- clauses, but not kim-zi- clauses. If variation in pronoun shiftability is truly due to variation is the denotation of the indexical itself, then the pronouns in kimzi- clauses would need to have a different denotation than the pronouns in ?il- clauses. There are several reasons to be skeptical about this possibility. First, there is no apparent difference in the forms of the pronouns between the two clause types, and therefore no prima facie reason to believe that the Tigrinya lexicon contains two different types of pronouns.

Even if we accepted the hypothesis that there are two superficiality identically but semantically distinct sets of pronouns in Tigrinya, there are still compelling reasons to reject this line of analysis. One such piece of evidence comes from the behavior of non-shifty clauses embedded within shifty clauses, as in (211).

(211) Multiple embedded clauses in Tigrinya

\[
\begin{align*}
\text{mahari} & \quad \text{almaz} & \quad \text{ni} & \quad \text{?adi-\text{"ay} nissa} & \quad \text{kim-zi-bar\text{"ar\text{"a}t-a} } \\
\text{Mahari(M)} & \quad \text{Almaz(F)} & \quad \text{DOM} & \quad \text{mother-1.SG} & \quad \text{3F.SG COMP-REL-fire-3F.SG-3F.SG} \\
\text{t\text{"azer\text{"ab-a} } & \quad \text{?il-u} & \quad \text{ti-\text{"asib} } \\
\text{say-3.F.SG} & \quad \text{COMP-3.M.SG} & \quad \text{M-think} \\
\end{align*}
\]

‘Mahari thought that Almaz said that I spoke fired his mother.’
The embedded-most CP is a *kimzi* -clause, which does not induce indexical shift within its scope. By the assumptions laid out in Schlenker (2003), this means that the pronouns in *kemze* clauses are sensitive to the utterance context, rather than the local context. However, when embedded under an *?il* - clause as in (211), the pronouns in the *kimzi* - clause are not evaluated with respect to the utterance context, but instead, are evaluated with respect to the context introduced by the matrix clause. In the system proposed in Schlenker (1999, 2017), pronouns can either refer to the context variable quantified over by the predicate that embeds them, or they can refer to the utterance context, but there is no way to force an indexical to refer to an intermediate context, as is required for (211).

The monster-centric view of indexical shift, as proposed in Anand (2006) avoids these issues. Rather than attributing the presence or absence of shifted readings of indexicals to the denotation of the indexicals themselves, he posits a context-shifting monster operator that may or may not be present in embedded clauses. Because *?il* - clauses shift and *kimzi* clauses do not, according to the analysis in Anand (2006), *?il* - clauses must contain a monster operator, and *kimzi* - clauses must not. Locating the difference between *kemze*- and *?il* - clauses in the functional structure of their peripheries seems more appropriate than locating that difference is the meaning of the pronouns they contain, as the complementizer layers of the two clause types are morphologically different, but the pronouns they contain are not.

Further, because the monster operator shifts the context for anything in its scope, the data in (211) follows from the analysis in Anand (2006). Below the point in the structure where the operator induces shift, every indexical, including those embedded within the lowest clause, will be interpreted with respect to the shifted context.
3.5 The morphosyntax of indexical shift

3.5.1 The division of labor between syntax, semantics, and morphology

The previous section described how existing analyses of indexical shift can be adapted to a system that locates attitudinal quantification in the complementizer. This can, in turn, explain some of the properties of indexical shift constructions in Tigrinya. Tigrinya obeys the SHIFT TOGETHER constraint, except in cases where one of the indexicals has moved to a position outside the scope of the monster operator to be interpreted with respect to the utterance context. This accounts for the generalization that unshifted indexicals must occur above shifted indexicals. Further, Tigrinya obeys NO INTERVENING BINDER as a biproduct of the requirement that indexicals be interpreted in the context where they occur, and the prohibition of movement of non-wh nominals out of finite clauses.

Several properties from section 2.3 have yet to be explained. One such fact is the verbal morphology in indexical shift clauses: regardless of the realization of the pronoun in an indexical shift clause, verbal morphology will always reflect the $\phi$ features of the target nominal with respect to the shifted context. Additionally, subject and object pronouns in indexical shift clauses must move to a context where they will be realized with first or second features, if possible, and must be realized in the local context if they are first or second person in that context. Finally, there must be a way to account for the difference between subject and object pronouns, and pronouns contained in prepositions, other DPs, or relative clauses.

3.5.2 Mismatches in verbal morphology

First, consider the problem posed by the featural mis-matches between morphological marking on verbs in indexical shift context, and unshifted arguments. These possible mismatches can occur with the subject, object, or applied object marking:

(212) $\Phi$ feature mismatches in verbal morphology
Recall from section 3.3 that subject and object pronouns in Tigrinya must be realized as first or second person, if possible. In indexical shift configurations, where multiple contexts are available, the subject and object pronouns will be realized in whichever context allows them to realize these features. This preference for realizing first and second person features constrains the attested forms of clauses with indexical shift. The facts outlined above, showing that Tigrinya pronouns prefer to be realized with person features, if possible, and prefer to stay in the local clause, creates conditions such that this mismatch of features is only apparent in configurations where the pronoun refers to an individual who is a participant in the utterance context but not in the embedded context. If the referent is a participant in the embedded context, then the pronoun will remain in the shifted context and will match the embedded verbal morphology, as in (213).

(213) Participant indexicals must remain low (if possible)

a. almaz ṭanā ṭita nātī pizza bāliḇ-āy-o ṭil-a ṭāzarāb-a
   ‘Almaz said that she ate the pizza’

b. kidane ni almaz mahari niyaŋki ṭawṣiʔ-u-ki
   Kidane(M) DOM Almaz(F) Mahari(M) 2.SG fire-3.M.SG-2.F.SG
   ‘Kidane told Almaz that Mahari fired her,’
In all of the examples in (213), the verbal morphology matches the φ features of the nominals, because all of the nominals are in the shifted context. As discussed above, the alternative, where the relevant pronouns are in the unshifted context, violates the requirement that pronouns be realized in the most local context where they can receive participant features.

(214) Pronouns must be realized in the most local context possible

a. *almaz nissa nätı pizza bäli?-äy-o ?ı-l-a täzaräb-a
   INT: ‘Almaz said that she ate the pizza’

b. *kidane ni almaz mahari nįąä?a ?arı?-u-ki
   Kidane(M) DOM Almaz(F) Mahari(M) 3.F.SG.ACC fire-3.M.SG-2.F.SG
   ?ı-l-u nągär-u-wa
   INT: ‘Kidane told Almaz that Mahari fired her’

Changing the verbal morphology in (214a) to reflect the phi features of the third person pronoun in (214a) results in a sentence that is grammatical, but lacks the intended meaning where there is coreference between almaz and nissa.

(215) No coreference with unshifted 3rd pronouns//almaz nissa nätı pizza bäli?-äte-o ?ı-l-a
   ‘Almaz said that she ate the pizza’

Because the mismatch occurs only where unshifted indexicals occur, we must look to examples like (216), where the utterance context speaker and addressee are referred to in the embedded clause.
Mismatching $\phi$ features

a. kidane ʔänä nīfoʔti ?iy-a ?i1-u  
‘Kidane says that I$_{speaker/si/sj}$ am smart’

b. kidane nissiki nīfoʔti ?iy-a ?i1-u  
‘Kidane says that you$_{addressee/si/sj}$ are smart’

There is a constraint on when this mismatch surfaces: it occurs only if the relevant pronoun moves into the utterance context, and movement to the utterance context is only possible if the pronoun is not a participant in the embedded context. This means that in all cases where a $\phi$ feature mismatch occurs, the embedded verbal morphology will be third person and the unshifted pronoun will be first or second.

One possible explanation for the difference between the $\phi$ features of the verbal morphology and the $\phi$ features of the pronoun could be that the verbal morphology is actually default agreement. There are a good reasons to reject this hypothesis.

First, verbal agreement with unshifted indexicals reflects the gender and number of the target of agreement. It is only the person feature that differs:

(217) Gender and number agreement with mismatched person agreement  
kidane nīma nāti pizza bāliʔ-ān-o ?i1-u  
Kidane(M) 1.PL.NOM DET pizza eat-3F.PL-3M.SG COMP-3M.SG  
‘Kidane said that we$_{speaker+j}$ ate the pizza’

It would therefore not be plausible to say that agreement fails completely in these examples.

Another reason to doubt a default agreement analysis comes from looking at other places in Tigrinya where verbal argument cross-referencing morphology fails. We can use these examples to determine a baseline understanding of what default agreement will look like. For example, indefinite objects do not trigger object marking, as in (218).

(218) No object marking with indefinite objects
Likewise, anaphors do not trigger default or defective object marking, but instead the verb lacks object marking completely:

(219) No object marking with reflexive objects

a. almaz ni baʕal-a rāʔay-a(*-ta)
   Almaz(F) DOM self-3.F.SG see-3.F.SG-*3.F.SG.OBJ
   ‘Almaz saw herself’

b. almaz niʕaʔa rāʔay-a(-ta)
   Almaz(F) 3F.SG.ACC see-3F.SG-3.F.SG.OBJ
   ‘Almaz saw her\_j/s\_k’

Based on (218) and (219), we can conclude that, in configurations where agreement with an object fails, the default morphological strategy is to omit verbal object inflection all together. However, agreement with unshifted indexicals is never realized as a lack of agreement, but as agreement without the corresponding person feature. The behavior of object marking that cross-references an unshifted pronoun is therefore unlike that of default object marking elsewhere, supporting the proposal that these examples of mismatched $\phi$ features are genuine agreement.

One could object that the agreement relationship under discussion might be partial: that the person and number features are transferred under agreement unproblematically, but the person feature is not available, so the agreement fails and a default third person feature is realized. In this sense, the data under discussion does show (partial) default agreement. However, this actually perfectly encapsulates why this data is interesting, because it leaves unanswered why unshifted pronouns should have person features that are defective for agreement while shifted pronouns and pronouns that originate in an environment where shifting is disallowed have person features that are amenable to agreement.
It is worth noting that the examples in (218) suggest that Tigrinya object marking is actually clitic doubling, rather than agreement, in that it is sensitive to definiteness, and a lack of marking is realized as an absence of morphology, rather than a default form (see Kramer 2014 for a similar argument in Amharic, a language that is closely related to Tigrinya). If so, one might wonder if, in Tigrinya, subjects and object behave differently with respect to faulty agreement, as proposed in Preminger (2009). It is reasonable to assume that this is the case, but because in the particular configuration of agreement with unshifted indexicals there is no asymmetry between the behavior of subject marking and the behavior of object marking, this observation does not help salvage a default agreement story.

To illustrate the logic of this conclusion, consider (220), which has an unshifted first person object cross-referenced by third person verbal morphology.

(220) 3rd person verbal morphology with a first person object

\[
\text{Kidane(M) 1.SG.ACC see-1.SG-3.F.SG COMP-3.M.SG}
\]

‘Kidane said he saw me’

Based on the data in (218) and (219), the strategy in Tigrinya for realizing failed or defective object morphology is to forgo object marking on the verb completely, as is typical for clitics. However, (220) does not conform to this pattern, but instead realizes third person verbal marking, making verbal morphology that cross-references an unshifted object different than other cases where object marking fails. This casts further doubt on the premise that these instances of featural mismatches are the result of failed or defective agreement, which is typically null, and suggests that the verbal marking in an example like (220) is not a default form.

Instead, I propose that the \( \phi \) features reflected in the embedded verbal morphology in shifty clauses accurately reflects the \( \phi \) features of the target of agreement at the moment in the derivation when the relevant morphology is spelled-out, and apparent mismatches are the result of person feature valuation during a later stage of the derivation.
Contextually assigned person features

Below, I explain how valuing person features during the derivation, rather than assuming person features to be valued at the point of lexical insertion, can interact with cyclic spell-out to yield the mismatched person features we saw in (212). This system will treat indexical shift clauses and non-shifty clauses the same, treating pronouns as featurally deficient in both contexts, though this difference only comes to light in configurations where multiple contexts of evaluation are available for indexicals.

First, I assume a syntactic model where computation is cyclic, and that at predetermined points in the derivation. Specifically, I adopt the strong Phase Impenetrability Condition (PIC), as described in Chomsky (1998).

(221) **Strong Phase Impenetrability Condition** In phase $\alpha$ with head $H$, the domain of $H$ is to accessible to operations outside $\alpha$, only $H$ and its edge are accessible to such operations.

Subject agreement would precede proceed as follows. Starting with an existing VP, an agentive $v^0$ is merged and a pronoun is inserted. I assume that in the lexicon, pronouns are represented as a bundle of $\phi$ features, and that they do not yet have a phonological representation associated with them, and as such, have indicated the relevant pronoun simply as $X$.

(222)

```
    vP
   /  \                           /  \
  X    v'                         v0
 /   \          [val \phi]       [\_ case] VP
[\_ case] vP
```

Agreement between $T$ and pro values the phi-features of $T$, and gives a nominative case feature to $X$. 152
A $C^0$ is merged, and its complement is sent to PF and LF. Definite nominals appear very high in the clause in Tigrinya, so it is possible that $X$ will move to the specifier of $C^0$ immediately before the phase is sent to spell-out, in which case it will be spelled out at the next phase, on the assumption that by default, only the heads of chains are spelled out at PF.

Once the complement to a phase head is spelled out, it is inaccessible to further operations. At this point, PF will assign a phonological realization to $T^0$ and based on its $\phi$ features, and this morphological form will not be alterable by process in the narrow syntax from that point on.

In order to account for the lack of person agreement with unshifted indexicals, I expand upon an assumption in (Cardinaletti and Starke (1994); Cardinaletti (1994), a.o) that some
pronominal elements enter the derivation without person features. While they assume that this featural deficiency is a property of certain clitics, I propose that some full pronominal elements can also be featurally deficient in this way. Specifically, pronouns in Tigrinya enter the derivation with gender and number features, but without person features. These person features will be valued in the course of the derivation, as proposed in Kratzer (2009); Stegovec (2019). A structure that has both a cyclic derivation and person features assigned to pronoun will proceed differently based on the timing of these two operations.

Consider the configuration where person feature assignment happens above CP, as in (225). Here, first person is not assigned to X until after TP is spelled out, so there is no possibility of realizing T⁰ morphologically in a way that reflects first person features.

\begin{center}
(225)
\end{center}

By contrast, consider the configuration where person feature assignment happens below the phase boundary.

---

³For expository purposes, because there is not unitary CP layer, I designate the head that triggers spell-out as Phase⁰. This should not be taken to mean that there is a head that only has the property of triggering spell-out, but simply that for the moment, I remain agnostic to what, specifically, this head is.
Here, the person features are assigned to X after agreement with $T^0$, but before spell-out. This means that, depending on the exact formulation of chains and agreement, the morphology of $T$ could potentially reflect first person features.

In principle, the different ordering relationships between person feature valuation and spell-out could be used to derive the difference between agreement with shifted and unshifted first person pronouns. The mechanics involved here, however, are delicate, starting with the question of whether feature valuation could be formulated such that (226) will result in first person verbal morphology as desired. It could in theory be the case that agreement with one member of a chain does not entail agreement with other members, or that features are not shared among members of a chain, such that $T^0$ could never reflect person features unless those features were already present at the point where $T^0$ agreed with X. However, given the copy theory of movement, it seems entirely likely and almost inevitable that features should be shared between members of a chain.

Because $\phi$ features are not typically considered something that can change during the course of a derivation, it is difficult or impossible to find precedent in the literature on how agreement would respond to such a change. However, if we consider case assignment, relevant examples emerge. The next section will outline the problem that participle agreement in Icelandic poses, which will ground a subsequent consideration of the facts for person
features in Tigrinya.

Icelandic case

An instructive example for thinking about the problem posed by data like (226), which contains a mismatch between argument features and \( \phi \) features, comes from Icelandic as described in Frampton et al. (2001).

(227) Icelandic participle agreement

a. hún er vinsæl
   she.NOM is popular.NOM
   ‘She is popular’

b. þeir segja hana vera vinsæla
   they.NOM say her.ACC to-be popular.ACC
   ‘They say her to be popular’

c. hún er sagnða vera vinsæl
   she.NOM is said.NOM to-be popular.NOM
   ‘She is said to be popular’

d. þeir telja hana vera sagnða vera vinsæla
   they.NOM believe her.ACC to-be said.ACC to-be popular.ACC
   ‘They believe her to be said to be popular’

e. hún er talin vera sagnð ver vinsæl
   she.NOM is believed.NOM to-be said.NOM to-be popular.NOM
   ‘She is believed to be said to be popular’

In Icelandic, past participles show agreement for case, gender and number (Frampton et al. (2001) only indicates case in glosses, as gender and number do not bear on their point), as in (227a-e). (227a) shows a copular construction with a nominative subject pronoun. In (227b), the copular phrase is an infinitive complement, and as such, cannot assign nominative case to its subject. Instead, the embedded subject gets accusative case from the matrix verb in an ECM configuration. The example in (227c) is a passivization of (227b), where accusative case is no longer available to the embedded subject, so it moves into the matrix subject position to receive nominative case from the matrix T\( ^0 \). The past participle
in (227c) is nominative, reflecting the fact that its subject is nominative. Example (227d) embeds a finite version of (227c), removing the possibility of assigning nominative case to the embedded subject via movement to the higher clause. Instead, the embedded subject receives accusative case from the matrix clause. The striking fact about (227d) in comparison to (227c) is that the past participle now bears accusative case, to match the case on its subject. Accusative case was not assigned to the embedded subject, however, until after it agreed with the participle. (227e) passivizes this matrix ECM verb from (227d), forcing the embedded subject to move even further, to the subject position of the matrix clause, to get nominative case. Again, the participle shows agreement with its subject, reflecting the nominative case, in spite of the fact that the pronoun did not get nominative case until well after agreement with the participle. The clear parallel to the Tigrinya data is that verbal morphology reflects features that were assigned after the agreement relationship was established.

Frampton et al. (2001) provides a clear picture of why this data is a problem for agreement as defined in Chomsky (1999), based on the English schematic of an Icelandic sentence in (228):

(228) Max expected someone.ACC to be killed.ACC.SG

(229)

\[
\begin{array}{c|c|c}
\text{PRT} & \text{kill} & \text{someone} \\
\text{NUM[]} & \text{NUM[sg]} \\
\text{CASE[]} & \text{PERS[3]} \\
\end{array}
\]

The structure in (229) contains a VP that selects an object with valued person and number features, which is in need of a case feature. A functional participial head is merged. The functional head itself contains unvalued number and case features. Crucially, the participial head is not a case assigner, but rather needs a case feature to determine its morphological form. Following DBP, probes and goals require at least one unvalued feature to be active, in the sense that an active head can probe or be probed to value its features. PRT probes
downward and finds unvalued features on *someone*. PRT adopts the number feature of *someone*.

(230) 

```
[   PRT   [ kill someone ]]  
NUM[sg]    NUM[sg]  
CASE[]     PERS[3]  
```

The only unvalued feature on *someone* is case, and because PRT does not assign case, and in fact needs a case feature itself, both *someone* and PRT remain active.

The next feature-bearing head to merge is T_r, a raising T^0 which is non-finite. Non-finite T^0 does not have the full array of \(\phi\) features, but instead has only person and EPP features.

(231) 

```
[   T_r   [ be [ PRT [ kill someone ]]   ]  
PER[]    NUM[sg]    NUM[sg]  
EPP[]    CASE[]     PERS[3]  
```

At this point, T_r probes into the structure to find a goal that will satisfy its person and EPP features. T_r will pull *someone* into its specifier, thereby satisfying the EPP feature and valuing the person feature on T_r.

(232) 

```
[   someone   T_r   [ be [ PRT [ kill t_i ]]   ]  
NUM[sg]    PER[sg]    NUM[sg]  
CASE[]     
```

The matrix verb and the matrix v^0 are then merged.

(233) 

```
[   v^0   [ expect [ someone   T_r   [ be [ PRT [ kill t_i ]]   ]  
PERS[]    NUM[sg]    PER[sg]    NUM[sg]  
CASE[]     
```
\(v^0\) probes downward to find someone, and values its person and number features. \(v^0\) can also assign accusative case to someone. (233) concludes the agreement relations within this phase, but the case feature on PRT remains unvalued.

Frampton et al. (2001) suggests a few solutions to the problem posed by a derivation like (233), which can all be described broadly as allowing the features on a probe to be updated to reflect the features on the goal, even after agree has taken place. What is needed to solve the problem presented in (233), and in the Tigrinya data in the previous section, is any mechanism that will allow past agreement relations to be updated with features assigned subsequently in the derivation. I will therefore adopt the least elegant but most easily implemented of their suggestions by assuming that the agree relation is transitive, which I will indicate with a subscript numeral on the relevant features that corresponds to the element that it has agreed with.

Turning back to the Tigrinya example, any mechanism that allows this kind of transitivity will account for (234), if we assume a derivation like (235).

(234) Feature transitivity in Tigrinya
kidane \(\text{?an}\,\text{nifol}\) ?iy-\(\text{á}\) ?i\(\text{l}\)-\(\text{u}\)
Kidane 1SG.NOM smart COP-1.SG.NOM COMP-3M.SG
‘Kidane, said that he, is smart’

(235) PhaseP
   / \           / \          / \
   Phase'      Phase^0  Phase^0
      / \   / \   / \
     TP   Phase^0
        / \   / \   / \   / \   / \   / \   / \   / \
       [1 \(\pi\)] [f gen] [sg #] [nom] [\(\pi\)] [f gen] [sg #]
        \                            \                            \                            \
                 [vP] [T'] [\(\pi\)] [f gen] [sg #]
                      \                       \                        \
                   [v^0] [\(\pi\)] [f gen] [sg #] [nom] [nom]
                      \
                   [v^0]
In a sentence like (236), where agreement between an unshifted indexical and the verb does not reflect the features assigned later in a derivation, we need some explanation for why this transitive feature sharing mechanism fails.

(236) Feature transitivity is blocked

\[
\text{Kidane(M) I SG.NOM smart.F COP-3F.SG COMP-3M.SG}
\]

‘Kidane says that I am smart’

As alluded to previously, this explanation comes from the premise of cyclic spell-out. In (237), the verb and its inflectional morphology has been spelled out before person feature valuation on the pronoun, so its morphological realization is already determined.

If we assume that person feature assignment occurs immediately before the completed phase is sent to the interfaces, then it is possible to derive the correct result for non-shifty clauses. Unlike the Icelandic participle data discussed above, which did not contain phase boundaries between the nominal element and the verbal inflection that reflect the case features of that element, in this data there is a phase boundary that causes the realization of the verbal inflection to reflect an earlier stage of the derivation.

Extending this analysis to indexical shift clauses requires additional infrastructure. Recall that indexical shift is possible in monoclausal sentences:
(238) First person indexicals in monoclauses

a. almaz ?anâ nifo̱ti ?iy-ä ?iil-a
   almaz(F) 1SG.NOM smart.F COP-1SG COMP-3F.SG
   ‘Almaz says she, is smart’

b. almaz ?anâ nifo̱ti ?iy-a ?iil-a
   almaz(F) 1SG.NOM smart.F COP-3F.SG COMP-3F.SG
   ‘Almaz says I_speaker is smart’

I assume that indexical shift clauses like these must contain an additional opportunity
to value person features.

(239)
In order to get the unshifted reading in (245a), the pronoun must raise into the higher phase, to a position above \( \otimes \), where it can receive person features.

### 3.5.3 Analysis

In the system described above, the crucial mechanisms to account for the Icelandic participial data, the Tigrinya indexical shift data, and the difference between the two are as follows: first, there must be a system that allows features assigned to the head of a chain to be shared with lower copies. Allowing for feature transmission accounts for apparently long-distance participial agreement in Icelandic. Second, there must be cyclic spell-out of syntactic structure. If the system of cyclic spell-out we adopt posits phase boundaries in Tigrinya between the position where person features are assigned to unshifted indexicals and the position that verbal phi agreement occupies, then we can derive the pattern that verbal agreement does not reflect unshifted person features. On the other hand, if there is no phase boundary between a participle and the argument it agrees with, then we predict that the participle should reflect case features assigned later in the derivation, which is the attested pattern. Given that Icelandic long-distance participle agreement relies on the movement of the subject of the participle through non-case receiving A-positions, the relevant configurations necessarily involve passives and raising verbs, which do not introduce phase boundaries. The third crucial mechanism is some way of assigning person features throughout the derivation.

I will adopt a simplified view of how this person feature assignment works, by positing that, for the purposes of this discussion, person features are assigned by a rule that applies immediately before spell-out, rather than via an agree relation. Though the impetus for positing this rule is the featural properties of verbal morphology in indexical shift clauses, I assume this process is general, and that indexical shift contexts only differ in making the process evident by introducing the multiple possibilities for the interpretation of person features. This rule will assign person features to pronominal elements within the phase that is about to be spelled out in a way that is unconstrained, but which will ultimately be filtered by interpretational considerations. For example, in English, the input to this rule...
(240)  a.  \( X_{\_,sg,fem} \) like\( _{\_,sg,fem} \) pizza.

  b.  
      i.  I like pizza
      ii.  You like pizza
      iii.  She likes pizza.

Only pronouns should be affected by this rule. I adopt a view where pronouns are underspecified for person features, while other nominals have a specification \([3\pi]\). This is not the only path to a third person realization: I follow Harbour et al. (2008); Preminger (2009); Béjar and Rezac (2009) in assuming that unvalued \( \pi \) features are realized as third person.

Because \( \phi \) agreement between the T and the subject in (240) is spelled out in the same cycle as the assignment of person features to the pronoun, the verbal agreement morphology reflects the assigned person features. There is no independent principle to rule out the possibility of generating any of the options in (240), but as has been argued for in this chapter, the contextual coordinates supply information about the identity of the speaker and addressee, and the person feature assignment rule will introduce a presupposition that yields the relevant interpretation in each case. For example, first person includes the presupposition that \( X \) is the author in the local context, so (240b) will necessarily require that the pronoun refer to the local author coordinate.

A further assumption that I make is that this person feature assignment only applies to the highest copy of an A-chain. The feature transmission mechanism required for the Icelandic data will result in these features being shared by an lower copies that have not yet been sent to spell-out.

(241)  **PERSON FEATURE ASSIGNMENT RULE:** Person features are freely assigned to heads of A-chains that lack them immediately before the phase that they are contained in is sent to the interfaces.

In a matrix, non-perspectival clause in Tigrinya, this will mean that the example in (242) is derived by building a structure \( X \) see \( Y \) and then applying the rule to derive the
correct form.

(242) niʕaʔki niʕayi rāʔa-ki-ni
2F.SG.NOM 1.SG.NOM see-2F.SG-1.SG
‘You saw me’

Deriving clauses that involve indexical shift will be slightly more complicated. The difference between (243a) and (243b) is that in (243a), where the first person pronoun is interpreted as referring to Almaz, the first person feature is assigned in the lower phase, while in (243), the first person feature is assigned in the higher phase.

(243) Complex examples for feature assignment

   a. almaz ʔanā nifoʔti ʔiy-á ʔil-a
      almaz(F) 1SG.NOM smart.F COP-1SG COMP-3F.SG
      ‘Almaz says she is smart’

   b. almaz ʔanā nifoʔti ʔiy-a ʔil-a
      almaz(F) 1SG.NOM smart.F COP-3F.SG COMP-3F.SG
      ‘Almaz says I am smart’

To derive the reading in (243a), the structure in (243b) below is constructed up to the phase boundary without person values for the pronoun X. Before the phase is sent to the interfaces, the head of the A-chain, X, is assigned first person features, because Almaz is the author argument of the lower phase. I assume that phases coincide with indexical shift domains. Because features are transitive, the lower copy of X in spec vP will also receive a first person pronoun, and because that copy is in an agree relation with T₀, the features on T₀ will be valued for first person, and when the phase is sent to spell-out, the verbal morphology will reflect first person features.

(244) a. almaz ʔanā nifoʔti ʔiy-á ʔil-a
       almaz(F) 1SG.NOM smart.F COP-1SG COMP-3F.SG
       ‘Almaz says she is smart’
The other reading, where the first person pronoun is interpreted in the utterance context and the verbal morphology is third person, is derived by moving the pronoun to the phase edge, so that it will not receive person features in the phase where the verbal morphology is spelled out. At the moment where $T^0$ agrees with $X$, $X$ has no person feature. $X$ moves up into the specifier of the Phase$^0$, so that when then phase is being prepared for spell-out, the head of the chain is not within the phase. The Person Feature Assignment rule applies only to the highest element in a chain, so it will not be able to assign person features to $X$ in the lower phase. The person feature goes unvalued, and, I assume, receives a default third person interpretation, which is reflected in the person morphology on the verb. Gender and number features, however, are valued by this interaction, and the verbal morphology therefore reflects the actual gender and number features of the target nominal. In the next phase, $X$ will receive a first person feature, because in that position, $X$ is above the monster.
operator, and therefore is being interpreted with respect to the utterance context. However, because the verbal morphology has already been spelled out, there is not possibility of verbal morphology reflecting this first person feature.

(245) Timing spellout and feature assignment

a. almaz ?anä nifo’ti ?iy-a ?iil-a
almaz(F) 1SG.NOM smart.F COP-3F.SG COMP-3F.SG
‘Almaz says I<spkr> am smart’

b. 

This system captures the generalization that indexicals that are interpreted with respect to the utterance context have features that are not reflected in the verbal morphology, by exploiting cyclic spell-out. However, it also over-generates; the next section will discuss this problem in greater detail.
Constraining over-generation: preference to realize person features

Consider the sentences in (246), where (246a) involves a first person feature assigned in the lower phase, (246b) has a first person feature assigned high, and (246c) has no participant features at all.

(246) Differences in feature assignment timing

a. almaz ʔanā siʔasiʕ-ā ʔil-a
   Almaz(F) 1SG.NOM dance-1SG COMP-3F`SG
   ‘Almaz_i said she_i danced’

b. almaz ʔanā siʔasiʕ-a ʔil-a
   Almaz(F) 1SG.NOM dance-3F.SG COMP-3F`SG
   ‘Almaz_i said I_spkr/∗i danced’

c. almaz nissa siʔasiʕ-a ʔil-a
   Almaz(F) 3F.SG.NOM dance-3F.SG COMP-3F`SG
   ‘Almaz_i said she_j/∗i danced’

Crucially, feature assignment here must be optional, in a sense. It need not apply at all, but the resulting interpretations will be different depending on whether or not it does apply, because person features carry presuppositions that constrain the possible referents of the pronouns. In this system, person feature assignment not an obligatory step in the derivation, but is enforced by the interpretational requirements imposed by the presuppositions introduced by person features and context of evaluation for indexicals that the pronoun occurs in.

The system, laid out in its current form, predicts that (246c) should have a reading where it is synonymous with (246a), contrary to fact. The derivation will begin with the insertion of the underspecified pronoun, and build up to the phase boundary as described in the previous section until reaching the stage in (247).
For the interpretation where $X$ refers to the speaker in the embedded context (here, Almaz), the derivation should assign first person features to $X$. However, recall that the Person Feature Assignment Rule only applies to the highest copy in an A-chain. Moving the pronoun to a position outside the phase will prevent person features from being assigned to this A-chain, even though the intended interpretation is one where the pronoun refers to the author of the local context.
If X, which should refer to Almaz, moves into the higher phase, it will be evaluated for person features at the point where the head of that higher phase is merged. However, in this context, X does not refer to the speaker in the utterance context which is the relevant context of evaluation for this pronoun, so no person feature will be assigned. The resulting sentence will be (246c), but with the unavailable interpretation where Almaz thinks that she herself is smart.

This can be thought of as a preference for languages to realize person features whenever possible. The possibility of conveying the intended meaning of (246a) by saying (246c) is blocked by the existence of (246a).

(249) **REALIZE PERSON FEATURES**

If it is possible to convey the same meaning using two different structures that differ only in the person features of a pronoun and the movement operations that pronoun
has undergone, prefer the one that realizes a person feature.

The generalization in (249) gives a preference to structures that realize first or second person features on a pronoun over those that do not, given a comparison set of structures that are identical except for the placement of the relevant pronoun. This generalization will rule out structures like (246c) if the possibility of (246a) exists.

**Constraining over-generation part 2: stay local**

The constraint in (249) captures the generalization that in Tigrinya, person features must be realized, if possible. However, it does nothing to help with the cases where a pronoun would be a participant in either context. Recall that in these cases, the pronoun must be realized in the lower of the two contexts.

In (250), the relevant (boldface) pronoun is intended to refer to a group containing the speaker in the utterance context. However, a first-person realization of this pronoun is ruled out, because the speaker in the utterance context is also the addressee in the embedded context. The pronoun must be realized in the lower context, with second person features.

(250) a. kidane nissikatkum ?iti wädidir si?ir-kum ?il-u
nägar-u-ni
say-3.M.SG-1.SG
“Kidane told me, that we_\text{i+j} won the competition”

b. *kidane nîhma ?iti wädidir si?ir-kum ?il-u
nägar-u-ni

INT: “Kidane told me, that we_\text{i+j} won the competition”

While (250) alone might be used as evidence the second person is preferable to first person, (251) shows the opposite effect: in a configuration where the pronoun refers to an individual who is the addressee in the utterance context and the speaker in the matrix context, the opposite preference emerges. Here, the pronoun must be realized as first person, which again, reflects the lower context.
This must reflect a preference for a simpler derivation, a kind of economy condition: the two possible derivations differ only in that one involves a step of movement that is absent in the other.

Non-argument pronouns

The patterns described so far in this section apply to subject and object pronouns, but 3.3 revealed that other pronouns, in particular, the objects of prepositions and possessors do not show a preference for realizing person features.

For example, in (252), the first person indexical indexical -āy is used to refer to the speaker in the embedded context, Kidane, both in (252a) and (252b), but in (252c) and (252d), the third person pronoun -o is used to refer to Kidane.

(252) Indexicals as objects of prepositions

a. kidane [ʔanā ʔab ti’iq-āy temin rāʔay-ā] ?il-u
   kidane 1.SGP next.to-1.SG snake see-1.SG COMP-3.M.SG
   Kidane, said that he saw a snake next to him

b. kidane [ʔab ti’iq-āy ʔanā temin rāʔay-ā] ?il-u
   kidane P next.to-1.sg 1.SG snake see-1.SG COMP-3.M.SG
   Kidane, said that he saw a snake next to him

b. kidane [ʔanā ʔab ti’iq-o temin rāʔay-ā] ?il-u
   kidane 1.SG P next.to-3.SG snake see-1.SG COMP-3.M.SG
   ‘Kidane said that he saw a snake next to him’
The object of a preposition is more flexible with respect to its realization than a subject or object pronoun, in that there is no pressure to realize the prepositional object with first or second person features. Note, however, that the possible realization of the pronoun is still constrained by syntactic position; (252c) contains the pronoun -o below the shifted pronoun ʔanā, which prevents the prepositional object from being evaluated with respect to the utterance context, and therefore from referring to Kidane.

The generalization that emerges is that prepositional objects must still be interpreted with respect to the context that they occur in, but that unlike subject and object pronouns, there is no pressure for these elements to realize person features.

The same facts hold for pronominal possessors. Both the shifted and unshifted versions of the pronoun are permissible, as long as the syntactic conditions that allow the pronoun to be interpreted with respect to the intended context are satisfied.

(253) Indexicals as possessors

a. kidane ni ?ark-ā ʔanā riʔ-yā-ʔ ?il-u
   Kidanei said hei saw hisi friend

b. kidane ni ?ark-u ʔanā riʔ-yā-ʔ ?il-u
   Kidanei said hei saw hisi friend

c. kidane ʔanā ni ?ark-u riʔ-yā-ʔ ?il-u
   Kidanei said that hei saw hisj/ki friend

d. kidane ʔanā ni ?ark-ā riʔ-yā-ʔ ?il-u
   Kidane(M) 1.SG.NOM DOM friend-1.SG see-1.SG-3.M.SG COMP-3.M.SG
   Kidanei said hei saw hisi friend

The difference between the attested patterns for subject and object pronouns and those of prepositional objects and pronominal possessors follows straightforwardly from the Per-
son Feature Assignment Generalization and Realize Person Features. Recall that person features are only ever assigned to the highest copy in a chain. Movement out of a phase prevents the assignment of local person features. In the case of subject and object pronouns, this possibility needs to be ruled out, because it generates unattested forms. Specifically, it generates forms where a third person pronoun is interpreted in the utterance context, but refers to a participant in the embedded context. These unattested forms are filtered out by Realize Person Features. However, for objects of prepositions and possessors, the person feature assignment generalization does not over-generate; participants in the lower context can be referred to using third person pronouns evaluated in the utterance context.

The formulation of Realize Person features prevents it from adjudicating between configurations that differ only with respect to the realization of person features on the object of a preposition. As written, it takes as the comparison set equivalent derivations that differ in the featural properties and position of a pronoun. Applying it to cases like (253) would mean comparing two derivations that differ in the placement of a larger constituent (a PP) and the features on an element within the moved constituent (the pronoun). Equating structures that differ in the placement of a larger constituent to determine the preferred featural realization of an element within that constituent will greatly expand the comparison set of forms, potentially forcing the extraposition of entire clauses to construct configurations where pronouns can get person features, contrary to fact. It is therefore independently desirable to exclude such cases, and limit the comparison set to derivations that differ minimally.

Defined in this way, the forms in (252) and (253) are not in competition with each other for the purposes of this constraint. The licit (a), (b), and (c) forms involve structures that differ with respect to the placement of an entire PP or DP containing the pronoun of interest, rather than differing in the placement of the pronoun itself, as would be the case with subjects and objects. In the (a) examples, the pronoun is contained within a PP or DP that is above the first-person subject, but within the indexical shift context (i.e., within the scope of the monster operator). In the (b) example, the DP or PP containing the pronoun is above both the indexical subject and the monster operator, and in the (d) examples, the DP or PP is below both the embedded subject indexical and the monster operator. Because
it is the PP or DP that has moved, and not the pronoun, no preferential relationship exists between the forms in these examples, and any of these realizations are possible, so long as they satisfy other syntactic conditions.

**Relative clauses**

Relative clauses pattern similarly to the possessors and objects of prepositions described above, in that the entire relative clause can occur either above or below the monster operator, but must be interpreted with respect to the local context in whichever position it occupies.

In (254a) and (254b), there are first person pronouns in both the embedded clause and the relative clause attached to the embedded subject. the first person pronoun in the embedded clause must refer to the author in the utterance context, because it is cross-referenced on the verb with third person morphology. The relative clause first person can be interpreted as referring to the author in the utterance context, whether it is above or below the first person object. This is not surprising, because both the relative clause and the embedded object need to be in the higher context, but the relative order of the two should not be important. In (254d), the embedded object is again first person, and again must refer to the author in the utterance context, but here the pronoun in the relative clause, which still refers to the author in the utterance context, is third person. The reading of the third person pronoun in the embedded clause as referring to the author in the utterance context is possible in (254d), where it is lower than the unshifted first person pronoun and therefore can be located in the embedded context, but impossible in (254c), where relative clause is above the unshifted first person pronoun, and therefore necessarily being interpreted with respect to the utterance context. These examples show that the relative clause can be interpreted with respect to either context as long as it occupies that context syntactically, and shows no preference to realize person features.
Indexicals inside relative clauses

a. kidane ni almaz [ʔita ʔanā zi-ḥagiz-ku-a
Kidane(M) DOM Almaz(F) DET.F 1.SG.NOM REL-help-1.SG-3.F.SG

sābāyiti nīyayi ḥabā?-at-a ʔil-u-wa

Kidane told Almaz that the woman I helped hid me

b. kidane ni almaz nīyayi [ʔita ʔanā zi-ḥagiz-ku-a
Kidane(M) DOM Almaz(F) 1.SG.ACC DET.F 1.SG.NOM REL-help-1.SG-3.F.SG

sābāyiti ḥabā?-at-a ʔil-u-wa

Kidane told Almaz that the woman I helped hid me

c. kidane ni almaz [ʔita nissa zi-ḥagiz-at-a
Kidane(M) DOM Almaz(F) DET.F 3.F.SG.NOM REL-help-3.F.SG-3.F.SG

sābāyiti nīyayi ḥabā?-at-a ʔil-u-wa

Kidane told Almaz, that the woman she_{j/į/*spkr} helped hid me

d. kidane ni almaz nīyayi [ʔita nissa zi-ḥagiz-at-a

sābāyiti ḥabā?-at-a ʔil-u-wa

Kidane told Almaz that the woman I helped hid me

As with objects of prepositions and possessors, the Realize Person Features generalization does not apply, because the structures differ too greatly. Relative clauses are constructed without reference to a particular context, but must be appropriate for whatever context they are interpreted in.

3.6 Conclusions

This chapter has covered a broad range of aspects of indexical shift. Section 3.3 provided an overview of the basic empirical facts of indexical shift in Tigrinya. Tigrinya allows indexical shift for first and second person pronouns of any grammatical function, but only clauses
headed by the complementizer ʔiŋ- allow indexical shift. Beyond this requirement, there are also syntactic constraints on which contexts a pronoun has access to, based on the relative position of other indexicals within the clause, and the depth of embedding. Section 3.3 also covered some more surprising facts about indexical shift in Tigrinya, in particular, that for a given LF, the choice between shifted or unshifted pronouns is predetermined, and that the verbal morphology always reflects the shifted context. Section 3.4 presented an overview of current theories of indexical shift, and argued that Tigrinya constitutes evidence for a theory that separates the monster operator from the attitude predicate. Finally, section 3.5 analyzes the morphological realization of indexicals and verbal morphology in a system that treats person features as elements assigned throughout the course of the derivation.
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Appendix A

Logophoricity

Chapter 2 argued for a connection between perspectival complementizers and indexical shift by pointing out that indexical shift occurs under perspectival complementizers using data from Tigrinya. Logophors also occur under perspectival complementizers, as data in this chapter from Ewe will show. However, while prototypical logophors follow this pattern, exempt anaphors pattern differently. I discuss the ways in which exempt anaphors and logophors behave differently with respect to a variety of syntactic criteria, ultimately concluding that they need to be analyzed as distinct phenomena.

A.1 Introduction to Logophoricity

“Logophor” is a term coined by Hagège (1974) to describe a specialized pronominal form used in embedded clauses to refer to the non-speaker attitude holder to whom the embedded proposition is being attributed. Culy (1994) demonstrates the use of a logophoric pronoun in Donno Sɔ with the following contrasts:

(255) Logophors in Donno Sɔ

a.  oumar anta  inyemeñ waa be gi
Oumar(M) Anta(F) LOG-ACC seen ACC said

“‘Oumar; said that Anta saw him;’”
b. ounaᵊ, anata woon waa be gi
   Oumar(M) Anta(F) 3,AACC seen AUX said
   ‘Oumar, said that Antaᵊ had seen himᵊ.’

In (255a), the logophoric pronoun inyemwoon must refer to the speaker in the matrix clause, ounaᵊ. In (255b), the non-logophoric pronoun woon is prohibited from referring to ounaᵊ, indicating that the logophoric form is required for coreference between the attitude holder and the pronoun.

Logophors are confined to what Culy (1994) calls “logophoric domains”, which for him simply means complement clauses of attitude predicates where the logophor is possible. In non-logophoric domains, the regular third person pronoun is used to refer to the attitude-holder, and the logophoric form is prohibited. For example, as discussed in chapter 2, perception verbs are the least likely select a complement with a perspectival complementizer, and in Donno So, perception verbs are not logophoric domains, evidenced by the ungrammaticality of (256a), so the regular third person pronominal form must be used instead, (256b)

(256) Non-logophoric domains in Donno So

a. anta wo wa fransi boojë gø egaa be
   Anta(F) 3SG SBJ France go,FUT-3SG COMP heard AUX
   ‘Anta, heard that sheᵊᵊ will go to France’

b. *anta inyemwa fransi boojë gø egaa be
   Anta(F) 3SG SBJ France go,FUT-3SG COMP heard AUX
   INT: ‘Anta, heard that sheᵊᵊ will go to France’

In (256a), the third person pronoun can refer to anta, but it need not. (256b) shows that the logophoric pronoun is not possible in this clause under any interpretation. This contrasts with (255), which requires the logophor for coreference.

Beyond allowing coreference between an embedded pronoun and a higher argument, logophors are often said to contribute an additional meaning component, conveying that the referent of the logophor is the individual whose perspective is reflected in the clause.
Culy (1994) divides languages with logophors into two types: “pure logophoric languages”, which have a dedicated pronoun with a logophoric use of the variety described above in Donno So, and “mixed logophoric languages”, which have a morpheme with a logophoric use in some context, but which also has another function outside that context. Yoruba is an example of a mixed logophoric language, in that there are a class of pronouns (“independent pronouns”) that are used both as a logophor in certain clausal complements, and an emphatic pronoun elsewhere.

(257) Yoruba independent pronouns

   a. ó ri pé oun lówó
      he saw say INDEP money
      ‘he saw that he himself had money’

   b. oun ló fa kíníyèn
      INDEP is he pulled
      ‘It was he that caused that thing’

The intent of (257a) is to show that the Yoruba independent pronoun can be used in embedded clauses to convey coreference, but as (257b) shows, this independent form can also be used in other contexts, like a matrix clause.

Another version of a mixed logophoric language are languages in which the pronoun with a logophoric meaning is used as a reflexive pronoun elsewhere. English has been claimed to be such a language:

(258) English exempt reflexives

   Charnavel and Zlogar (2015), adapted from Kuno (1987)

   In her opinion, physicists like herself are rare.

   In (258), the reflexive pronoun herself is not c-commanded by its antecedent, so it is not bound in the conventional sense. However, it is also not contained within an attitude predicate, which would be surprising if it was a logophor in the sense of Culy (1994). Culy (1994) draws this distinction between pure and mixed logophoric languages in order to isolate an important observation that holds of pure logophoric languages, but not
mixed logophoric languages. This observation is that, in pure logophoric languages, the
distribution of logophors is constrained by an implicational hierarchy of predicate of the
type described in section 2.5.2. Based on this difference in distribution, as well as more nu-
anced interpretational facts, Culy (1994) argues that pure logophoric languages and mixed
logophoric languages are not the same phenomena, contra work that treats, for example,
exempt anaphors as a type of logophor. I aim to make a slightly different argument, but
one that gets at a similar point, that the set of elements that have been included under
the umbrella of “logophors” in the literature are not homogeneous. Specifically, there are
crucial differences between exempt anaphors and logophors, and that these differences are
discernible from distributional facts, as well as other syntactic tests.

One example of how the proposal I present in this chapter differs from that of Culy
(1994) comes from Yoruba. As shown in (257), Yoruba is a mixed logophoric language, in
that the logophor can be used as an emphatic pronoun in non-logophoric contexts. How-
ever, Lawal (2018) argues that in its logophoric use, it only occurs under the complemen-
tizer pé.

(259) Yoruba logophors under complementizer pé

(a) *ayoᵢᵢ bú okùnrin tì ótan òunᵢᵢ.
   Ayo(M) knows man that he deceived
   ‘Ayoᵢᵢ knows the man who deceived himᵢᵢ.’

(b) ayoᵢᵢ so pé bólaⱼᵢᵢ bú okùnrin tió tan òunᵢᵢᵢ/jᵢᵢ
   Ayo(M) said that Bola(M) insulted the man he deceived
   ‘Ayoᵢᵢ said that Bolaⱼᵢ insulted the man who deceived himᵢᵢ/jᵢᵢ’

(259a) shows a configuration where the logophor is not possible, because it is not lo-
eated under pé. In (259b), the entire content of (259a) is embedded under the complement-
tizer pé, and the logophor is now grammatical. This data supports the conclusion in Lawal
(2018), that embedding under pé is a required condition for the presence of the logophor.

Further, Bamgbose (1986) argues that the complementizer pé can be used on its own to
report speech:

---

1Bamgbose (1986) suggests the same fact, but with the sole exception that logophoric òun can appear
under so, which means say, and under this predicate alone the complementizer is optional.
Yoruba speech reports with pé

\(\text{òmọ nàà ọ̀ tîlè (sọ) pé oun rí mí} \) child the NEG even (say) that LOG see me

‘The child didn’t even say that he saw me’

(260) should be familiar from previous chapters: the verb that means “say” is optional, and when omitted, the combination of the complementizer pé and the author argument yields a speech report interpretation. Like Tigrinya, Yoruba seems to license perspective-sensitive morphosyntactic phenomena under the complementizer that induces a speech report interpretation in matrix clauses.

The distinction that Culy (1994) presents, dividing pure logophoric languages from mixed logophoric languages, misses the generalization that Yoruba only allows the logophoric use of the oun in exactly the conditions where pure logophors would be predicted, on Culy (1994)’s own account. The goal of this chapter to lay out a different generalization, that there is a divide between pronominal elements that obey the distributional generalization presented Culy (1994), and those that do not, but that divide does not correspond directly to whether the pronominal element in question has another use in the language. Instead, I will use independent syntactic tests to show that elements in these two categories behave differently.

A.2 Logophoric contexts and complementizers

My claim is that the kinds of contexts that make logophors possible are defined by a particular type of clause headed by a particular type of complementizer. Showing that this correlation holds for a particular language is not difficult; I do so for Ewe below, and there are numerous examples of languages where similar claims have been made.

Culy (1994) claims explicitly that there is not a correlation between logophoric contexts and complementizers. The generalization I am pursuing is not about complementizers per se, but about clause types, but his objection is worth considering.

The relevant data comes from Donno So.

\(^2\)for arguments that pé is not a verb, see Bamgbose (1986)
Complementizers and logophors in Donno Sɔ

(261) Complementizers and logophors in Donno Sɔ  

a. **oumar mi suŋɔ miŋ diaa be go miŋ**  
   Oumar(M) my younger brother LOG-OBJ insulted AUX COMP me-OBJ  
   tagaa be  
   told AUX  
   ‘Oumar, told me that my younger brother had insulted him,’

b. **wo inyemę yogo bojem giaa be**  
   3.SGLOG tomorrow go-PROG-1.SG said aux  
   ‘S/He, said that s/he is leaving tomorrow’

c. **mi woŋi waa bem (go) igi wɔ**  
   I 3sg-OBJ seen past-1.SG (COMP) know AUX  
   ‘S/he, knows that saw her/him,’

A complementizer is present in (261a) and optionally in (261c), but is absent in (261b). Logophors are required for coreference in (261a) and (261b), but are not possible in (261c). If the presence of a complementizer indicated a logophoric domain, then it would be surprising that both (261a) and (261b) are logophoric domains, and the optionality of the complementizer in (261c) would also be surprising.

However, null complementizers are cross-linguistically common, and as has been noted previously in this work, this unitary category “complementizer” somewhat of an abstraction, given the numerous proposals that adopt a model where the CP layer is composed of multiple projections. Given these sources of uncertainty, the Donno Sɔ data in (261) merit further consideration to determine whether the presence or absence of this complementizer is really indicative of syntactic and semantic differences within the embedded clause. It could be the case that the presence or absence of the complementizer *go* correlates with other meaningful differences in the properties of the embedded clause. If, for example (261a) had different inflectional or tense/aspect options than (261b), and (261c) could pattern with either of the two depending on the presence of *go*, there would be compelling reason to say that the distribution of logophors in Donno Sɔ is not constrained to a particular class of embedded clauses. Based on the data available in Culy (1994), however, there is no reason to believe that this is the case.
If we examine the facts provided about the distribution of logophors in Donno Sɔ, it turns out to be the case that the logophor can only occur under *say* and *think*, which conforms to the generalization in other languages that do feature a dedicated logophoric complementizer.

### A.3 Logophoricity in Ewe

Ewe has a logophor, *yè*, which occurs under the scope of the perspectival complementizer *be*, as in (262)\(^1\).

(262) Ewe Logophor

\[\text{(262) Ewe Logophor} \quad \text{[Clements (1975)]}\]

\[\begin{align*}
\text{a. kofi be } & \text{ yè-dzo} \\
& \text{Kofi(M) COMP LOG-leave} \\
& \text{‘Kofi, said that \(s\)he left’}
\end{align*}\]

\[\begin{align*}
\text{b. kofi be } & \text{ e-dzo} \\
& \text{Kofi(M) COMP 3.SG-leave} \\
& \text{‘Kofi, said that (s)he \textsuperscript{3/4} left’}
\end{align*}\]

As is typical of logophors, it requires coreference between its referent and the matrix subject. While a third person pronoun is possible in (262b), it cannot refer to Kofi. *yè* is a “pure logophor” in the parlance of Culy (1994), meaning that *yè* is only used as a logophor, and does not have any other function. The non-logophoric pronouns are listed in (263).

---

\(^{1}\) Pearson (2015) notes that a 2 of 6 consultants accepted this reading.
<table>
<thead>
<tr>
<th></th>
<th>STRONG</th>
<th>WEAK: SUBJ</th>
<th>WEAK: OBJ</th>
<th>WEAK: GEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 sg.</td>
<td>nye</td>
<td>me</td>
<td>m</td>
<td>nye</td>
</tr>
<tr>
<td>2 sg.</td>
<td>wò</td>
<td>è (nè)</td>
<td>wò</td>
<td>wò</td>
</tr>
<tr>
<td>3 sg.</td>
<td>ye (yì)</td>
<td>e (wò)</td>
<td>e (i)</td>
<td>e</td>
</tr>
<tr>
<td>1 pl.</td>
<td>míawo</td>
<td>mìe</td>
<td>mí</td>
<td>mìa</td>
</tr>
<tr>
<td>2 pl.</td>
<td>míawo</td>
<td>míe</td>
<td>mi</td>
<td>mìa</td>
</tr>
<tr>
<td>3 pl.</td>
<td>woaow</td>
<td>wo</td>
<td>wo</td>
<td>wo</td>
</tr>
</tbody>
</table>

Table A.1: Ewe pronouns

The logophor, yé is differentiated from the third person singular pronoun ye by the presence of a high tone. It is also differentiable from a third person pronoun by its plural form, yèwo, which differs from any of the third person plural forms.

Reflexive pronouns in Ewe are composed of a genitive pronoun followed by dokui. As is typical of reflexive pronouns, they are employed in configurations involving local coreference, as in (264a). Logophors are not possible in these configurations, as evidenced by the ungrammaticality of (264b).

(264) Ewe logophors are not reflexive pronouns

a. kofi lɔ e dokui
Kofi(M) love 3.SG self
‘Kofi loves himself’

b. *kofi lɔ yè
Kofi(M) love LOG
INT: ‘Kofi loves himself’

The logophor occurs in configurations of coreference between a higher perspective holder and an argument in an embedded clause, as in (265a). The reflexive pronoun cannot serve this function in lieu of the logophor, (264b).
Ewe logophors are not reflexive pronouns

a. kofi be yé-dzo
   Kofi(M) COMP LOG-leave
   ‘Kofi, said that he left’

b. *kofi be e dokui dzo
   Kofi(M) say 3.SG self leave
   INT: ‘Kofi said that he left’

yé cannot be used in to refer to a higher perspective holder if that perspective holder is the speaker in the utterance context. There seems to be some variation regarding whether it can be second person.

Ewe logophors referring to the addressee

a. è-be yè-a-va
   2.SG LOG-T-come
   ‘you, said that you, would come’

b. è-be yèwo-a-va
   2.SG-say LOG.PL-T-come
   ‘You, said that youi+1 would come’

Some recent research on Ewe logophors (Pearson, 2013, 2015) disputes the generalization that all logophors must be interpreted de se. Subsequent experimental work by a native speaker linguist (Bimpeh (pear)) finds that the Ewe logophor does require a de se interpretation. For the purposes of this chapter, I will assume that the logophor is obligatorily read de se.

The logophor occurs only under the complementizer be. As discussed in the first chapter, this complementizer can be used in a matrix clause to convey reported speech, as in (267b).

a. john bù be yè nya nu
   John think COMP LOG know thing
   ‘John, thinks that he is smart’
b.  john be yè nya nu  
    John COMP LOG know thing  
    “John says that he is smart”

As observed in chapter 1 of this dissertation, as well as in Clements (1975), *be* does not behave like a typical verb in Ewe. Clements (1975) bases this conclusion on the morpho-logical invariance of *be*.

In (268), the verb *gblɔ*, “say” is combined with a prefixal element *ma* that is a fusion of the first person pronoun *me* and the future marker *a*. This is grammatical in (268a), but the reportative complementizer *be* cannot occur with this morphology.

(268) a.  ma-gblɔ be kofi le afe me  
    1.SG/T-say that kofi be home in  
    “I will say that Kofi is at home”  
    Clements (1975)

b.  *ma-be kofi le afe me  
    pro/T-that Kofi be home in  
    INT: “I will say that Kofi is at home”  
    Clements (1975)

Ewe also has aspectual reduplication, which can be seen in (269a). Applying this reduplication to a sentence with *be* and no lexical verb results in ungrammaticality.

(269) a.  me gɔa-gblɔ-m be kofi le afe me  
    pro RED-say-A that Kofi be home at  
    “I am saying that Kofi is at home”  
    Clements (1975)

b.  *me be-be-m kofi le afe me  
    pro RED-that-A Kofi be home at  
    INT: “I am saying that Kofi is at home”  
    Clements (1975)

In addition to the morphological evidence in Clements (1975), evidence suggests that there is no matrix clause for the purposes of adverbial modification. In (270a), it is possible to modify the saying event with a manner adverb, but this possibility is absent in (270b).
These examples provide support for an analysis that treats *be* as a reportative complementizer. Unlike Tigrinya, which had two types of finite clausal embedding, Ewe has only one, those headed by *be*. This means that there are no minimal pairs of clauses that show logophors to be associated with one type of clause to the exclusion of the other. However, there is still evidence that the logophor must occur under *be*.

First, it unsurprisingly cannot occur in matrix clauses. The version of (271) shows that only the pronoun, and not the logophor, are possible in this configuration.

(271) e/*yè dzo
3SG/*LOG leave

“he left”

However, *yè* is possible in embedded clauses, but must refer to the matrix attitude-holder. The regular pronoun *e* is also possible. Sources differ regarding the possibility of using a regular third person pronoun to refer to the speaker in as in (272b): Clements (1975) says that it is not possible, while Pearson (2015) says that it is.

(272) a. kofi be yè dzo
Kofi say LOG leave

“Kofi, said that he, left”

b. kofi be e dzo
Kofi say 3SG leave

“Kofi, said that he, left.”

Based on (272), one might hypothesize that the correct generalization has nothing to do with the presence of *be*, but rather that the logophor might be prohibited in root clauses, perhaps as part of a requirement that the logophor be separated from its antecedent by a
clause boundary, as has been claimed for some cases of long distance anaphora. However, there are non-root environments where the logophor is excluded. For example, (273a) shows that the logophor is not licensed in relative clauses. If, however, the relative clause is embedded under *be*, the logophor is permitted, as in (273).

(273) a. ama do nku nyɔnvi hi dze e gbɔ diyi
   Ama(f) set eye girl WH stay 3.SG side on
   “Ama remembered the girl who stayed with her”

   b. ama gblo be yɛ-do nku nyɔnvi hi dze yɛ gbɔ diyi
   Ama(f) say that LOG-set eye girl WH stay LOG side on
   “Ama said that she remembered the girl who stayed with her”

Not only does (273b) show that the logophor is possible under *be*, it shows that logophors can be licensed across clause boundaries.

The examples in (273) are constructed using a verb that expresses a the mental state of the subject, to maximize the likelihood that any semantic restrictions on the distribution of logophors would be satisfied. However, one might object by suggesting that the crucial licensor for logophors is some kind of clause-embedding verb. There are two reasons to believe that this is not the case. First, there are verbs that can embed either finite or non-finite complements, which allow logophors only inside finite complements, as in (274). So the presence of an attitude verb is not sufficient to license a logophor.

(274) Non-logophoric attitude predicates

   a. kofi se koku wɔ-ɔ e dzu-m
      Kofi(m) hear Koku(m) 3SG-be 3SG insult-A
      “Kofi heard Koku insulting him”

   b. kofi gblo be yɛ-se koku wɔ-ɔ yɛ dzu-m
      Kofi say that LOG-hear Koku 3SG-be LOG insult-A
      “Kofi said that he heard Koku insulting him”

Further, there are two environments in Ewe where logophors can appear independent of an attitude predicate. One, as mentioned, is the matrix complementizer configuration. Another is result clauses, as in (275).
Logophors in result clauses

Clements (1975)

a. kofi wɔ-wɔ-m be koku va yé gbɔ

Kofi(M) RED-do-A C Koku(M) come LOG side

‘Kofi is arranging for Koku to come to him’

b. e-yi be yé-a-va-kpɔ ɛɔku

pro-go C LOG-T-P-see Koku(M)

‘He went to see Koku’

It is surprising that this complementizer can be used in this context, as it does not appear to be an attitude report. The generalization of logophoric contexts to these kinds of clauses is discussed in more detail in Charnavel (2019b). I will not discuss these examples in more detail, but show them only to illustrate the clear generalization that logophors in Ewe depend on the presence of be.

A.4 Formal models of Logophoricity

Syntactically, logophors are modeled as being bound by either an operator or the covert pronominal specifier of an operator that functions as a syntactic head. I identify this operator with the perspectival complementizer, and opt for an analysis where binding is via a pronominal element, that may be covert, but in some languages, may also be overt.

The semantics of be in Ewe can be given the same semantics as were attributed to ?i1 in the previous two chapters.

(276) \[ \text{be} = \lambda p(i,t) . \lambda x . \lambda s . \text{Author}(x)(s) \land \forall i' \in \text{Compatible}(s) \rightarrow p(i') \]

This resembles the logophoric operator of other works in that it takes a proposition and an individual relates that individual to the proposition as the perspective holder. As in previous chapters, the need for the individual argument of 276 to be the person who is the author of the utterance is enforced by the denotation of the perspectival complementizer.

Following the assumptions of Kratzer (1998); Heim (2002), Stechow (2002), I assume that logophors have the feature [+ log], and must be syntactically bound within the sentence by an element that also has this feature. This element will be the perspective holder.
argument of the perspectival complementizer, on the assumption that this complementizer can assign a [+ log] feature to the element in its specifier.

(277) kofi be yè dzo
Kofi that LOG leave
“Kofi said that he left”

(278)

(279) ama gbló be yè-do nku nyɔnuvi hi dze yè gbsɔ dyi
Ama(f) say that LOG-set eye girl WH stay LOG side on
“Ama said that she remembered the girl who stayed with her”
A.5 Logophoricity vs. Exempt Anaphora

A commonly observed fact cross-linguistically is that anaphors in some languages can violate Condition A, and that in those configurations where Condition A is violated, there is an additional meaning component contributing some kind of perspective-taking interpretation. Because both logophors and these Condition A disobeying anaphors (“exempt anaphors” to adopt terminology from Charnavel (2012)) seem to involve taking on the perspective of a non-speaker individual, a common assumption is that logophors and exempt anaphora are
at some level of representation the same phenomena. By contrast, Culy (1994) argues that exempt anaphora and logophoricity are two different phenomena.

This chapter so far has pursued the hypothesis that logophoricity is endemic to clauses with peripheral structure associated with perspective. Though it may not always be the case that such clauses are clearly identifiable because of specialized clause-marking, it is often true that this is the case. If exempt anaphora is reducible to logophoricity, and logophoricity is constrained to clauses that contain perspectival projections, then it should follow that exempt anaphora should also occur exclusively in these domains as well.

Malayalam turns out to be a useful test case here. There is a complementizer, ennu, that can also be used to convey reported speech, and there is an exempt anaphor, taan. By the predictions laid out this far, if the exempt anaphor is actually a logophor, then it should occur exclusively under the reportative complementizer. This, however, turns out to be false, as shown in (281).

(281) Exempt Anaphors in Malayalam

\[ \text{tan}_i\text{-te makkaal-ude perumaattam john}_i\text{-ine weedanippiccu.} \]
\[ \text{self-GEN children-GEN behavior John(M)-ACC pained} \]
\[ \text{‘Self,’s children’s’ behavior pained John,’} \]

(281) is a monoclause without the perspectival complementizer in the structure, but the anaphor taan is still possible, even without a c-commanding antecedent. This is exactly the kind of configuration that is impossible for languages with “pure logophors”, in the terminology of Culy (1994). There are multiple ways of interpreting this result: either (281) is indicating that exempt anaphora is not reducible to logophoricity, that the empirical generalization that logophors are constrained to a particular type of clause is wrong, or that (281) covertly contains a logophoric complementizer. I will present arguments in the following section that logophoricity and long-distance anaphora are distinct phenomena, but first, I will use the rest of this section to outline some of the foundational assumptions about long-distance anaphora.
A.5.1 Malayalam

According to Jayaseelan (1998), Malayalam has a long-distance anaphor, \textit{taan}, which must have an animate, third person antecedent, and is unmarked for gender. He proposes that \textit{taan} is antilocal, in that “\textit{it cannot be bound by the minimal subject (i.e. the subject of the phrasal head of which \textit{taan} is an argument}”. This property can be observed in (284).

Jayaseelan (1998) describes the distribution of the long-distance anaphor \textit{taan} in Malayalam. \textit{taan} is anti-local, in that it cannot be bound by the minimal subject:

\begin{enumerate}
\item[(282)]
\begin{enumerate}
\item *johni \textit{taan}-ne sneehikkunn-illa
  \begin{enumerate}
  \item John self-acc love(pres)-neg
  \end{enumerate}
  \begin{enumerate}
  \item INT: “John does not love self”
  \end{enumerate}
\item johni wicaaricc [maryj \textit{taan}-j-ne sneehikkunn-illa emmo]
  \begin{enumerate}
  \item John thought Mary self-acc love(PRES)-neg COMP
  \item “John thought that Mary does not love self\textit{i/j}”
  \end{enumerate}
\end{enumerate}
\end{enumerate}

But this characterization is not quite accurate, in that configurations like (283) are possible, where the clause-mate subject is actually the antecedent. Therefore, the anti-locality conditions must be more fine-grained than described in Jayaseelan (1998).

\begin{enumerate}
\item[(283)]
  \begin{enumerate}
  \item johni \textit{taan}-te bhaarya-ye nulli
    \begin{enumerate}
    \item John self-gen wife-cc pinched
    \end{enumerate}
    \begin{enumerate}
    \item “John pinched self’s wife”
    \end{enumerate}
  \end{enumerate}
\end{enumerate}

Jayaseelan (1998) therefore proposes that \textit{taan} is licensed by a perspectival projection in the clause periphery.

\begin{enumerate}
\item[(284)]
  \begin{enumerate}
  \item johni wicaaricc [prologi maryj \textit{taan}-j-ne sneehikkunn-illa emmo]
    \begin{enumerate}
    \item John thought Mary self-acc love(PRES)-neg COMP
    \item ‘John thought that Mary does not love self\textit{i/j}’
    \end{enumerate}
  \end{enumerate}
\end{enumerate}

The mechanism he suggests to account for the data above is strikingly similar to the current proposal. He argues for a structure in which a Perspectival projection in the CP layer of the clause\textsuperscript{4} that licenses \textit{taan}. This projection is headed by an element that takes

\begin{enumerate}
\item[(284)]
  \begin{enumerate}
  \item Jayaseelan (1998) proposes that this projection is optional; it is unclear if there are contexts where it is prohibited.
  \end{enumerate}
\end{enumerate}
the index and $\phi$ feature of a perspective holder. $taan$ has a third person feature, as well as feature [PERSECTIVE] that requires it be bound by the perspectival head, but it lacks a referential index. It must therefore move at LF to the PERSPECTIVE projection to receive a referential index. This movement can be successive-cyclic, as long as the person and referential features of $taan$ do not at any point in the derivation conflict with the person an number features of PERSPECTIVE.

Both Jayaseelan (1998) and this dissertation have suggested that there is a perspectival projection in Malayalam. I, however, have identified this projection with the morpheme -ennu, while under the analysis in Jayaseelan (1998), this projection can be anywhere. Prima facie, he appears to be correct that the distribution of $taan$ is better predicted by positing a covert perspectival projection in every clause than by constraining them to clauses headed by ennu.

The strategy at the core of Jayaseelan (1998), that exempt anaphors are bound by a covert element, persists in the literature. Work that builds on Jayaseelan (1998) has proposed a refinement of the relationship between the exempt anaphor and its antecedent, arguing that the binding relationship might be more local than within a clause.

A.5.2 Condition A and exempt anaphora

The intuition behind work like Jayaseelan (1998) is that exempt anaphors should somehow be reducible to plain anaphora. In other words, they should at some level of representation be bound within their Binding Domain, as per Condition A. To accomplish this goal, or even evaluate whether this is truly the correct analysis, we must have a reliable understanding of Condition A, and in particular, of what constitutes a Binding Domain. This is a large and controversial topic, but Charnavel and Sportiche (2016) attempts to shed light on the locality conditions on anaphoric binding by observing a confound that arises when exempt anaphora are taken into consideration. Recall that exempt anaphors are those that appear to defy Condition A and that introduce a perspectival meaning component. Defining the relevant domain for Condition A and accounting for examples that constitute an exception to Condition A is therefore under threat of a kind of circularity. Charnavel and Sportiche
(2016) escapes this circularity through the observation that exempt anaphors must be able to hold a perspective, and are therefore necessarily animate. In determining the relevant domain for Condition A, it is possible to avoid erroneous results based on the presence of exempt anaphors by considering only examples where the antecedent of the reflexive pronoun is inanimate. In this way, the properties of plain anaphors can be studied independent of these so-called exceptional cases.

To demonstrate this method, consider the French example from Charnavel (2019a) in (285).

(285) Marie\textsubscript{i} subit [\textit{DP l’influence \textit{PP des nombreux politiciens \textit{CP qui tournent autour d’elle\textsubscript{-}(mème)}}}].

Mary\textsubscript{i} is subject to the influence of the many politicians that revolve around her\textsubscript{-}\textit{(self)}

Based on (285), one might be inclined to think that reflexive pronouns can be bound by a relative clause contained within a PP complement of a DP coargument of the antecedent. However, if a reflexive pronoun with an inanimate antecedent is placed in the same position, the result is ungrammaticality, as in (286b).

(286) a. La Terre\textsubscript{i} tourne autour d’elle\textsubscript{-}*(mème)
The earth\textsubscript{i} revolves around \textit{it\textsubscript{-}*(self)}

b. La terre\textsubscript{i} subit [\textit{DP l’effet gravitationnel \textit{PP des nombreux satellites \textit{CP qui tournent autour d’elle\textsubscript{-}*(mème)}}}]
The earth\textsubscript{i} is subject to the gravitational effect of the numerous satellites that revolve around \textit{it\textsubscript{-}*(self)}}]

Example (286a) proves that an inanimate DP can in principle (and here must) anteced e elle-même, but in (286b), a reflexive pronoun is not possible, despite its structural parallels to (285). Thus, in defining the domain of Condition A, considering data where the antecedent of the reflexive is animate, as in (285) will lead to spurious conclusions.

By employing this method, Charnavel (2012) ultimately argues that Condition A is reducible to phase boundaries. To understand the logic of this conclusion, consider as a starting point the following definition of a binding domain, from Chomsky (1986).
(287) An anaphor must be bound within the smallest XP containing an anaphor and a subject distinct from the anaphor.

For the moment, we will ignore the requirement that the subject must be distinct from the anaphor, and turn our attention to the projections that will constitute barriers for reflexive binding: any DP with a possessor, and and TP with a subject. This predicts that binding into DPs will be impossible if the DP has a possessor, which is correct:

(288) a. The machine developed the pictures of itself,

b. The machine developed the camera’s pictures of itself

Based on (288b), the formulation of Condition A in (287) correctly rules out binding across an intervening possessor. If the possessor is itself the anaphor, binding from outside the DP is permitted. Testing this requires genitive reflexive pronouns, which English lacks, but which exist in French.

(289) [Ce pont] dispose de son (propre) architecte

[This bridge has its own architect.]

Charnavel and Sportiche (2016)

Further, if the reflexive is contained within the possessor, then binding from an antecedent in a position external to the DP should be possible as well. This is the case, as in (290).

(290) [Cette entreprise] suscite l’admiration de son (propre) patron et la colère des patrons concurrents

[This company arouses the admiration by its own managers and the anger of the competing managers]

Based on (289) and (290), the generalization as written in (287) holds, even for inanimate reflexives which do not allow perspectival binding.

The predictions for TP as an intervener are more complicated. This will not rule out binding within a clause, unless that binding crosses a DP with a specifier. In considering
binding across clauses, and again putting aside subjects for the moment, (287) predicts that binding of an object anaphor will not be able to cross a finite clause boundaries. This is well known to be true.

(291) *I$_{i}$ believe Liz to have given myself$_{i}$ a present.

It also predicts that reflexive objects embedded inside ECM complements cannot be bound from outside the ECM complement, which again is a correct prediction.

(292) *I$_{i}$ want Liz to give myself$_{i}$ a present.

However, if we consider subjects, the data is more complicated. First, (287) predicts that subjects of finite clauses should be able to be bound an an antecedent from outside the clause, which is not possible.

(293) *I$_{i}$ know that myself$_{i}$ will win the competition.

Chomsky (1986) must resort to independent principles to rule out the structure in (293). It is also predicted that reflexive pronouns should be possible in ECM configurations, which is true:

(294) [The DNA evidence]$_{i}$ proved itself$_{i}$ to be planted.

Another prediction is that reflexive pronouns inside subjects can be bound from outside the clause. At first glance, it does seem to be the case that anaphors within subjects of finite clauses can be bound by an antecedent in the higher clause.

(295) Mary$_{i}$ thought that pictures of herself$_{i}$ would really tie the room together.

However, the same configuration is not possible with inanimate reflexives, as in (296).

(296) [The museum]$_{i}$ announced that pictures of itself$_{i}$ would be on display in every gallery.

Charnavel and Sportiche (2016) points to the impossibility of binding and inanimate anaphor inside a subject as a motivator for reanalyzing binding domains in terms of phases.
If CP, by virtue of being a phase head, also delimits a binding domain, then it would no longer need to appeal to independent principles to rule out anaphors as the subject of a finite clause, as in (292). There typically not nominals in A-positions above a subject but within a CP. Positing CP as a boundary for binding accounts for the ungrammaticality of (295) and (296).

In the example where binding a reflexive pronoun is subject position is possible, (294), there is no CP layer by virtue of being an ECM complement.

If phases delimit binding domains, then a vP projection with an external argument must also be a phase. This raises a potential problem for the basic case of a reflexive object being bound by a local subject. In order to avoid these problems, Charnavel and Sportiche (2016) formulates the binding possibilities for elements at a phase edge quite carefully. Consider the following example:

(297) \[v_{P1} \text{[La terre], lasise} \ldots[v_{P2}[DP_{1}sa_{i} propre atmosphère]_{k} modifier [DP_{2} sa_{k/\ast i} propre composition]]]\]

[The earth] let \[XP\text{ its own atmosphere}k\ modify [itsi own composition]]

In (297) the only possible reading is one where the atmosphere is modifying its own composition, rather than the composition of the earth itself. There are three phases to consider: the highest vP, labeled vP1, the lower vP of the embedded nonfinite clause, labeled vP2, the DP ECM subject, labeled DP1, and the DP object of modifier, labeled DP2. It must be possible for La terre to bind sa in sa propre atmosphère, given the interpretation of (297). We might want to conclude on the basis of this evidence that the antecedent le terre counts as being within the phase, by virtue of being a specifier of a phase, for the purposes of binding. However, if we consider specifiers of phase heads to be part of the lower phase rather than part of the higher phase, then the anaphor is separated from the antecedent by two phase boundaries: VP2 and DP1. Based on this, Charnavel (2012) proposes that elements in the specifiers of phase heads are available to both the lower and the higher phases. This derives the right result for binding between le terre and sa propre, as well as binding between sa propre atmosphère and sa in the lower DP, while ruling out the unattested binding between la terre and sa in DP2.

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The system developed in Charnavel (2012), which requires binding within a phase, imposes a new restriction on analyses that attempt to treat exempt anaphors as plain anaphors bound by covert elements. Specifically, Jayaseelan (1998) posited a covert antecedent at the edge of every clause, but if anaphors must be bound within their phase, the antecedents in the CP layer would be too distant to object anaphors. Instead, Charnavel and Zlogar (2015) locates the covert antecedent at phase boundaries. Charnavel and Zlogar (2015) argues that this is a welcome result. It makes two predictions that the alternative hypothesis, that there is a covert antecedent at CP only, incorrectly rule out.

First, if the only antecedent available is at CP, and there is only one antecedent, then the exempt anaphors within a clause should only be able to refer to that individual — multiple exempt anaphors referring to multiple individuals should be impossible. However, Charnavel (2019a) shows that it is actually possible to have multiple exempt anaphors with different referents in the same clause.

(298) Context: Loïc mistakes photos of me (taken from behind) for portraits of himself and finds them beautiful, while I think they are horrible.

Loïc i pense que [DP pro_log-k les affreuses photos de moi, même] sont [vP pro_log-i de magnifiques portraits de lui, même]

‘Loïc i thinks that [DP pro_log-k the horrible photos of myself are magnificent portraits of himself]’

Second, there are configurations where, according to an analysis like Jayaseelan (1998), an operator in the periphery of the clause should bind not only a logophor, but also an r-expression in the same clause. (299) are two such configurations. In (299a), a clause-peripheral binder would bind Paul, and (299b) it would bind Lucie.

(299) a. Le courage de Paul i a [vP pro_log-i sauvé des flammes sa, propre maison et celle de ses voisins].

‘Paul,’s courage [vP pro_log-i saved from the fire his, own house and his neighbors’].’

b. [DP pro_log-i, Les commentaires des internautes sur elle, même] ont atteint le
moral de Lucie

‘[\(DP \ pro_{log-1}\) The net surfers’ comments about herself,\(i\)] have affected Lucy’s morale.’

However, both of these sentences are grammatical. On an analysis where the binding domain is the phase, this is the predicted result. In (299a), the antecedent for the anaphor must be at the edge of the vP, which is a position where it will not bind Paul. Likewise, in (299b), the antecedent for the anaphor is at the edge of the DP, meaning that the antecedent is not in a position to c-command Lucy.

Both of these syntactic properties suggest that the correct analysis of exempt anaphora is one that locates the antecedent at a phase edge, rather than a clause edge.

### A.5.3 Distinguishing exempt anaphors from logophors

So far, we have seen that analyses of both logophors and exempt anaphors are conceptually similar, in that both employ sometimes covert local binders that relate them indirectly to their antecedents. The major theoretical difference between the two relates to their distributions. Logophors must occur under a perspectival complementizer, but the distance between that complementizer and the logophor is not constrained. On the other hand, exempt anaphors are required to be very local to their binders, but that locality condition is very easily satisfied, as every phase edge can contain a binder. Though these analyses are different, the predictions they make are difficult to tease apart, but this section attempts to do just that. Not all of the diagnostics in this section produce clear results for both logophors and exempt anaphors. For example, we can identify exempt anaphors by the lack of Condition A effect discussed above, but the relevant configuration for logophors does not arise. Likewise, logophors show \textit{de re} blocking effects, but for exempt anaphors the same configurations are grammatical, but without the interpretation that the antecedent is a perspectival center.

One clear prediction is about distribution: a logophor should only appear in clauses headed by a perspectival complementizer, while an exempt anaphor should be able to occur in any position where the requisite pragmatic conditions are satisfied. As noted in Culy,
(1994), this prediction is actually borne out.

**Distribution**

The most robust difference between the analyses of long-distance anaphora and logophors is that logophors are predicted to occur only in perspectival clauses, whereas long-distance anaphors can occur in any clause. This contrast is most evident in languages like Ewe, which have an overt morpheme that indicates a clause is perspectival. However, even in absence of such a morpheme, there are selectional constraints imposed on perspectival clauses. These clauses, and therefore logophors, should only occur in attitude report configurations, and should conform to a hierarchy of predicate types.

Languages with exempt anaphors systematically fail to observe this constraint. In English, exempt anaphors are available in matrix sentences, as in (300)

(300)  
\begin{enumerate}
  \item The paper was written by Anne and myself. \textit{Ross (1970)}
  \item Albert\textsubscript{i} was never hostile to laymen who couldn’t understand what physicists like himself\textsubscript{i} were trying to prove. \textit{Ross (1970)}
\end{enumerate}

Chinese (301a), Icelandic (301b) and French (301c) all also allow exempt anaphors without requiring a perspectival complementizer.

(301)  
\begin{enumerate}
  \item \textit{Huang and Tang (1991)}
    \begin{verbatim}
ziji\textsubscript{i} de xiaohai mei jiang de xiaoxi shi lisi\textsubscript{i} hen nanguo REFL child not get prize DE news make Lisi very sad
    \end{verbatim}
    ‘The news that his\textsubscript{i} own child did not get a prize made Lisi\textsubscript{i} very sad.’
  \item \textit{Maling 1984’}
    \begin{verbatim}skoðun jóns\textsubscript{i} er að sig\textsubscript{i} vanti ñefileika opinions John’s is that REFL lacks-SUBJ talents
    \end{verbatim}
    ‘John’s opinions is that he\textsubscript{i} lacks talents.’
  \item \textit{les pertes de mémoire [du vieillard]i, agissent autant sur son\textsubscript{i} (propre) caractère que sur cellui des infirmières the memory loss of the old man\textsubscript{i} affected his\textsubscript{i} (own) character as much as that of the nurses.}
\end{enumerate}
One could suggest that these examples contain a covert version of the perspectival complementizer, which occurs in matrix clauses in Tigrinya, Ewe, and Malayalam. However, if this were the case, we would expect the sentences in (300) and (301) to be interpreted as reported speech, contrary to fact.

Languages with prototypical logophors cannot occur in these configurations, a fact which Culy (1994) also uses as evidence that exempts anaphors are not the same as logophors.

(302) a. taro wa keiko ga zibun no imooto to hanashi o siteiru
   Taro TOP Keiko SB self GEN younger sister DAT talk OB talking
   no o kiita
   NOM OB heard
   ‘Taro heard Keiko talking to his sister’

b. *kofi se koku wò le yè du-m
   Kofi hear Koku 3rd be LOG insult-PROG
   INT: ‘Kofi heard Koku insulting him’

The data from Ewe presented in the previous sections conform to this hierarchy. There are examples where the logophor occurs outside of a clause headed by be, as in (?), but as noted in Pearson (2015), the logophor must be interpreted within the scope of the reported attitude, suggesting that this configuration is actually one of modal subordination.

(303) kofi be yè bidzi. marie zu yè
   Kofi say LOG angry. Mary insult LOG
   ‘Kofi said that he was angry. Mary insulted him.’

Exempt anaphors do not conform to these distributional constraints. This difference in distribution is predicted given the differences between the analysis of logophors presented in this chapter and the analysis of exempt anaphors in Charnavel and Sportiche (2016).

**Condition C violations**

One area where recent analyses of exempt anaphora make different predictions than analyses of logophoricity is with respect to Condition C. The analysis I have presented so far for
logophors posits a binder in the periphery of the clause:

(304) \[
\text{[ PRO}^{\text{+log}} \text{ CP [ ... [ TP [ vP [ VP ] ] ] ] ]}
\]

On the analysis presented in [Charnavel (2019a)], there are optionally logophoric binders at every phase edge.

(305) \[
\text{[ (PRO}^{\text{+log}} \text{) CP [ ... [ TP [ (PRO}^{\text{+log}} \text{) [ vP [ VP ] ] ] ] ] ] ]}
\]

According to [Charnavel (2019a)], exempt anaphors must be bound within their phase. If, for example, there is an exempt anaphor in the object position, it must be bound at the vP level.

(306) \[
\]

Logophors, however, are not subject to this locality condition. The closest position that a binder for a logophor in the object position could occupy is in the periphery of the clause that contains it:

(307) \[
\text{[ PRO}^{\text{+log}} \text{ CP [ ... [ TP [ vP [ VP LOG] ] ] ] ]}
\]

These two structures make different predictions about the behavior of r-expressions between CP and TP that refer to the logophoric center. On the structure given in (307), an r-expression that refers to the logophoric center should not be able to occupy a position spec-TP, because it will be bound by the logophoric argument at the CP layer and trigger a condition C violation. Because the structure in (306) for reflexive pronouns locates this logophoric center at the edge of the VP phase, an element occupying the spec-TP position will not be c-commanded by the logophoric center, and no binding will occur. This is borne out with respect to long-distance anaphors, as in (308), where Paul, which corefers to the logophoric center, can occur in the subject position of the clause.

(308) Le courage de Paul, a \[_{vP} \text{pro}_{\text{log}} \text{−}i\] sauvé des flammes sa, propre maison et celle de ses voisins].
‘Paul’s courage \[_{vP} \text{pro}_{log-i} \text{ saved from the fire his, own house and his neighbors’}.’

It is not even possible to construct parallel examples in Ewe. Ewe requires that the logophor be contained within a clauses headed by \textit{be}, which always has a perspectival argument. Any logophor inside the scope of \textit{be} will necessarily be c-commanded by the perspectival argument.

\begin{equation}
(309) \quad \text{[PersP Kofi}_i/\text{pro}_i \text{ be ... } [TP \text{ ... Kofi}_i ]}
\end{equation}

\textbf{Constraints on multiple logophors/exempt anaphors}

The phase-bound proposal of \textcite{Charnavel2012} predicts multiple exempt anaphors with distinct referents should be possible within a clause, but not within a phase. This prediction arises because each phase allows, maximally, a single logophoric pronoun as the antecedent contained at the edge of a phase. Exempt anaphors, which are on her analysis, actually just standard logophors, must be bound within the phase, meaning that the only possible antecedent is this pronoun. If there is more than one exempt anaphor in the phase, they both must be bound by the same antecedent, and therefore must have the same referent.

However, the there is no locality requirement between logophors and their antecedents, as long as the antecedent is in a c-commanding position in the same sentence as the logophor. Therefore multiple logophors with distinct referents should be possible regardless of how close these two logophors are to each other, as long as there are two perspectival complementizers so that each logophor has an antecedent.

It turns out that both systems make the correct predictions. In

\begin{equation}
(310) \quad *\text{Christel}_i \text{ pense qu’Agnès}_k \text{ a dit que l’avenir de son }_i \text{ fils dépend à la fois d’elle}_i\text{-mêm e et de son}_k \text{ propre fils.}
\end{equation}

‘*Christel$_i$ thinks that Agnès$_k$ said that her$_i$ son’s future depends both on herself$_i$ and her$_k$ own son.’
(311)  *Loic mistakes photos of me (taken from behind) for portraits of himself and finds them beautiful while I think they are horrible*

Loic\textsubscript{i} pense que [\textsubscript{DP} pro\textsubscript{log} \textsubscript{−k} les affreuses photos de moi\textsubscript{k}-même] sont [\textsubscript{vP} pro\textsubscript{log} \textsubscript{−i} de magnifiques portraits de lui\textsubscript{i}-même]

“Loic thinks that the horrible photos of myself are magnificent portraits of himself”

(312)  *marie be kof\textsubscript{i} xose be yè na yè cadeau Marie\textsubscript{i} that Kofi\textsubscript{j} believe that LOG\textsubscript{i,j/sk} gave LOG\textsubscript{j,i/sk} gift*

“Mary said that Kofi believed that she gave him a gift”

“Mary said that Kofi believed that he gave her a gift”

(313)  a.  *kofi gblo be ama gblo be y\textsubscript{o}ku de ye yof\textsubscript{i} fia (ye) ama Kofi\textsubscript{i} say that Ama\textsubscript{j} say that Koku remove log Kofi\textsubscript{j} show log Ama say that Ama\textsubscript{i} said that Koku introduced him\textsubscript{i} to her\textsubscript{j}”

b.  *yof\textsubscript{i} gblo be ama gblo be ye yof\textsubscript{i} de y\textsubscript{o}ku fia (ye) ama Kofi\textsubscript{i} say that Ama\textsubscript{j} say that log Kofi\textsubscript{j} remove Koku show log Ama say that Ama\textsubscript{i} said that yè\textsubscript{1} introduced Koku to yè\textsubscript{2}”

A.5.4  *De re blocking*

The de re blocking effect is fundamentally an intervention effect where a non-logophoric element intervenes between a logophor and its antecedent. The general shape of cases of de re blocking is schematized in (314).

\[
\text{(314) } \text{[antecedent}_{i,[+\text{log}]} \text{ be } [\ldots \text{[pro}_{i,[-\text{log}]} \ldots [\ldots \text{logophor}_{i,[+\text{log}]} ] ] ]}
\]

In the structure in (314), a non-logophoric pronoun coreferenced with the logophor intervenes between the argument of *be* and the logophor itself.

[Anand (2006)] proposes that de re blocking effects are visible in English under “*dream*”:

(315)  *I\textsubscript{i} dreamt I\textsubscript{j} was Brigette Bardot and I\textsubscript{j/sk} kissed me\textsubscript{i}*

[Lakoff (1972)]
The claim made by Lakoff (1972) is that there is a contrast in the grammaticality of this sentence depending on the indexing of the two pronouns. A possible reading is one where Bridgette Bardot kissed the speaker, and therefore that the first I is the logophor and is bound by the author in the embedded context, who self-identifies for the purposes of this context as Bridgette Bardot. On this coindexing, the logophoric I pronoun c-commands the non-logophoric I pronoun, and the interpretation is possible. The other potential interpretation is one where the speaker kissed Bridgette Bardot. This interpretation is claimed to be unavailable in Lakoff (1972) and elsewhere. Anand (2006) argues that this is because the logophoric I pronoun would be the lower of the two, and that binding of this pronoun is blocked by the intervening first person pronoun.

However, framing this example in these terms requires a particular set of theory specific assumptions about the semantics of English first person pronouns (specifically, that they can and sometimes must be bound by a logophoric operator) and of the semantic properties of “dream”, which (Anand, 2006) must claim embeds a logophoric context in its complement clause, when other English verbs do not. Examples from other languages avoid the complications presented by the English data. For example, In Yoruba, the pronoun òun functions as a logophor in embedded contexts while o is a non-logophoric third person pronoun, which does not require coreference with a higher attitude holder, but allows it. Examples from Adesola (2005)

(316) a. adé_i so pé òun_i ti ̀r’ì ‘iwé rè_t/j
   Ade say that LOG PERF see book 3-gen
   ‘Ade_i said that he_t has seen his_t,j book’

b. ọlu_i se pé o_j/si ̀r’ì bábá òun_i
   Olu say that 3rd see father LOG-GEN
   ‘Olu_i said that he_j/si has seen his_i father’

c. ọlu_i so pé bábá rè_t/j ti ̀r’ì ‘iyá òun_i
   Olu say that father 3rd-gen PERF see mother LOG-GEN
   ‘Olu_i said that his_t,j father has seen his_i mother’

(316) shows the de re blocking effect in Yoruba. In (316a), the logophoric pronoun c-commands the non-logophoric pronoun, and coreference between the two is possible. In
(316b), the non-logophoric pronoun c-commands the logophoric pronoun, and reference between the two pronouns must be disjoint. In (316c), there is no c-command relationship between the two pronouns, and coreference is available, suggesting that linear precedence does not play a role in determining possible coreference. An interesting fact noted by Anand (2006) is that construing the non-logophoric pronoun in (316b) as coreferential with the attitude holder and attributing to the non-logophoric pronoun a de se reading does not ameliorate the problem. The constraint therefore cannot be framed as a prohibition against a non-de se interpretation of a coreferential pronoun intervening between a logophor and its antecedent, but instead rules out the possibility of any coreference, de se or otherwise, when a non-logophoric pronoun intervenes between the logophor and its antecedent.

Ewe also prohibits a third person pronoun from intervening between a logophor and the antecedent:

(317) *ama susu be e-a na yé qa
ama(?) thinks COMP 3sge/sj-POT give LOGi money
‘Ama, thinks that shej/si will give heri money’

The impossibility of coreference does not seem to be the result of a condition B violation caused by coreference between the subject and object, because there are examples where this configuration is grammatical. Example from Pearson (2015).

(318) john koudrin be yé nyi barak obama koudo yè na yè cadeau
John dream COMP LOG COP Barack Obama CONJ LOG gie LOG gift
‘Johni dreamed that he was Barack Obama and hej gave himselfi a gift’

(Anand, 2006; Deal, 2018; Sundaresan, 2018) use the de re blocking effect as a diagnostic to determine whether an element is a logophor or a shifted indexical. Though the particular details of the analyses differ, the de re blocking effect is always analyzed as some kind of syntactic blocking effect. Anand (2006); ?; a.o. provide specific theories as to why coreferential de re pronouns should block binding of logophors by clause-peripheral operators.

In Ewe:
Context: Ama heard on the radio that a woman in her village won the lottery, and hopes to find out who it was and to be introduced to this woman so that she can ask to borrow money. However, unbeknownst to her, it is actually Ama herself who won the money.

(319) a. * ama susu be e-a na ye ga.
   Ama thinks that 3sg-pot give log money
   INT: “Ama thinks that she will give her money”

   b. * ama susu be ame ade a de ye fia e
   Ama thinks that person indef pot remove log show 3sg
   “Ama thinks that someone will introduce her to her”

In French: we don’t expect blocking at all, because there is not a requirement that the anaphor be bound by a [+log] element.

Summary: logophors vs. exempt anaphors

One diagnostic that applies equally well to both logophors and exempt anaphors is whether it is possible to have multiple occurrences with distinct referents in a single phase: this should be possible for logophors, because binding of logophors is not constrained by distance, but impossible for exempt anaphors, which are constrained by distance.

Other tests apply somewhat less evenly, but are still useful indicators that there is a difference between these two categories. For example, logophors are subject to the de re blocking effect, meaning that they cannot be c-commanded within the clause by a coreferential de se pronoun. On the other hand, if exempt anaphors are actually reducible to plain anaphors bound by covert elements at phase edges, then coreferring elements outside the phase should not be relevant to binding exempt anaphors at all, as they are outside of the binding domain, and c-commanding coreferring de re pronouns within the phase should give rise to standard, non-logophoric reflexive binding.

A.5.5 Back to Malayalam

Recall the discussion of taan in Malayalam above. It looks like a logophoric element, and was considered a logophor by Jayaseelan (1998), in the sense that he believed it to be bound...
by a covert element in the clause periphery.

In this chapter, I have laid out the prediction that logophors should appear under clauses headed by a perspectival complementizer. Malayalam has one such complementizer, ennu, but as discussed above, there is no connection between this complementizer and the presence of taan. This is, at first glance, a problem for my proposal, complicated by the fact that I have proposed a nominal perspective holder element is responsible for binding logophors, and no such element occurs in Malayalam perspectival clauses (see SECTION).

The previous section, however, has presented the possibility that exempt anaphora and logophoricity are different phenomena. We are now in a position to test whether Malayalam taan behaves like a logophor or an exempt anaphor.

A first property we can use to differentiate logophors from exempt anaphors is their distribution. As I have argued here, and as had been previously argued for in Culy (1994), the distribution of logophors radically different than the distribution of exempt anaphors. I have argued that logophors are only available in clauses headed by perspectival complementizers, which are subject to an implicational hierarchy of selecting predicates. Exempt anaphors, by contrast, are available in any position where they are licensed by the semantic or pragmatic factors that determine who a viable perspective holder is.

(320) mary, [john tann,-ne nulli-appool] urakke karannu
   Mary John self-acc pinched-when loudly cried
   “Mary, cried loudly when John pinched her,”

In (320), the element under discussion, taan, is in an adjunct temporal clause. This is not a context selected for by an attitude predicate, and has never been proposed to be a attitudinal context (unlike causal adjuncts, which Charnavel (2019a) proposes are causal). It is not plausible to suggest that (320) is somehow covertly embedded under an attitude predicate, because the interpretation of (320) is not one of an attitude report. It therefore appears as though this instance of taan is occurring without being licensed by a perspectival complementizer. This is similar to exempt anaphors but different than logophors, which constitutes the first piece of evidence that Malayalam taan is not a logophor and therefore does not constitute an exception to the generalization that logophors occur under perspec-
tival complementizers.

Another expectation is that, if *taan* is a logophor, it should be subject to the *de re* blocking effect, where a *de re* element intervening between the logophor and the antecedent perspective holder argument. Exempt anaphors are not expected to be subject to this constraint, because they do not specifically need to be bound by a [+LOG] argument. An intervening coreferential pronoun can itself serve as a binder, giving rise to a grammatical structure with no perspectival interpretation.

(321) shows that *taan* is not subject to *de re* blocking, an observation made in Anand (2006). According to the system proposed in this dissertation, *taan* should be bound by an element associated with the CP layer of the matrix clause, if one is present. The addressee pronoun in the intermediate clause is a *de re* pronoun that intervenes between the matrix clause and *taan*, but, contra the predictions made by *de re* blocking, the resulting sentence is grammatical.

(321)  
```
mary tan-nai_i/s_j snehikkunu ennju  bill_j awan-oode_i pañaññu
Mary.NOM.SG self-ACC loves COMP Bill him-to said

ennju john_i wicaariccu
COMP John_i thought

"John_i thought that Bill_j told him that Mary loves him_i/j"
```

If *taan* is obligatorily bound by a logophoric operator in the periphery of the clause, then this is a surprising result, but if *taan* is bound at the edge of the vP it occurs in, then no *de re* blocking effect is predicted, because the *de se* pronoun does not intervene between the operator and the exempt anaphor.

Another test concerns whether Condition C effects arise in clauses that contain both a r-expression and a logophor. Under the kind of analysis posited here, or in (Anand (2006)), if a logophor is bound at the periphery of a clause by a perspectival antecedent, then that antecedent should be able to bind coreferential nominals within its scope other than the anaphor, potentially causing a Condition C violation. In (322), if there were an element at the edge of the clause to bind the logophor *taan*, then that element would also bind *John* and result in ungrammaticality. However, the actual sentence is grammatical.
Based on these tests, *taan* patterns like an exempt anaphor, and not like a logophor. Recall that, earlier in this chapter, I suggested that Malayalam could be a problematic counter-example to the generalization that logophors occur in clauses that are headed by a perspectival complementizer and contain an author argument. Malayalam does have a perspectival complementizer, and, as per the analysis in Chapter 2, does not have a syntactically present author argument, because that argument is filled by existential closure. However, if exempt anaphors are not reducible to logophors, and if *taan* is an exempt anaphor, which is apparently the case, then the generalization holds that logophors occur under perspectival complementizers.