

Perspectival Domains in Nouns and Clauses

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Abstract Using data from Nyala East (Luhia, Bantu), I argue that both clauses and nouns are “perspectival domains.” This study primarily focuses on novel cases of what I call *epistemic marking* on nouns, analyzed here as deriving from a perspectival operator in the DP left periphery, by analogy to well-known studies of similar effects in the clausal domain (Koopman and Sportiche, 1989; Speas and Tenny, 2003). This study therefore confirms the noted parallels between clauses and nouns (Rosenbaum, 1967) *et seq.*, and introduces a new line of analogy based on transparent morphological evidence. I further situate these findings within the broader function of perspective in Nyala East, showing the three distinct morphological reflexes of perspectival information—found on nouns, clauses, and verbs—reduce to only two distinct perspectival loci in the nominal and clausal domains, again highlighting the commonalities shared across nouns and clauses, to the exclusion of the verbal domain.

Keywords perspective · nominal syntax · clausal syntax · left periphery · complementation · Bantu syntax · Bantu semantics

1 Introduction

In this paper, I explore how *perspective* is distributed in the syntax. It is by now standardly assumed that perspectival information, construed broadly, is associated with the clausal domain, typically situated in the left periphery of the clause (Koopman and Sportiche, 1989; Speas and Tenny, 2003; Speas, 2004; Sundaesan,

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2018, among many others). Perspectival operators and projections have been proposed to cover a number of functions relating to anaphors and logophors, indexicality, intentionality, evidentiality, and general “point-of-view,” among other things.

Given the noted morpho-syntactic parallels between the nominal and clausal domains (Rosenbaum, 1967; Lees, 1965; Takahashi, 2010; Kastner, 2015; Pietraszko, 2019) across languages, we might expect to find similar perspectival information in DP/NP as well. And indeed, to the extent that these issues have been explored, it has also been proposed that the extended nominal domain can house perspectival information (e.g., Charnavel 2019), though this question remains largely understudied as compared to perspective in clauses.

I bring novel data to this discussion by focussing on Nyala East (n1e, JE 32f in Maho 2009), a Luhia Bantu language spoken in Kenya.¹ Nyala East has what I refer to as *epistemic marking* (EM), which appears as a prefix in the following three syntactic environments: prefixed to nouns, complementizers, and verbs. Representative examples are given in (1) with EM in bold, and general schematizations are shown in (2).^{2,3}

- (1) a. NOMINAL-EM
e-vi-ou-vehi
 8AUG-**8EM**-14NC-lie
 ‘a/the lie (that everyone knows about)’
- b. CLAUSAL-EM
vi-chi Masika ka-chi-e
8EM-COMP Masika 1SM-go-FV
 ‘Masika left (according to a lot of people).’
- c. *vi-on-ekh-an-a mbo Masika ka-chi-e*
8EM-see-NEUT-REC-FV COMP Masika 1SM-go-FV
 ‘It seems (to everyone) that Masika left.’ VERBAL-EM
- (2) a. NOMINAL-EM : EM-Noun
 b. CLAUSAL-EM : EM-Complementizer

¹ Nyala East is a Luhia (also Luhya or Luyia) language spoken by approximately 35,000 in Western Kenya. Data for this paper was collected from seven L1 Nyala East speakers, ranging in age from 24-44. Data was collected in Kenya, as well as over WhatsApp’s video-chat feature.

² By using the term “epistemic marking,” I mean to remain neutral as to whether I think these are evidentials, or some other category. The label “evidential” carries a number of loaded theoretical issues, which I wish to avoid here. I also want to draw a connection to recent typological work on markers of “engagement,” which have been observed to have a similar broad perspectival function (Evans et al., 2018; Schultze-Berndt, 2017; Bergqvist, 2015). I note that there is a recent and growing body of work looking at evidentiality in the nominal domain, particularly in reference to determiner/demonstrative systems (Faller, 2004; Gutiérrez, 2015; Jacques, 2018). However, I stress that the distinctions observed below do not correlate with the nominal-evidential distinctions discussed in the literature.

³ 1/2/3 : 1st/2nd person; AC : anticausative; AGR : agreement; ASP : aspect; ASSO : associative; AUG : augment; CAUS : causative; COMP : complementizer; COP : copula; EM : epistemic marking; FV : final vowel; NEG : negation; NEUT : neuter; NC : noun class; OM : object marking; POSS : possessive; PST : past tense; REC : reciprocal; REL : relative clause marker SG/PL : singular/plural; SM : subject marking; TNS : tense

c. VERBAL-EM : EM-Verb ... CP

Across the three uses, EM indicates an information perspective used for evaluating the relevant category. Descriptively, its function is to “perspectivize” the associated category. EM thus provides *prima facie* evidence that perspective may be associated with multiple loci in the syntax. I ultimately conclude that the three appearances of EM in (2) provide evidence for two loci of perspectivization: the nominal domain and the clausal domain. This study thus highlights the well-studied similarities between nouns and clauses, providing evidence for an additional parallelism related to perspective. In the analysis below, I postulate that nominal-EM and clausal-EM reflect a parallel structural source: a functional category (D or C) agrees with a perspectival operator in the associated left periphery. The analysis of verbal-EM provides further evidence for a perspectival operator in the clausal domain. I argue that verbal-EM is derived from a functional category (T) agreeing with a perspectival operator in the associated embedded clause.

Though I address all three instances of epistemic marking in (2), this focus of this paper is nominal-EM, since this is, to my knowledge, an unreported phenomenon. Moreover, the discussion and analysis of verbal- and clausal-EM largely adopts established work. In this sense, the second half of the paper can be seen in part of as a replication in another language of previous findings. After first introducing important aspects of Nyala East’s morpho-syntax in subsection 1.1, I turn in section 2 to the morphological, syntactic, and semantic properties of nominal-EM. In subsection 2.2, I first consider and reject an analysis that derives nominal epistemic marking through NP ellipsis. Starting in subsection 2.3, I provide an analysis of nominal-EM in two stages. First, I account for the morpho-syntactic properties of nominal epistemic marking. I argue that nominal-EM is best explained by analogy to Diercks’s (2013) *agreeing complementizer* in the related Lubukusu. As applied to nominal-EM, the head D agrees with a perspectival operator in the local left periphery. The analysis straightforwardly derives the various morphological and syntactic properties for Nyala East’s typologically rare nominal-EM strategy. In subsection 2.4, I motivate a semantics for nominal-EM building on related work on Bantu determiner systems in Gambarage (2019); Gambarage and Matthewson (2019). The semantic account captures the full distribution of nominal-EM, and why it is restricted to only a subset of nouns.

In the second half of the paper starting in section 3, I relate the findings to the two additional instances of epistemic marking in Nyala East: clausal-EM (subsection 3.3) and verbal-EM (subsection 3.1). The analyses of these constructions follow the previous work in Diercks (2013) and Gluckman and Bowler (2016b); Gluckman (2021) (as well as related work in Halpert 2016). I ultimately conclude that both verbal- and clausal-EM derive from a functional head (T or C) agreeing with a perspectival element in the *clausal* left periphery. I therefore posit that, though there are three instances of epistemic marking in Nyala East, there are not three loci of perspectivization. There are only two: one in the nominal domain, and one in the clausal. I conclude with a comparison of DPs and CPs in Nyala East in section 4, commenting on the differences between the two domains observed in the data.

1.1 Nyala East background

Like all Eastern Bantu languages, Nyala East has an extensive noun class system. The noun classes are morphologically distinguished by, among other things, the nominal prefixes, verbal agreement, and adjectival concord. (Table 1 omits the object markers, which are also sometimes morphologically distinct.) In Bantuist convention, the noun classes in Table 1 are numbered. Up until class 10, odd numbers are singulars, and the subsequent even number is the plural.

Class	Noun marker	Subj agreement	Adj concord	Example
1	(o)mu-	a-/ka- ⁴	mu-	omusomi, 'student'
2	(a)va- ⁵	va-	va-	avasomi, 'students'
3	(o)mu-	ku-	mu-	omusaala, 'tree'
4	(e)mi-	ki-	mi-	emisaala, 'trees'
5	e-	li-	e-	ekhene, 'monkey'
6	(a)ma-	ka-	ma-	amakhene, 'monkeys'
7	(e)si-	si-	si-	esitau, 'book'
8	(e)vi-	vi-	vi-	evitau, 'books'
9	e-	e-	e-	emoosi, 'cow'
10	e-	chi-	e-	emoosi, 'cows'
11	(o)lu-	lu-	lu-	olusia, 'string'
12	(a)kha-	kha-	kha-	akhalang'o, 'small door'
13	(o)chu-	chu-	chu-	ochulang'o, 'small doors'
14	ou-	ou-	ou-	oulayi, 'lie'
21	(o)ku-	ku-	ku-	okupusi, 'big cat'

Table 1 Noun classes in Nyala East

All CV noun-class prefixes are bipartite, consisting of a core noun class prefix, and an *augment* (or *pre-prefix*), indicated in parentheses in Table 1. The distribution and contribution of the augment is variable across Bantu, with a great deal of language (and possibly speaker) variation (Halpert, 2017). I investigate Nyala East's augment in subsection 2.4.

Other than those two prefixes, (underived) nouns in Nyala East do not bear any other morphological markers (e.g., case). The noun classes are broadly semantically defined, e.g., humans are in 1/2, trees are in 3/4. As it will be relevant later, I note that class 8 consists entirely of plural count nouns (plurals of class 7), class 5/6 are singular/plural pairs, though class 6 also includes some mass nouns without singulars (e.g., *amaachi*, 'water'), and class 9 typically has (non-human) animals. However, while class membership is largely predictable, it is not entirely so, as can

⁴ The class 1 agreement *ka-* is found only in particular tense/aspect combinations.

⁵ Orthographic <v> is often phonetically realized as a bilabial fricative [β]. <kh> is a voiceless velar fricative [x]; <ch> is the voiceless alveolar affricate [tʃ]; <j> is the voiced version [dʒ]. <ng'> represents the velar nasal [ŋ].

be seen by the word for ‘monkey/monkeys’ in Table 1. It is worth noting that Nyala East’s noun class system is typical of Eastern Bantu languages.

Syntactically, Nyala East is strictly S-V-O with *wh-in situ*, and is heavily *pro*-drop. Verbs in Nyala East have fairly complex agglutinative morphology. Verbal suffixes, called “extensions” in the Bantuist tradition, consist of a wide variety of derivational and inflectional information, including aspectual distinctions, causatives, applicatives, passives, among others. Again, in terms of verbal syntax and morphology, these properties of Nyala East are typical of Eastern Bantu languages. For detailed discussion of Bantu morphology and syntax, see Nurse and Philippson (2003), and references therein.

2 Epistemic marking on noun phrases

Beyond the set of noun class markers and associated augments, Nyala East also permits an additional pre-nominal marker. I refer to this morphology as *nominal epistemic marking*, or *nominal-EM*. An example of a “plain” noun and the same noun inflected with nominal-EM is shown in (3). When nominal-EM is present, the innermost augment, that associated with the inherent noun class, must be present as well. The outermost augment patterns precisely like any other augment, being at times obligatorily present, and at times (apparently) optional. Again, I return to the function of the augment in subsection 2.4.

- | | | | |
|--------|--|----|---|
| (3) a. | <i>(a-)ma-khuwa</i>
6AUG-6NC-word

‘news / words’ | b. | <i>(e-)vi-*(a)-ma-khuwa</i>
8AUG-8EM-6AUG-6NC-word

‘news (that everyone knows about)’ |
|--------|--|----|---|

The nominal-EM shown in (3b) is one of four nominal-EM prefixes which are morphologically identical to subject agreement for classes 5, 6, 8, 9. A full paradigm is demonstrated in (4) and (5) with the class 5 noun *ekhuwa*, ‘word/news’ and its class 6 plural counterpart *amakhuwa*, respectively. (Because *ekhuwa* is in class 5, a vowel-initial noun class, it has a null augment.⁶) Each noun consists of its inherent noun class preceded by an obligatory augment. Outside of these are the epistemic markers, each of which also be preceded by an optional augment. The precise semantic contribution of the epistemic marked is discussed below.⁷

⁶ Two anonymous reviewers note that it is possible that the class five noun class has been “eroded,” leaving only the augment (cf, Gambarage 2019, 19). I agree that this is a likely diachronic story. Synchronically, however, it is clear that *e*—and in fact all V-initial noun classes—have been reanalyzed as noun class prefixes proper, as their distribution reveals: *e-* is not optional in places where augments are.

⁷ I refer the reader to the table in Table 1 to observe that EM in Nyala East do not necessarily have any “internal” consistency. For instance, while 5/6 form a singular/plural pair elsewhere in the language, 8/9 is not a pair. Class 8 is the plural of Class 7 *si-*, and Class 9 is the singular of Class 10 *e-* (which have collapsed in their noun class morphology in Nyala East, though they can still be distinguished through subject and object marking). It is no doubt of historical interest why these particular noun classes were chosen as EM in Nyala East, but I will not address this question here.

- (4) a. *(e-)vi-*(∅-)e-khuwa*
8AUG-8EM-5AUG-5NC-word
 ‘word/news (that everyone knows about)’
- b. *(a-)ka-*(∅-)e-khuwa*
6AUG-6EM-5AUG-5NC-word
 ‘word/news (that a few people know about)’
- c. *(e-)li-*(∅-)e-khuwa*
5AUG-5EM-5AUG-5NC-word
 ‘word/news (that a specific person knows about)’
- d. ? *e-*(∅-)e-khuwa*
9EM-5AUG-5NC-word
 ‘word/news (that someone knows about)’
- (5) a. *(e-)vi-*(a-)ma-khuwa*
8AUG-8EM-6AUG-6NC-word
 ‘words/news (that everyone knows about)’
- b. *(a-)ka-*(a-)ma-khuwa*
6AUG-6EM-6AUG-6NC-word
 ‘words/news (that a few people know about)’
- c. *(e-)li-*(a-)ma-khuwa*
5AUG-5EM-6AUG-6NC-word
 ‘words/news (that a specific person knows about)’
- d. * *e-*(a-)ma-khuwa*
9EM-6AUG-6NC-word
 ‘words/news (that someone knows about)’

Nominal-EM is not permitted on every noun. A non-exhaustive list of nouns that can appear with nominal-EM is given in Table 2. I note that many nouns lack or are degraded with class 9 nominal EM, an issue I return to shortly.

	Class	Gloss	<i>(e)vi-</i>	<i>(a)ka-</i>	<i>(e)li-</i>	<i>e-</i>
<i>ousiva</i>	14	sadness	<i>eviousiva</i>	<i>akousiva</i>	<i>eliouiva</i>	<i>yousiva</i>
<i>ouvi</i>	14	badness	<i>eviouvi</i>	<i>akouvi</i>	<i>eliouvi</i>	<i>youvi</i>
<i>ousang'afu</i>	14	happiness	<i>eviousang'afu</i>	<i>akousang'afu</i>	<i>eliouang'afu</i>	–
<i>oulembo</i>	14	beauty	<i>evioulembo</i>	<i>akoulembo</i>	<i>elioulembo</i>	–
<i>outinyu</i>	14	difficulty	<i>evioutinyu</i>	<i>akoutinyu</i>	<i>elioutinyu</i>	<i>youtinyu</i>
<i>ouvehi</i>	14	lie	<i>eviouvehi</i>	<i>akouvehi</i>	<i>eliouvehi</i>	<i>youvehi</i>
<i>oung'ali</i>	14	truth	<i>evioung'ali</i>	<i>akoung'ali</i>	<i>elioung'ali</i>	<i>young'ali</i>
<i>embaha</i>	9/10	story/stories	<i>eviembaha</i>	<i>akeembaha</i>	<i>eliembaha</i>	<i>yembaha</i>
<i>amakhuwa</i>	6	news/words	<i>eviamakhuwa</i>	<i>akamakhuwa</i>	<i>eliamakhuwa</i>	–
<i>omupango</i>	3	plan	<i>eviomupango</i>	<i>akomupango</i>	<i>eliomupango</i>	–
<i>emipango</i>	4	plans	<i>eviemupango</i>	<i>akemipango</i>	<i>eliemupango</i>	–
<i>amakoso</i>	6	mistake	<i>eviamakoso</i>	<i>akamakoso</i>	<i>eliamakoso</i>	<i>yamakoso</i>
<i>amalocho</i>	6	dream	<i>eviamalocho</i>	<i>akamalocho</i>	<i>eliamalocho</i>	–

Table 2 Epistemic marking on nouns

The data in Table 2 is divided between *subjective* nouns like *ourembo*, ‘beauty’ and *propositional* (or *content*) nouns like *ouvehi*, ‘lie.’ The two classes are syntactically distinguished by the fact that only propositional nouns may select for a CP

complement. Just like in English, subjective nouns like *ourembo* ‘beauty’ cannot take a CP complement, shown in (6).

- (6) *ou-vehi* / **ou-rembo* *mbo Masika ka-chi-e Nairobi*
 14NC-lie 14NC-beauty that 1Masika 1SM-go-FV Nairobi
 ‘the lie / *beauty that Masika went to Nairobi.’

Nominal-EM can occur on any subjective or propositional noun, and it may not occur on any other noun. This is a natural class: it is the set of nouns which are *judge dependent*.⁸ The idea that subjective predicates have a judge argument is fairly standard now (e.g., Stephenson 2007, among many others). It is less standard to assume that propositional nouns are judge-dependent (though see Djärv 2019 for arguments to this effect for the noun *fact* in English).

In any case, there is empirical evidence for judge-dependence of these nouns: as (7) shows, the judge argument can be overt in Njala East (and English) with many nouns.⁹

- (7) a. *a-ma-khuwa ka-a Masika*
 6AUG-6NC-word 6AGR-ASSO Masika
 ‘news (according) to Masika’
- b. *ou-rembo khu Masika*
 14NC-beauty to Masika
 ‘beauty (according) to Masika’
- c. ?? *o-mu-saala khu Masika*
 3AUG-3NC-tree to Masika
 ‘??a/the tree (according) to Masika’
- d. *o-mu-saala ku-a Masika*
 3AUG-3NC-tree 3AGR-ASSO Masika
 ‘Masika’s tree’ (*cannot mean*: ‘a tree (according) to Masika’)

Nominal-EM makes a semantic contribution. Generalizing across the nouns in Table 2, nominal-EM always reflects an information perspective. The perspective may either be a set of individuals who hold a belief or a body of evidence.

⁸ I note in passing that *picture*-NPs, e.g., *epicha*, ‘picture’ are not included among the nouns listed in Table 2. They may never bear nominal-EM under any circumstances. This is perhaps surprising given the body of work dedicated to the perspectival properties of *picture*-NPs in Western languages. The findings suggest that the perspectival category that is found in *picture*-NPs is distinct from that discussed here.

⁹ There is speaker as well as lexical variation with how the judge is introduced. For some speakers/nouns, the judge is introduced in the associative construction, while for others, it is introduced in a prepositional phrase headed by *khu*. This is (tentatively) similar to variation in English in whether *to* or *for* introduces judges with predicates of personal taste. I also note that subjective/propositional nouns with dependent DPs are multiply ambiguous. With propositional noun, they are at least three ways ambiguous. *Amakhuwa* ‘news’ can have a “source” reading (who the news is from), a “judge” reading (who it is news to), and an “object” reading (who/what it is news about). All three readings are variably expressed using *khu* or the associative, apparently depending on the speaker and the lexical semantics of the noun. Subjective nouns are likewise multiply ambiguous.

- (8) a. *(e-)vi-* (Class 8): ‘according to everyone or based on a lot of things’
 b. *(a-)ka-* (Class 6) : ‘according to a few people or based on a few things’
 c. *(e-)li* (Class 5): ‘according to someone specific or based on a specific thing’
 d. *e-* (Class 9): ‘according to someone non-specific or based on something non-specific’

For any particular noun, the meaning that arises is almost entirely context dependent—though most nouns have a preferred reading. With a noun like *ekhuwa*, ‘news,’ the choice in nominal-EM preferably reflects the size of the group who is aware of the news. Class 8 *(e)vi-* indicates something like universal quantification: news that everyone (contextually relevant) knows about. Class 5 *(e)li-* indicates something like existential quantification: news that only a single, specific person knows about. Class 6 *(a)ka-* is in the middle, indicating news that a few contextually relevant people know about. Class 9 contributes the weakest meaning. It signifies news that someone, somewhere, knows. Functionally, it is equivalent to existential quantification: there is a person who knows about the news.

Most nouns are degraded when inflected with the class 9 EM. This is likely due to semantic/pragmatic factors. In particular, nouns with class 9 EM are in “competition” with a non-EM-marked noun. That is, the difference between *e-ekhuwa* ‘news (that someone knows about)’ and *ekhuwa*, ‘news’ is so subtle (if it exists at all) that speakers simply choose the least complex form. Still, the existence of some attested forms should lead us to conclude that class 9 is possible with nouns, though other factors may influence its full distribution. In the end, whether class 9 should be excluded from the data and analysis developed here is an orthogonal issue, given that classes 5, 6, and 8 are fully productive nominal-EM.

The specific contribution of nominal-EM is further context dependent in two ways. First, the precise relationship between the salient group of people/evidence and the noun is variable. *Eviembaha*, derived from *embaha* ‘story’ may variously mean, ‘a story that everyone knows,’ or ‘a story that everyone told,’ or ‘a story that everyone made up,’ or ‘a story that everyone heard,’ or, ‘a story based on a lot of information,’ etc. The specific meaning depends entirely on the context of use, though this too is constrained by lexical semantics of the noun. *Eviourembo*, derived from *ourembo* ‘beauty,’ can only really mean ‘something that everyone thinks is beautiful,’ not, say, ‘a beautiful thing that everyone constructed,’ or similar.

The second way in which nominal-EM is context dependent has to do with the salient contextual group. In many (perhaps most) cases, “salience” equates to discourse participation. *Akeembaha*, again derived from *embaha* ‘story,’ can mean ‘the story that you and I know—and no one else.’ *Eliembaha* can mean ‘the story that only I know’ or ‘the story that only you know,’ and *eviembaha* is ‘the story that everyone knows, including you and I.’ These “clusivity” distinctions are not hard-wired into the meaning of nominal-EM. Class 6 nominal-EM *(a)ka-* is not required to mean “discourse participants;” Class 5 *(e)li-* is not required to mean “speaker/hearer.” Rather, such meanings arise purely pragmatically, given that the discourse participants are often the most salient contextually identifiable group.

Morpho-syntactically, nouns with epistemic marking act like they are in the noun class of the epistemic marker. This is reflected in all agreement/concordial dependencies (10), as well as object markers (12), which in Nyala East are in complementary distribution with an overt object. For space I do not show in (10) and (12) that no other agreement or object marking would work on the main verbs here.

(9) Agreement/concord (without EM)

e-mbaha mbo Ingwe ya-khilil-e y-ali e-layi
 9NC-story that 9Ingwe 9SM-win-FV 9SM-COP 9SM-good
 ‘The story that Ingwe won was good.’

(10) Agreement/concord (with EM)

- a. *e-li-e-mbaha mbo Ingwe ya-khilil-e li-ali e-layi*
 5AUG-5EM-9NC-story that 9Ingwe 9SM-win-FV 5SM-COP 5SM-good
 ‘The story that Ingwe won was good.’
- b. *e-vi-e-mbaha mbo Ingwe ya-khilil-e vi-ali vi-layi*
 8AUG-8EM-9NC-story that 9Ingwe 8SM-win-FV 8SM-COP 8SM-good
 ‘The story that Ingwe won was good.’
- c. *a-ka-e-mbaha mbo Ingwe ya-khilil-e ka-ali ma-layi*
 6AUG-6EM-9NC-story that 9Ingwe 9SM-win-FV 6SM-COP 6SM-good
 ‘The story that Ingwe won was good.’

(11) Object marking (without EM)

Nekesa ka-ul-iy-e e-mbosi mana Wekesa y-esi
 1Nekesa 1SM-hear-ASP-FV 9NC-rumor and 1Wekesa 1SM-also
ka-yi-ul-iy-e
 1SM-9OM-hear-ASP-FV
 ‘Nekesa heard the rumor and Wekesa heard it too.’

(12) Object marking (with EM)

- a. *Nekesa ka-ul-iy-e a-ka-e-mbosi mana Wekesa*
 1Nekesa 1SM-hear-ASP-FV 6AUG-6EM-9NC-story and Wekesa
y-esi ka-ka-ul-iy-e
 1SM-also 1SM-6OM-hear-ASP-FV
 ‘Nekesa heard the rumor and Wekesa heard it too.’
- b. *Nekesa ka-ul-iy-e e-vi-e-mbosi mana Wekesa*
 1Nekesa 1SM-hear-ASP-FV 8AUG-8EM-9NC-story and Wekesa
y-esi ka-vi-ul-iy-e
 1SM-also 1SM-8OM-hear-ASP-FV
 ‘Nekesa heard Masika’s rumor and Wekesa heard it too.’
- c. *Nekesa ka-ul-iy-e e-li-e-mbosi mana Wekesa*
 1Nekesa 1SM-hear-ASP-FV 5AUG-5EM-9NC-story and Wekesa
y-esi ka-li-ul-iy-e
 1SM-also 1SM-5OM-hear-ASP-FV

'Nekesa heard the rumor and Wekesa heard it too.'

Thus, nominal-EM appears to change the visible morpho-syntactic features of the noun. However, it does not change the *referential* properties of the noun. Reference always tracks the "inner" noun class prefix. For instance, though class 6 and class 8 elsewhere are generally used to indicate a plural (count) individual,¹⁰ class 6 and 8 nominal-EM can combine with singular quantifiers (13), and can be predicated of a singular noun (14), and *vice versa*, (15).

- (13) a. * *e-vi-tau* *vi-lala*
 8AUG-8NC-book 8AGR-one
 [Intended: '*one books']
- b. * *a-ma-khene* *ma-lala*
 6AUG-8NC-monkey 6AGR-one
 [Intended: '*one monkeys']
- c. *e-vi-o-mu-pango* *vi-lala*
 8AUG-8EM-3AUG-3NC-plan 8AGR-one
 'one plan (that we all agree on)'
- d. *a-ka-o-mu-pango* *ma-lala*
 6AUG-6EM-3AUG-3NC-plan 6AGR-one
 'one plan (that a few people agree on)'
- (14) a. *e-vi-ou-rembo* *vi-li* *e-ua*
 8AUG-8EM-14NC-beauty 8SM-COP 5NC-flower
 'Something that everyone finds beautiful is a flower.'
 Lit: 'Beauty (for everyone) is a flower.'
- b. *a-ka-ou-lembo* *ka-li* *e-ua*
 6AUG-6EM-14NC-beauty 6SM-COP 5NC-flower
 'Something that a few people find beautiful is a flower.'
 Lit: 'Beauty (for a few people) is a flower.'
- (15) a. *e-fwa* *li-ili* *vi-ou-chi*
 5NC-death 5SM-COP 8EM-14NC-fear
 'Death was a common fear.'
 Lit: 'Death was a fear (for everyone).'
- b. *e-fwa* *li-ili* *ka-ou-chi*
 5NC-death 5SM-COP 6EM-14NC-fear
 'Death was a common fear.'
 Lit: 'Death was a fear (for a few people).'

This is surely related to the fact that nominal-EM, though appearing on nouns, is not, technically, nominal morphology. It is agreement morphology (or perhaps concord morphology—we return to this point momentarily). This is evident from

¹⁰ Class 8 is quite strict in this regard: it always indicates a plural count noun. However, there are mass nouns among class 6 (e.g., *amaachi*, 'water.')

the fact that the noun class prefixes for classes 5 and 6, *e-* and *(a)ma-* respectively, have different morphology than the corresponding epistemic marking of class 5 and 6, *(e)li-* and *(a)ka-*. (Classes 8 and 9 agreement and noun class have the same morphological form.)

This concludes the empirical description of nominal-EM in Nyala East. After introducing some theoretical assumptions, I start in subsection 2.2 by outlining and rejecting what I believe is *prima facie* the most plausible analysis of the data above: nominal-EM is a variant of the well-documented Bantu associative construction.¹¹ I show that this cannot be correct—at least as a synchronic explanation.¹² In subsection 2.3 I provide a syntactic proposal: nominal-EM is agreement with a perspectival operator in the nominal domain. In subsection 2.4 I back up this proposal with a compositional semantics of Bantu noun phrases.

2.1 Theoretical assumptions

I make the following basic structural assumptions about nouns and nominal morphology in Nyala East. Roots must combine with a categorizing head, *n*. *nP* is dominated by a ϕ P, which hosts the inherent class features, and ϕ P is in turn dominated by a D layer (Carstens 2008; Ndayiragije et al. 2012 among many others).

- (16) a. *a-ma-khuwa*
 8AUG-8NC-word
 ‘words/news’
- b.
-
- ```

graph TD
 DP --> D[a-]
 DP --> phiP
 phiP --> phi[ma-]
 phiP --> nP
 nP --> n
 nP --> ROOT[ROOT]
 ROOT --- khuwa[-khuwa]

```

Following a long tradition, I assume that the augment in Nyala East is a realization of D (Visser, 2008; de Dreu, 2008; Taraldsen, 2009; Carstens and Mletshe, 2015; Gambarage, 2019), and that vowel-initial noun classes have a null augment. DP-less  $\phi$ Ps are possible, and found when nouns appear in a predicative position, in which case they obligatory appear without an augment; all nouns in a non-predicative function are headed by D.

Given these standard assumptions, nominal-EM presents a range of issues. Beyond simply locating nominal-EM within this template, we are forced to posit two D projections in nouns marked with nominal-EM because there are two augments.

<sup>11</sup> Thanks to Michael Marlo for pointing out this potential analysis.

<sup>12</sup> I am unable to provide a discussion of the diachronic source of this issue. It is similarly beyond the scope of this paper to speculate as to why classes 5, 6, 8, 9 were recruited for this function in Nyala East.

One D is realized as the obligatory “inner” augment. The other D head is the outer augment, which behaves like other augments in being sometimes omitted. The facts are repeated in (17).

- (17) *(e-)vi-\*(a-)ma-khuwa*  
 8AUG-8EM-6AUG-6NC-word  
 ‘news (that everyone knows about)’

In the following sections, I offer two possibilities about how such a configuration might arise. The first, which I consider and reject, derives the appearance of nominal-EM and the two augments by positing two nouns. The second possibility, which I adopt, capitalizes on the meaning of D in Nyala East to explain why some nouns can appear with two of them. This semantic account also straightforwardly explains the function and appearance of nominal-EM

## 2.2 Nominal-EM is not a reduced associative

In this section, I address and reject a plausible initial analysis of EM on nouns. Words like *eviouvehi* ‘lie (according to everyone),’ derived from *ouvehi* ‘lie’ with class 8 nominal-EM, are in fact ambiguous. I have outlined in detail the epistemic reading above, which is by the far the preferred reading when such nouns are given in isolation. However nouns with identical morphological prefixes can also have a reading that treats the prenominal morphology as *associative* (or *linker*) morphology, which is otherwise used in a variety of complex nominal constructions. In colloquial speech, it is common to phonologically reduce the associative marker *-a* to null, resulting in prefixing the agreement markers that would appear on the associative directly onto the noun. The result is phonetically identical to nominal-EM with noun classes 5, 6, 8, and 9.

- (18) a. *e-vi-tau vi-a e-mbaha* → *e-vi-tau*  
 8AUG-8NC-book 8AGR-ASSO 9NC-story 8AUG-8NC-book  
*vi-e-mbaha*  
 8AGR-9NC-story  
 ‘books of the story’ (i.e., ‘the books that were mentioned in the story’)
- b. *a-ma-khene ka-a e-mbaha* → *a-ma-khene*  
 6AUG-6NC-monkey 6AGR-ASSO 9NC-story 6AUG-NC-monkey  
*ka-e-mbaha*  
 6AGR-9NC-story  
 ‘monkeys of the story’
- c. *e-khene li-a e-mbaha* → *e-khene li-e-mbaha*  
 5NC-monkey 5AGR-ASSO 9NC-story 5NC-monkey 5AGR-9NC-story  
 ‘monkey of the story’
- d. *e-moosi e-a e-mbaha* → *e-moosi e-e-mbaha*  
 9NC-calf 9AGR-ASSO 9NC-story 9NC-calf 9AGR-9NC-story  
 ‘calf of the story’

What I will call *reduced associatives* are a fully productive property of Nyala East (and many Eastern Bantu languages). Moreover, such reduced associatives are possible as noun phrases without the corresponding noun. This is readily available given an appropriate antecedent for the ellipsis—however, a syntactic antecedent is not required. The antecedent can be a discourse antecedent as well.

- (19) a. *e-vi-tau vi-e-mbaha vi-ili vi-layi na*  
 8AUG-8NC-book 8AGR-9NC-story 8SM-COP 8AGR-good and  
*e-vi-e-mbosi na-vi-o*  
 8AUG-8AGR-9NC-rumor and-8AGR-REL  
 ‘The books of the story were good and the ones of the rumor were, too’

I will assume that such structures are derived via NP-ellipsis as sketched in (20), though the exact analysis is not crucial to the claims here. I assume that the NP is elided but the higher D remains.

- (20) [<sub>DP</sub> e- [<sub>NP</sub> ~~evitau~~] [<sub>AssocP</sub> vi-∅ [<sub>DP</sub> e-mbosi ] ] ]

Given the availability of reduced associatives, it is tempting to try to group nominal-EM together with this general strategy of associative reduction.<sup>13</sup> Specifically, we might say that nominal-EM stems from an elided “epistemic noun” with subsequent reduction of an associative marker. This is sketched in (21).

- (21) [<sub>DP</sub> e- [<sub>NP</sub> EPISTEMICNOUN] [<sub>AssocP</sub> vi-∅ [<sub>DP</sub> e-mbosi ] ] ]

There are four problems with this idea. First, it predicts that classes 5, 6, 8, and 9 should trigger the epistemic readings on the unreduced associative marker. This is because reduced and unreduced associative markers are just phonological variants, and do not differ semantically. We thus predict *evia embosi* to have a reading meaning “a rumor according to everyone/a lot of information,” in addition to the NP-ellipsis reading. This phrase is not ambiguous however; it can only refer to the things (of class 8) that the rumor is about; it cannot refer to a rumor known by everyone, or based on all the evidence.

The difference can be empirically observed in the minimal pair in (22). *Eviowi* and *evia owi* are not interchangeable.

- (22) a. *e-vi-ou-vi vi-li e-fwa li-a Kenyatta*  
 8AUG-8EM-14NC-badness 8SM-COP 5NC-death 5AGR-ASSO Kenyatta  
 ‘Everyone thought that the death of Kenyatta was bad.’  
 Lit: ‘Badness (for everyone) was the death of Kenyatta.’

<sup>13</sup> Indeed, it is proposed in Kawasha (2007) that the agreeing complementizer discussed in subsection 3.3 is (historically) derived in precisely this way, i.e., as a reduction of the associative morphology outside of embedded clause. This is not possible as a synchronic analysis for the CPs in Nyala East because Nyala East’s CPs are not nominal. See discussion later in subsection 3.2, as well as Gluckman (2021) and Pietraszko (2019) for diagnosing nominal clauses in Bantu.

- b. \* *e-vi-a*            *ou-vi*            *vi-li*            *efwa*            *li-a*  
 8AUG-8AGR-ASSO 14NC-badness 8SM-COP 5NC-death 5AGR-ASSO  
*Kenyatta*  
 Kenyatta  
 ‘\*Things of badness were the death of Kenyatta.’

The problem with (22b) is straightforward: a plural is equated with a singular. The elided plural noun *evinju* ‘things’ cannot be equated with the singular *efwa* ‘death.’ Thus, if (22a) were just a phonological variant of (22b), we would expect the same ungrammaticality. The reduced associative strategy crucially *does* change the referential properties of the stated noun, because it always involves an elided head NP.

Second, adopting a reduced associative analysis, we also predict that modification of a noun with nominal-EM should be able to target the inner noun class. This is because, syntactically, there are two nouns in the structure, both of which are targetable for modification. However, speakers report that it is highly unnatural to modify the inner noun class in the presence of nominal-EM. (Cf data in (9)–(12).)

- (23) a. *Wekesa a-many-il-e e-vi-ou-vehi vi-a Masika*  
 1Wekesa 1SM-know-ASP-FV 8AUG-8EM-14NC-lie 8AGR-ASSO 1Masika  
 ‘Wekesa knows Masika’s lies (that everyone knows the truth about).’
- b. \* /?? *Wekesa a-many-il-e e-vi-ou-vehi w-a*  
 1Wekesa 1SM-know-ASP-FV 8AUG-8EM-14NC-lie 14AGR-ASSO  
*Masika*  
 1Masika  
 [Intended: ‘Wekesa knows Masika’s lies.’]  
 Lit: ‘Wekesa knows the things of Masika’s lies.’

The degradation of (23b) reflects the fact that the sequence *eviouvehi wa Masika* is not an illicit string. Rather, it forces a particular parse of the string, involving nominal ellipsis of a silent noun (*evinju*, ‘things’). With propositional nouns like *ouvehi*, ‘lie,’ the presence of nominal-EM is strongly oriented towards a “perspectival” reading, particularly when stated out of the blue. A reduced associative reading is sometimes possible as well, but it must be contextually supported, i.e., there must be a class 8 antecedent for the elided *evinju* ‘things’ in (23b).

A similar point can be made with adjectival modification. In the sentence in (24), the modifying adjective may take either class 8 *vi-* or class 6 *ma-* concordial agreement.

- (24) *Wekesa ka-ul-iy-e e-vi-a-ma-khuwa vi-layi /*  
 1Wekesa 1SM-hear-ASP-FV 8AUG-8EM-6AUG-6NC-word 8AGR-good  
*ma-layi*  
 6AGR-good  
 ‘Wekesa heard the good news.’

Again, the different agreements reflect a structural ambiguity. There is one reading in which *eviamakhuwa* is a shortened form of *evinju via amakhuwa*, ‘things of news.’ On this reading, class 6 agreement on the adjective *-layi* is possible, meaning ‘things of good news.’ On another reading, *eviamakhuwa* is not elliptical, rather it means, ‘news that is commonly known.’ On this reading, only class 8 agreement is possible on the adjective, meaning ‘good news that is commonly known.’

It is notable that certain nouns are more flexible in permitting this ambiguity. A noun like *ouvehi* seems highly resistant to a reduced associative construction. Indeed, even overtly expressing the head of a reduced associative is marked to the point of ungrammaticality ??*evinju viouvehi*, ‘things of lies.’ The point further underscores that reduced associatives and nominal-EM cannot be the same phenomenon.

The third issue with the reduced associative analysis of nominal-EM is that the reduced associative strategy is not restricted to particular noun classes. It is possible to talk about “the one [class 7] of the story,” or “the one [class 14] of the story.’ Indeed, all noun class agreements are possible in this reduced associative use given an appropriate context.

- (25) a. *e-si-embaha*  
7AUG-7AGR-9story  
‘the one [book] of the story’
- b. *o-chu-embaha*  
13AUG-13AGR-9story  
‘the one [small thing] of the story’

Examples like (25a) are particularly important because they cannot even mean “the story according to the book.” Since the reduced associative strategy is fully productive, it is not clear why this reading would be ruled out if the epistemic marking were derived in the same way.

Finally, we find evidence from typological variation. Consider Logoori, as reported in Gluckman and Bowler (2016b) and Gluckman (2021). Logoori has two epistemic markers, but their distribution is more restricted than in Nyala East. Epistemic marking in Logoori only appears on verbs (what I call *verbal-EM*, discussed in subsection 3.1 below); the two markers cannot appear on nouns to contribute an epistemic reading.<sup>14</sup>

- (26) Logoori has verbal-EM
- a. *ga-lol-ek-a ndii Sira a-gw-i*  
6EM-see-AC-FV that Sira 1SM-fall-FV  
‘It looks (based on a lot of evidence) like Sira fell.’
- b. *e-lol-ek-a ndii Sira a-gw-i*  
9EM-see-AC-FV that Sira 1SM-fall-FV

<sup>14</sup> In Logoori, verbal-EM also reflects a scale, where *ga-* reflects something like universal quantification and *e-* existential quantification. See discussion on the various readings associated with EM in Logoori in Gluckman and Bowler 2016b.

‘It looks (based on a little evidence) like Sira fell.’  
(adapted from Gluckman and Bowler 2016b, 1064)

- (27) Logoori does not have nominal-EM
- a. *a-ma-ng’ana*  
6AUG-6NC-word  
‘news’
  - b. \* *(a-)ga-a-ma-ng’ana*  
6AUG-6EM-6AUG-6NC-word  
[Intended: ‘news (according to everyone)’]
  - c. \* *e-a-ma-ng’ana*  
9EM-6AUG-6NC-word  
[Intended: ‘news (according to someone)’]

In colloquial speech, Logoori also has a reduced associative.

- (28) a. *ki-tabu chi-a u-vu-kumu* → *ki-tabu*  
7NC-book 7AGR-ASSO 14AUG-14NC-story 7NC-book  
*chi-u-vu-kumu*  
7AGR-14AUG-14NC-rumor  
‘the book of the rumor’

Logoori demonstrates that the presence of nominal-EM does not correlate with the availability of reduced associatives. Instead, I propose in section 4, that the availability of nominal-EM correlates with the presence of an *agreeing complementizer*—a complementizer that reflects the  $\phi$ -features of the subject of the embedding predicate. Logoori lacks such a complementizer, but Nyala East has one.

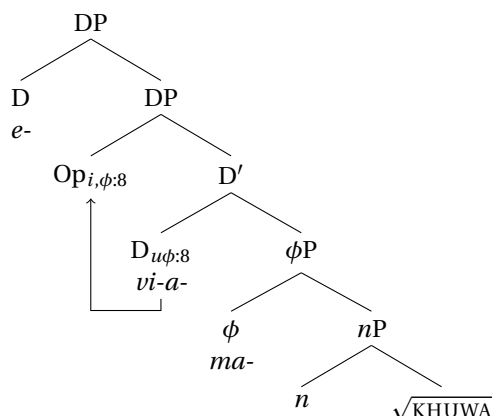
One point of clarification is necessary. I am not claiming that Logoori (or any other language) lacks a mechanism for perspectivization in the nominal domain. It is, of course, an empirical question whether such readings are available in Logoori. The claim is that Logoori lacks a *morphological reflex* of any such perspectival information. The same can be tentatively said of English as well: perspectival nouns can be evaluated relative to difference sources, but they do not morphologically reflect that difference.

### 2.3 Analysis: A perspectival operator in DP

I argue for a different approach here. In brief, nominal-EM is the result of an “agreeing determiner,” which reflects the  $\phi$ -features of a perspectival operator in the nominal domain, sandwiched between two D-heads. D in this analysis functions as a “belief-of-existence” determiner (Gambarage, 2019). The lower D is needed to shift perspective to the entity picked out by the operator; the higher D is needed to provide speaker-oriented meaning. I focus in this section on the morpho-syntactic aspects of this analysis, addressing the meaning in the next section.



(29) Nominal-EM  $\rightarrow$  D agrees with Op in spec-DP



Formally, assuming the operation Agree (Chomsky, 2000, 2001), in which a functional head with unvalued features must value its features before spell-out,  $D_{u\phi:X}$ , bearing unvalued  $\phi$  features, targets an operator in its specifier imbued with valued  $\phi$  features.  $D_{u\phi:X}$  copies Op's features and realizes them as a prefix. Nominal-EM is therefore simply the realization of agreement with a functional project, parallel to, say, T realizing the  $\phi$ -features of a subject. The tree leaves unspecified how  $a-$ , the realization of D itself, gets its surface form. There are two ways to understand the realization of the head D proper. We may posit that D comes with an additional  $\phi$ -probe which is valued based on an Agree relation with the lower  $\phi(P)$ .<sup>15</sup> Alternatively, a reviewer suggests a simpler solution: the augment in Nyala East is underlyingly an underspecified [-high] vowel which undergoes backness vowel harmony with the preceding vowel. (An additional stipulation would need to be made for classes 5, 9, 10, and 14, which lack overt augments.) In either case, the mechanism that realizes nominal-EM is the same: nominal-EM is the exponence of D successfully agreeing with a perspectival operator. Note that it is necessary on either approach to assume that the probe (or probes) are relativized to target particular features. As I detail in the next section, we would say that the probe  $u\phi$  in (29) is relativized to target (features on) logophoric operators. It may expand its search domain to include a specifier when no logophoric operator is found in its c-command domain (Béjar and Rezac, 2009).<sup>16</sup>

<sup>15</sup> As noted by a reviewer, we would additionally have to stipulate an allomorphic alternation. Agreement with a perspectival operator is realized by a particular set of prefixes, which are distinct from the exponence of D itself. The different exponences of D must be treated as cases of contextual allomorphy depending on the source of the  $\phi$ -features copied onto D, which I formalize as a subscript on the copied set of  $\phi$ -features. A nested structure like  $[F_{Op} [F_{\phi} D]]$  could reasonably account for this, where  $F_{Op}$  and  $F_{\phi}$  stand for the feature sets from Op and  $\phi(P)$  respectively.

<sup>16</sup> I remain agnostic as to the precise nature of the perspectival operator. It may be understood as a kind of context-shifter (a “monster” in the terms of Schlenker 2003), or it may be understood as shorthand for a more complex syntax where operators are abstractions over individuals which must be further saturated. There may then be a pronominal argument which instantiates the perspectival center and binds this argument introduced by the operator (as in e.g. Sundaresan 2018).

I assume that the difference between the two D's in (29) is purely syntactic: the lower D selects for a perspectival operator and bears a  $\phi$ -probe that targets this operator. Op is merged in spec-DP to satisfy the selectional requirements of D (though see later discussion about alternative structural assumptions). The higher D lacks this selectional distinction as well as the additional  $\phi$ -probe. As I make clear in the next section, the two D's are *semantically* equivalent: both relativize the perspective to an individual or set of individuals.

The proposal is intentionally modeled after Diercks's (2013) analysis of the *agreeing complementizer* in the closely related Lubukusu. I discuss this analysis and Nyala East's complementizers in subsection 3.3.

The four nominal-EM in Nyala East stems from the fact that Nyala East has four perspectival operators, each indexed to contextually salient groups of individuals/evidence (represented with  $i, j, k, l$ ), associated with distinct class features (represented with  $\phi:X$ ).<sup>17</sup>

(30) Where X ranges over the contextually salient people or evidence:

- a. Op <sub>$i,\phi:8$</sub>  : all of X
- b. Op <sub>$j,\phi:6$</sub>  : some of X
- c. Op <sub>$k,\phi:5$</sub>  : a specific member of X
- d. Op <sub>$l,\phi:9$</sub>  : a non-specific member of X.

I assume that, as a consequence of agreeing with the perspectival operator, Op's  $\phi$ -features project in DP, "overriding" the features of  $\phi P$ .<sup>18</sup> Therefore, nouns with EM are morpho-syntactically in the noun class of the nominal-EM. This is what was shown in (9)–(12) above: agreement and concordial dependencies all resolve in favor of the nominal-EM, not the inherent noun class. I assume that adjectival concord, etc, is derived via Agree targeting the highest visible features in the DP (Steriopolu and Wiltschko 2010; Kramer 2015; though cf Norris 2014 for an alternative, compatible model).

Crucially, however, the addition of Op does not change the reference of the noun. Op's function is to fix the perspectival source of the noun (in a way to be made more precise below), but it does not affect how the extended DP projection refers. Thus, EM does not have an effect on the asserted meaning of the noun and its associated  $\phi$ -features. Again, this is what was shown earlier in (13)–(15).<sup>19</sup>

(i) [ $pro_{i,\phi:A}$  [Op [D <sub>$u\phi:X$</sub>  [...]]]]

<sup>17</sup> I note in passing that this claim is distinct from that of Déchaine et al. (2014), who argue that  $n$  heads in Shona can have an "expressive" or "evaluative" function. Their concern is primarily with speaker-oriented augmentative, diminutive, and derogatory functions of noun classes.

<sup>18</sup> This differentiates Op from, say, possessors in DP (in Indo-European languages), whose features do not project. Here, the crucial factor is the "extra" Agree relationship in Nyala East, which copies Op's features to D, allowing them to project. As I discuss later, non-agreeing augments are also perspectival in that they are speaker-oriented. But we do not see that all such DPs trigger first-singular agreement, a consequence of the lack of an Agree relation in that case. I also note that we find a similar behavior with CP: a perspectival operator can "give" the CP its features. See related discussion in section 4 and footnote 52.

<sup>19</sup> This is, thus, different from cases in which nouns can be transposed into other classes by, e.g., adding class 1 prefixes to derive a proper name. In such case, I assume that an additional  $\phi P$  is needed.

The analysis treats the apparent “quantificational” effects as a direct result of how Op is indexed. Importantly, nominal-EM is not associated with (or derived from) quantifiers in the syntax, and so does not interact with other elements sensitive to quantification and scope. For instance, nominal-EM cannot bind variables in an associated clause.

- (31) *e-vi-a-ma-koso*                      *wandaye o-we*              *o-khu-cha*  
 8AUG-8EM-6AUG-6NC-mistake 1sister    1AGR-POSS 15AUG-15NC-go  
*Nairobi*  
 Nairobi’  
 ‘the mistake (according to everyone) for their sister to go Nairobi’  
 [Must be one sister; cannot be everyone’s sister going to Nairobi]

Furthermore, nominal-EM does not interact with other quantifiers. For instance, class 5, indicating a specific individual, cannot co-vary with a higher quantified expression.

- (32) *oli monju ka-ul-il-a*              *e-li-ou-vehi*  
 every person 1SM-hear-ASP-FV 5AUG-5EM-14NC-lie  
 ‘Everybody heard the lie (that I know the truth about).’  
 [Cannot mean: ‘Everyone<sub>i</sub> heard the lie (that they<sub>i</sub> know the truth about).’]

This follows from the analysis because Op’s reference is established through discourse; there is no quantifier represented in the syntax/LF that could interact with other elements sensitive to quantifiers.

In sum, positing a perspectival operator in the nominal domain straightforwardly captures the morphological and syntactic properties of nouns marked with EM without any of the issues discussed in the previous section. I turn in the next section to the semantic function of the augment/D in Nyala East in order to motivate the projection of two DPs in Nyala East. I also wish to provide a more detailed discussion of the function of the perspectival operator. In particular, in what way does it “perspectivize” an NP, and why is it restricted to the natural class of judge-dependent nouns? The answer to these questions is that, in addition to providing an anchor for “a belief of existence” choice function provided by the agreeing determiner, the perspectival operator also acts as the perspectival center for the judge of the associated NP.

## 2.4 The function of the augment in Nyala East

The function of the augment across Bantu languages has variously been described as contributing definiteness distinctions, specificity distinctions, novelty/familiarity distinctions, deixis, case, and NPI-related meaning. See Halpert (2017) for a recent overview of facts and approaches; I will not attempt to address all the possible analyses here.

Recently Gambarage (2019) and Gambarage and Matthewson (2019),<sup>20</sup> have proposed that in a number of Bantu languages, the augment's purpose is to introduce a *belief of existence* according to the speaker. As discussed by G&M, the presence of the augment in Nata, shown in (33), correlates with whether the speaker believes in the existence of 'a man.'

(33) Nata

a. *n-á-á-rotʃ-e*    *o=mo-súβe*  
FOC-PST-see-FV AUG=INC-man  
'S/he saw a/the man.'

b. *ta-a-rotʃ-e*    *mo-súβe*  
NEG-PAST-see-FV INC-man

'S/he didn't see a/any man.'

(Gambarage, 2019, 2-3)

When the augment *o=* in (33a) is present, the speaker is asserting belief in the existence of a (definite or indefinite) man. When the augment is absent, the speaker signals that they do not believe that an individual which bears the property described by the NP exists; there is no man. In (33b), what G&M call *covert D* (a silent augment) has a requirement that it must appear in the scope of a non-factual operator, thus restricting its distribution. G&M support this analysis by showing systematically that augmentless nouns are allowed under negation, in conditionals, in questions, and in modal assertions. And moreover, that augmented nouns only appear—and in fact are required—in contexts in which the speaker is committed to a belief in the existence of the associated noun.

This idea is consistent with the distribution of the augment in Nyala East. Argumental nouns in positive declaratives of extensional verbs must appear with an augment (34). Augmentless nouns are only possible in the context of a non-factual operator: under negation, modals, questions, etc. (I put aside in this discussion vowel-initial noun classes, which I assume to have a phonologically null augment in all cases.)

(34) Augmented nouns required in positive declaratives

a. *Wekesa ka-kul-a*    *\*(e-)si-tau*  
1Wekesa 1SM-buy-FV 7AUG-7NC-book  
'Wekesa bought a/the book.'

b. *\*(e-)si-tau*    *si-kwiy-e*  
7AUG-7NC-book 7SM-fall-FV  
'A/the book fell.'

(35) Augmentless nouns permitted under intensional predicates<sup>21</sup>

<sup>20</sup> The details of their proposal are worked out in Gambarage (2019). In Gambarage and Matthewson's (2019) talk, the analysis is examined in comparison to Salish determiner systems. In the following, I will use "G&M" to refer to these collective works, but the reader should be aware that Gambarage and Matthewson (2019) adopts what Gambarage (2019) reports in detail. I thank both Joash Gambarage and Lisa Matthewson for extremely helpful and generous discussion of their proposal. I note below where their personal communication supersedes the proposals in the cited sources.

<sup>21</sup> Note that augmentless nouns are actually not possible under intensional verbs in Nata, as reported in Gambarage (2019, 213f, 228). I have no comment on this distinction here.

*n-eny-a si-tau*  
1SM-want-FV 7AUG-book

'I want a book.'

- (36) Augmentless nouns under negation

*Wekesa si ka-kul-a si-tau*  
1Wekesa NEG 1SM-buy-FV 7NC-book

'Wekesa didn't buy any book.'

- (37) Augmentless nouns permitted under modals

*aundi Wekesa ka-kul-a si-tau*  
maybe 1Wekesa 1SM-buy-FV 7NC-book

'Maybe Wekesa bought a book.'

- (38) Augmentless nouns permitted in questions

*u-kul-a si-tau*  
2SG-buy-FV 7NC-book

'Did you buy a book?'

Nouns without an augment are thus permitted only in cases in which the speaker does not commit to the existence of an actual referent for the noun.

Augments are not barred under the scope of a non-actual operator, however. When present, the augment indicates that the speaker has an existing referent in mind.

- (39) Augmented nouns permitted under intensional predicates

*n-eny-a e-si-tau*  
1SM-want-FV 7AUG-7AUG-book

'I want a/the book.'

- (40) Augmented nouns under negation

*si na-somire e-si-tau*  
NEG 1SM-read-FV 7AUG-7NC-book

'I didn't read the book  
[Response to, 'Did you read *Fast Food Nation*?']

- (41) Augmented nouns permitted under modals

*aundi Wekesa ka-kul-a e-si-tau*  
maybe 1Wekesa 1SM-buy-FV 7AUG-7NC-book

'Maybe Wekesa bought a/the book.'

- (42) Augmented nouns permitted in questions

*u-kul-a e-si-tau*  
2SG-buy-FV 7AUG-7NC-book

'Did you buy a/the book?'

Note that the augment does not indicate definiteness or specificity. The following sentences illustrate that augments are possible when the speaker does not have a definite/specific referent in mind.<sup>22</sup>

- (43) Augments appear on indefinite nouns:

*khali khaali khu-ali neende o-mu-ami*  
15.long.time 15.long.time 15NC-COP with 1AUG-1NC-king

'Long ago there was a king.'

- (44) Augments appear on non-specific nouns:

*n-gamir-e e-si-tau*  
1OM-pass-FV 7AUG-7NC-book

'Pass me a book.'

[Context: there are many books on the table and you want any of them.']

In G&M's terms, the augment is *speaker-oriented*, and thus has the effect of "perspectivizing" (in my terms) a noun: "according to the speaker, X exists." And when a noun lacks an augment (and is not a predicate), covert D signals a *lack* of belief on the speaker's part. Technically (45) is ungrammatical according to G&M because covert D requires the presence of a non-factual operator; the felicity conditions on covert D's use are not met.<sup>23</sup>

- (45) \* *Wekesa ka-kul-a si-tau*  
1Wekesa 1SM-buy-FV 7NC-book  
[Intended: 'Wekesa bought a book.']

G&M formalize the speaker-oriented augment using a choice function. Canonically, choice functions (as they are applied to nominal reference) have been invoked to cover a variety of facts concerning (in)definiteness (cf, Reinhart 1997). For G&M, the augment provides a choice function for the speaker; it selects a non-empty subset out of the associated NP. (It is of type  $\langle et, e \rangle$ .)

<sup>22</sup> Augments are also possible in dream-reports, counter-factuals, conditionals, and future tense. I omit these examples for space. Gambarage (2019, 229f) suggests that it is possible to use a belief-of-existence determiner as long as the speaker can plausibly imagine a possible world with a referent. This may explain (in part) the difference between belief-of-existence and assertion-of-existence determiner systems (as proposed for Salish languages Matthewson (1998)); the latter require that the referent exist in the actual world.

<sup>23</sup> Thanks to Joash Gambarage and Lisa Matthewson for clarifying this point. The technical explanation is a more accurate explanation than what is reported in Gambarage (2019) and Gambarage and Matthewson (2019).

- (46) a. *Wekesa ka-ul-iy-e a-ma-khuwa*  
 1Wekesa 1SM-hear-ASP-FV 6AUG-6NC-news  
 ‘Wekesa heard the news.’  
 b.  $\llbracket (46a) \rrbracket = 1$  iff  $\exists f$  [  $f$  is a choice function for the speaker & Wekesa heard  $f(\text{news})$  ]

In prose, the choice function in (46b) maps the speaker to some individual/instance among the set of news. It is a “way of choosing” for the speaker among the set of news-individuals, and therefore commits the speaker to a belief in the existence of news. Note that this correctly captures that the belief is in the existence of an instantiation of the noun, rather than a belief in the *content* of the associated noun (trivially true for purely subjective nouns). This distinction can be observed by the fact that *eliouvehi mbo nawene Masika* ‘the lie that I saw Masika’ is not contradictory with class 5 EM on *ouvehi* ‘lie.’ If EM indicated belief in the content of the noun, then this would mean that the speaker believes that “I saw Masika” is true, and also that it is a lie, i.e., not true. Instead, what this means is that the speaker believes that there exists a lie, whose content is “I saw Masika.” This is precisely what the choice function approach gives us.<sup>24</sup>

The lack of an augment is modeled as simply existential closure, which obligatorily takes narrow scope under a non-factual operator.

- (47) a. *Wekesa si ka-ul-iy-e ma-khuwa ta*  
 1Wekesa NEG 1SM-hear-ASP-FV 6NC-word NEG  
 ‘Wekesa didn’t hear any news.’  
 b.  $\llbracket (47a) \rrbracket = 1$  iff  $\neg \exists x$  [ news( $x$ ) & Wekesa heard  $x$  ]

Importantly, the choice function in G&M’s account is *parameterized* to the speaker: there is a way of choosing *for the speaker*. Kratzer (1998), following Hintikka (1986), demonstrates a parameterized choice function using the “complex determiner” *a certain*.

- (48) a. Each husband had forgotten a certain date – his wife’s birthday.  
 b.  $\forall x(\text{husband}(x)) \rightarrow x$  had forgotten( $f_x(\text{date})$ ) (Kratzer, 1998, 168)

In prose, (48b) has the meaning that there is a way of choosing among dates for each husband, such that each husband forgot the date that is chosen for him. The parameterized choice function  $f_x$  maps each husband to a particular date. This is functionally what G&M’s choice function is doing as well: the choice function provides a mapping between the speaker and the individuals in the extension of the NP. Formally,  $f_{\text{spkr}}(\text{news})$  maps the speaker to a particular item of news.

Extending this line of reasoning, I posit that Nyala East’s nominal-EM is used when the speaker wishes to *shift* the perspective. Nouns with nominal-EM are understood not as “according to the speaker, X exists” rather they are understood as, “according to Y, X exists,” where Y is indicated by the EM—or technically, by the

<sup>24</sup> This distinction potentially has important theoretical implications for the relationship between verbs and embedded propositional nouns, as explored in Elliott (2017).

perspectival operator. Thus the practical function of the agreeing determiner is to shift the perspective away from the speaker to a contextually relevant group or body of evidence. Formally,  $D_{u\phi:X}$  is a choice function which is parameterized to the individual picked out by  $Op_j$ : it asserts a belief of existence *according to  $g(i)$*  in an associated noun. *Eviamakhuwa* is “news [*amakhuwa*] that everyone believes exists.”

Still, this is not quite enough. If it were, we would predict that  $D_{u\phi:X}$  should simply have the distribution of “plain” D: we should see nominal-EM on all nouns, e.g., \**eviomusaala* with the intended meaning ‘a tree (that everyone believes exists).’ Recall though that nominal-EM is restricted to the judge-dependent nouns. What explains this restriction? I propose that the operator is in a syntactic relationship with the judge argument of such predicates. The perspectival operator in spec-DP binds the judge argument. Thus, *eviamakhuwa* has the meaning more like “news according to everyone that everyone believes exists.” Intuitively, shifting of belief-of-existence away from the speaker is permitted precisely in those cases where there is judge-dependence because judge-dependent terms *can* be non-speaker-oriented.

If correct, then we can say that Op in the DP is banned just in the case that it does not bind a pronoun due to a general ban on vacuous quantification.<sup>25</sup> In the absence of a local perspectival operator, then the judge is inherently speaker-oriented.<sup>26</sup>

The idea is syntactically illustrated in (49). The pronoun *pro* is the judge argument, which is obligatorily bound by the perspectival operator.

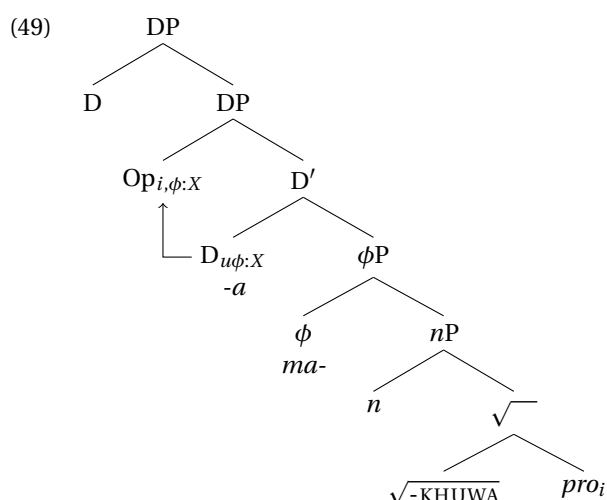
<sup>25</sup> Specifically, it must be due a formalization of this ban that includes abstraction and/or operators. Potts (2002) provides such a formalization for abstraction (adapted from Bittner 1999—though I note that Potts argues *against* the generalization below).

(i) **No Vacuous Quantification (Abstraction)**

If the semantic translation of a syntactic expression (subtree)  $\alpha$  is  $\alpha'$  then  $\lambda x[\alpha']$  is well-formed if and only if  $x$  is a free variable in  $\alpha'$ .

<sup>26</sup> This may be because the most local perspectival center is a higher  $Op_{speaker}$  associated with the clausal left-periphery. Alternatively, it may be that there is simply a default valuation for unbound judges.





This essentially treats implicit judges as *logophoric* (as in e.g., Kuno 1987), in that they are obligatorily bound by a local perspectival center. This makes two straightforward predictions. The first is that, in the absence of nominal-EM, an implicit judge will obligatorily covary with whatever the closest appropriate perspectival center is. In both examples in (50), Masika is obligatorily understood as the judge of the associated noun, as seen by the fact that explicit judges are not permitted.

- (50) a. *Masika ka-wen-e ou-layi* (??*khu* *Wekesa*)  
 Masika 1SM-see-FV 14NC-good to Wekesa  
 ‘Masika feels good (??to/for Wekesa)’  
 Lit: ‘Masika sees goodness (to/for Wekesa).’
- b. *Masika a-many-ir-e ou-vehi w-a Wekesa*  
 Masika 1SM-know-ASP-FV 14NC-lie 14AGR-ASSO Wekesa  
 ‘Masika knows Wekesa’s lies.’ (*Cannot mean*: ‘Masika knows what is a lie according to Wekesa.’)

The second prediction is that it should be impossible to have both nominal-EM and an overt judge. This prediction, too, is borne out, as the following context illustrates.

- (51) Context: Everyone in town knows about the dress that is being sold in the shop, and everyone agrees that it is hideous. But Masika somehow thinks that it’s beautiful (and everyone knows this, too). Wekesa went by the shop and saw the dress in the window.

#*Wekesa ka-wen-e e-vi-ou-layi* *khu* *Masika*  
 Wekesa 1SM-see-FV 8AUG-8NC-14NC-good to Masika

‘Wekesa saw the thing that everyone knows about that is beautiful to Masika.’

The context in (51) establishes two contextual judges. First, “everyone in town” thinks that the dress is hideous. Second, Masika thinks that the dress is beautiful. Informally, the Nyala East sentence is infelicitous because the judges are in conflict: the speaker is simultaneously reporting everyone’s and Masika’s view of the dress. Technically, it is infelicitous because the perspectival operator vacuously binds within NP.

I illustrate the formal semantics in (52). In the following, I will assume that Op (or its denotation) always refers to a set of individuals, rather than a set of evidence, and I put aside how to formally model judge-dependence of such nouns.

- (52) a. *Wekesa ka-ul-iy-e e-vi-a-ma-khuwa*  
 1Wekesa 1SM-hear-ASP-FV 8AUG-8EM-6AUG-6NC-news  
 ‘Wekesa heard the news (that everyone knows about).’
- b.  $\llbracket (52a) \rrbracket^g = 1$  iff  $\exists f_{g(i)} [ f_{g(i)}$  is a choice function for  $g(i)$  & Wekesa heard  $f_{g(i)}$ (news-to- $g(i)$ ) ]

What (52b) says is that there is a way of choosing for whoever the assignment function  $g$  assigns to  $i$  such that Wekesa heard the news according to whoever  $g(i)$  is. If  $g(i)$  is the entire group of contextually relevant individuals, then Wekesa heard the news that everyone believes exists. If  $g(i)$  is only a specific person (i.e., class 5 nominal-EM is chosen), then Wekesa heard the news that that person exists. Thus, generally, the function of the agreeing determiner is to assert belief-of-existence relative to a contextually salient individual or group—parallel to what G&M propose. The perspectival operator, besides “anchoring” the choice function, also binds the implicit judge argument. Agreeing determiners are thus not possible on other nouns like, e.g., *omusaala* ‘tree’ because such nouns are not judge dependent; there is no judge argument for Op to bind.<sup>27</sup>

I take the appearance of the outer augment in nominal-EM (a “non-agreeing” D) to contribute speaker-oriented meaning, like the augment elsewhere in Nyala East. The function of the outermost/highest augment *e-* in (53a) is thus to convey that the speaker believes in news that is believed by everyone to exist. In other words, its function is simply that of non-agreeing augments elsewhere in Nyala East: it conveys belief of existence according to the speaker.<sup>28</sup>

- (53) a. *Wekesa ka-ul-iy-e e-vi-a-ma-khuwa*  
 1Wekesa 1SM-hear-ASP-FV 8AUG-8EM-6AUG-6NC-news  
 ‘Wekesa heard the news (that everyone knows about).’

<sup>27</sup> Indeed, nominal-EM is not even available on non-propositional/non-subjective nouns in false-belief scenarios. That is, nominal-EM cannot be used to “clarify” *de re/de dicto* ambiguities.

<sup>28</sup> I assume an IDENT type-shifter, as proposed in Partee (1987), which combines with the output of the lowest choice function, and shifts something of type  $e$  to a predicate of individuals,  $\langle e, t \rangle$ . This then serves as the input to the speaker-oriented choice function.

(i)  $\llbracket \text{IDENT} \rrbracket = \lambda x \lambda y. y = x$   $\langle e, et \rangle$

IDENT guarantees that the individual chosen by the “speaker’s” choice function is the individual chosen by “Op’s” choice function. Note that IDENT is also needed with covert D; the result is existentially quantified over.

- b.  $\llbracket (53a) \rrbracket^g = 1$  iff  $\exists f, f_{g(i)}$  [  $f$  is choice function for the speaker &  $f_{g(i)}$  is a choice function for  $g(i)$  & Wekesa heard  $f(f_{g(i)}(\text{news-to-}g(i)))$  ]

Again in prose, (53b) says that there are two choice functions. One choice function is a way of choosing among news for the entire contextually relevant set of people. For that group of people, there is some news. The second choice function maps the speaker to an element in that set. For the speaker, news that everyone believes exists exists. Wekesa heard that news.

As elsewhere, under a non-factual operator, the initial augment can be omitted, in which case the speaker asserts a lack of belief in the associated noun—which is believed to exist according to some other source.

- (54) a. *Wekesa si ka-ul-iy-e vi-a-ma-khuwa*  
 1Wekesa NEG 1SM-hear-ASP-FV 8EM-6AUG-6NC-news  
 ‘Wekesa didn’t hear any news (that everyone believes exists).’
- b.  $\llbracket (54a) \rrbracket^g = 1$  iff  $\exists f_{g(i)}$  [  $f_{g(i)}$  is a choice function for  $g(i)$  and  $\neg \exists x$  [  $(f_{g(i)}(\text{news-to-}g(i)))=x$  & Wekesa heard  $x$  ] ]

By attributing the source of the perspectival information to the context, a choice function, and a DP-internal perspectival operator, we correctly predict that nominal-EM is not “shiftable” in an embedded context. This is a direct result of one of the core arguments in favor of choice functions, i.e., that they allow nouns to take apparent “scope” out of islands and other embedded clauses. And it is also a result of the fact that the perspectival operator is local to the noun phrase, and does not stem from a higher, clausal projection.

- (55) a. *Masika ka-vol-iy-e mbo Wekesa ka-ul-iy-e*  
 1Masika 1SM-say-ASP-FV COMP 1Wekesa 1SM-hear-ASP-FV  
*e-vi-ou-vehi*  
 8AUG-8AGR-14NC-lie  
 ‘Masika said that Wekesa heard the lie (that everyone knows the truth about)’
- b. *Wekesa ni-a-ul-il-a e-vi-a-ma-khuwa,*  
 Wekesa COMP-1SM-hear-ASP-FV 8AUG-8NC-6AUG-6NC-word  
*a-li o-khu-chi-a Nairobi*  
 1SM-COP 15AUG-15NC-go-FV Nairobi  
 ‘If Wekesa hears the news (that everyone knows about), he’ll leave town.’

The analysis additionally accounts for the context-dependence of nominal-EM. As noted previously, a noun like *eviembaha* derived from *embaha* ‘story’ can mean variously ‘a story that everyone told/heard/made up/etc.’ This follows from the fact that the “way of choosing” provided by the choice function is not fixed. There are many ways to map an individual or group of individuals to a belief-of-existence in the associated NP.

### 3 Extensions: verbal- and clausal-EM

I turn now to a comparison of nominal perspective with other instances of perspective in Nyala East. This comparison is motivated primarily on language internal grounds: the epistemic marking described above appears in two additional places in the language, on verbs and complementizers, providing similar meaning distinctions. The comparison has a theoretical basis as well. “Perspective” (broadly construed) has canonically been proposed to be a CP-level phenomenon, and so I want to explore to what extent this analysis of nominal-EM parallels an analysis of clause-level perspectivization. I show in the next two sections that there is evidence for a similar perspectival operator in the CP domain Nyala East, though I put aside a formal semantics for CP-level perspective here.

The analyses of the additional contexts in which epistemic marking appears build on established analyses for Bantu languages in Diercks (2013); Halpert (2016) and Gluckman (2021). What I call verbal-EM—epistemic marking on a verb—reflects an agree relationship between T and the embedded clause, in particular, a perspectival operator in spec-CP. What I call clausal-EM—epistemic marking on a complementizer—is simply C agreeing upwards with the same perspectival operator. The data thus illustrate two related points. First, there is an inherent parallelism between the nominal and the clausal domains: both host perspectival operators. This of course follows a long tradition of equating nouns and clauses (Rosenbaum, 1967; Abney, 1987; Adger and Quer, 2001) among many others. At the same time, the empirical evidence suggests that this parallelism does not extend to the verbal domain. There is no locus for perspectivization in the verbal domain as there is in the clausal and nominal domain (Safir, 2004a; Sundaresan, 2018).

#### 3.1 Verbal-EM in Nyala East

Nyala East allows four “expletive agreements,” demonstrated in (56). They are morphologically identical to the nominal-EM discussed earlier—though being verbal morphology, they do not occur with an augment. When prefixed to a verb, I refer to the markers as *verbal-EM*, and gloss them as EM. However, it should be noted that in the verbal-EM use, the epistemic markers fill the slot of, and are morphologically identical to, the subject agreement markers shown in Table 1.<sup>29</sup>

- (56) a. *vi-on-ekh-an-a mbo Masika ka-chi-e Nairobi*  
**8EM-see-NEUT-FV COMP Masika 1SM-go-FV Nairobi**  
 ‘It looks like Masika went to Nairobi.’
- b. *ka-on-ekh-an-a mbo Masika ka-chi-e Nairobi*  
**6EM-see-NEUT-FV COMP Masika 1SM-go-FV Nairobi**

<sup>29</sup> The term “verbal” is a descriptive label, chosen by analogy to nominal-EM because the epistemic marking appears prefixed to a verb. However, because the marking is ostensibly subject agreement, it is most likely associated with the projection T, rather than V, as discussed below. Still, I will continue to use the term “verbal-EM” rather than “temporal-/tense-EM” or otherwise for purely descriptive purposes. The analysis below would not change in any case.

‘It looks like Masika went to Nairobi.’

- c. *li-on-ekh-an-a mbo Masika ka-chi-e Nairobi*  
**5EM-see-NEUT-FV COMP Masika 1SM-go-FV Nairobi**

‘It looks like Masika went to Nairobi.’

- d. *e-on-ekh-an-a mbo Masika ka-chi-e Nairobi*  
**9EM-see-NEUT-FV MBO Masika 1SM-go-FV Nairobi**

‘It looks like Masika went to Nairobi.’

Verbal-EM may appear on any verb which takes a CP complement whenever the verb does not have a thematic subject.<sup>30</sup> The meaning contribution is roughly equivalent to that of nominal-EM, *modulo* differences arising due to category. In (56), the choice of *vi-* indicates either that it looks to everyone, or it looks based on a lot of information, like Masika went to Nairobi. *Ka-* again indicates a smaller group of people/information. *Li-* in turn indicates a specific person/piece of evidence. And *e-* neutrally indicates some person/information. Again, class 9 is largely degraded presumably due to the fact that it is particularly uninformative. However, speakers who regularly use it will often employ class 9 to obfuscate or present an air of “neutrality.”

All four verbal-EM are possible whether the CP is a subject or object (abstracting away from whether the CP is a “true” syntactic subject or object, or it sits in some higher position; cf Lohndal 2014 for recent discussion). In (57) I use the morphologically invariant complementizer *mbo* (found in a number of areally related Bantu languages). I discuss additional complementizers presently.<sup>31</sup>

- (57) *mbo Masika ka-chi-e Nairobi*  
 COMP 1Masika 1SM-go-FV Nairobi  
*vi-/ka-/li-/e-a-many-ikh-an-a*  
 8EM-/6EM-/5EM-/9EM-TNS-know-NEUT-REC-FV  
 ‘That Masika went to Nairobi is known.’

Verbal-EM is not a “general” expletive strategy in Nyala East. In fact, expletive agreement is not found anywhere else in the language.<sup>32</sup> There is no expletive

<sup>30</sup> Most CP-embedding complements can be detransitivized with the “neuter” or “anticausative” suffix (Gluckman and Bowler, 2016a; Dom et al., 2018). The co-occurrence of the neuter *-Vk* and “reciprocal” *-an* is well documented in Bantu languages (Seidl and Dimitriadis, 2003). I put aside their precise function here, simply noting that not all CP-selecting predicates require such suffixes when they occur with verbal-EM. I also note that verbal-EM do not make any distinctions among classes of CP-embedding predicates (e.g., factivity, implicativity, etc). In light of the semantic contribution discussed below, this fact is surprising. Pending a closer examination of the semantics associated with these markers as well as clause-embedding verbs in Nyala East, I will have nothing to say about why EM on verbs does not appear to be sensitive to things like factivity. Diercks (2013, 385 fn 32) notes that in the related Lubukusu, “expletive subjects” do appear to be sensitive to different verb classes.

<sup>31</sup> I put aside the issue of when an overt C is required. As in English, subject-CPs require the presence of a complementizer, while not all object-CPs do. I have no comment on this distributional distinction, other than to note that covert C must be able to host a perspectival operator as well, since verbal-EM is possible even in the absence of an overt complementizer.

<sup>32</sup> There are also no expletive object markers, a point I return in in subsection 3.2.1.

agreement for weather/ambient predicates (58); there is no existential expletive (59); there is no subject *in situ* expletive, observed in some Bantu languages (60).<sup>33</sup>

(58) Weather/ambient predicates

- a. *e-fula e-kw-a*  
9NC 9SM-fall-FV  
'It's raining.' (Lit: 'Rain is falling.')
- b. *e-mboo e-il-i-yo*  
9NC-wind 9SM-COP-LOC  
'It's windy.' (Lit: 'Wind is there.')

(59) Existential constructions

- a. \* *khu-li e-safu khu mu-saala*  
17SM-COP 5NC-leaf on 3NC-tree  
[Intended: 'There's a leaf on the tree.']
- b. \* *mu-li o-mu-khasi mu si-koro*  
18SM-COP 1AUG-1NC-woman in 7NC-room  
[Intended: 'There's a woman in the room.']

(60) Subject *in situ*

- a. *ku-fik-é i-ncwadi*  
17SM-arrive-CONJ1 9-9letter  
'A letter arrived.' Xhosa (Carstens and Mletshe, 2015)
- b. \* *khu-ool-ir-e o-mu-khasi*  
17SM-arrive-ASP-FV 1AUG-1NC-woman  
[Intended: 'A woman arrived.']

The full contribution of verbal-EM is complex, and I cannot provide exhaustive documentation here. (See in-depth discussion in Gluckman and Bowler 2016b for similar distinctions in the related Logoori.) In general, the patterns observed for nominal-EM hold for verbal-EM as well: verbal-EM indicates an information perspective, either a group of people or an amount of evidence.

I close the description of verbal-EM by noting a difference between verbal-EM and nominal-EM. Though clearly similar in many respects (morphological shape

<sup>33</sup> There is one possible exception to this. Nyala East, like some other Bantu languages (cf, Kin-yarwanda Kimenyi 1980), has possibly developed—or is in the process of developing—an "arbitrary" expletive from the class 2 agreement *va-*, which elsewhere refers to plural humans. Thus, in response to passive prompts, speakers will often give examples like the following in (i). However, since it does not have the distribution of EM in other contexts (e.g., as agreement on a verb that has a non-thematic subject), I do not consider it EM here.

(i) *va-khupil-e Masika*  
2SM-beat-FV Masika  
'Masika was beaten.'  
Lit: 'They beat Masika.'

(ii) \**va-on-ekh-an-a Ingwe ya-khilil-e*  
2SM-see-NEUT-REC-FV 9Ingew 9SM-win-FV  
[Intended: 'It looks like Ingwe won.']

and semantic contribution), verbal-EM differs from nominal-EM because verbal-EM is *dependent* on the presence of another constituent: it only appears in the presence of a selected CP. Nominal-EM does not display a similar correlation; it can appear on an isolated noun (e.g., *eviouvehi*, ‘a lie (that everyone is aware of)’) or on a noun that does not select for a CP at all (e.g., *eviourembo*, ‘beauty (that everyone finds beautiful)’). The appearance of verbal-EM however, is strict: there must be an overt selected CP argument.

This fact is made evident in (61) and (62). Verbal-EM is only possible when there is a selected CP. (Cf similar Greek data in Iatridou and Embick 1997).<sup>34</sup>

- (61) a. *li-a-mu-kiis-isi-e* *Ingwe ya-vich-ir-e*  
5EM-TNS-1OM-surprise-CAUS-FV 9Ingwe 9SM-win-ASP-FV  
‘It surprised him/her that Ingwe won.’
- b. \* *Ingwe ya-vich-ir-e na li-a-mu-kiis-isi-e*  
9Ingwe 9SM-win-ASP-FV and 5EM-TNS-1OM-surprise-CAUS-FV  
[Intended: ‘Ingwe won and it surprised him/her.’]
- (62) a. A: *Ingwe ya-vich-ir-e?*  
9Ingwe 9SM-win-ASP-FV  
A: ‘Did Ingwe win?’
- b. B: *Indiyo. #li-a-mbo-kiis-isi-e*  
Yes. 5EM-TNS-1OM-surprise-CAUS-FV  
B: ‘Yes. It surprised me.’<sup>35</sup>

Indeed, the appearance of verbal-EM is also subject to locality effects with respect to the embedded CP. Intervening elements can block the availability of verbal-EM. To illustrate, first, I note that verbal-EM may appear in copular constructions with a predicative CP. (The meaning that arises is something like “It’s sure that...” or “It’s just that...”)

- (63) a. *vi-li mbo Ingwe ya-khil-il-e*  
8EM-COP COMP 9Ingwe 9SM-win-ASP-FV  
‘It’s sure that Ingwe won (everyone knows it).’  
(Lit: ‘It’s that Ingwe won.’)
- b. *ka-li mbo Ingwe ya-khil-il-e*  
6EM-COP COMP 9Ingwe 9SM-win-ASP-FV  
‘It’s sure that Ingwe won (a few people know it).’
- c. *li-li mbo Ingwe ya-khil-il-e*  
5EM-COP COMP 9Ingwe 9SM-win-ASP-FV  
‘It’s sure that Ingwe won (someone specific knows it)’

<sup>34</sup> Verbal-EM are thus technically among the class of *CP-linked* expletives (Williams, 1994; Vikner, 1995; Iatridou and Embick, 1997; Ruys, 2010) among others. Though see Gluckman (2021) for arguments that *pro*-drop languages do not have CP-linked *pro<sub>expl</sub>*.

<sup>35</sup> This is not an ungrammatical sentence in Nyala East, since outside of this specific context the subject of the verb could be a dropped DP. The response is infelicitous in this discourse because there is no DP that the class 5 subject agreement could be referring to.

- d. *e-li mbo Ingwe ya-khil-il-e*  
 9EM-COP COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It’s sure that Ingwe won (someone nonspecific knows it)’

However, verbal-EM is strictly unavailable if the CP is embedded inside of a noun. In such cases, the copula must indicate the class features of the noun. And if the noun has nominal-EM, then the copula reflects the features of the nominal-EM. I include (64c) to show that a noun marked with EM obligatorily triggers the corresponding EM agreement on the verb.<sup>36</sup>

- (64) a. *w-ali ou-veyi mbo Ingwe ya-khil-il-e*  
 14SM-COP 14NC-lie COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It was a lie that Ingwe won.’
- b. \**vi-/ka-/li-/e-ali ou-veyi mbo Ingwe ya-khil-il-e*  
 8SM-/6EM-/5EM-/9EM-COP 14NC-lie COMP 9Ingwe 9SM-win-ASP-FV  
 [Intended: ‘It was a lie that Ingwe won.’]
- c. *vi-ali e-vi-ou-veyi mbo Ingwe ya-khil-il-e*  
 14EM-COP 8AUG-8EM-14NC-lie COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It was a lie (that everyone knew about) that Ingwe won.’

These facts present an added challenge to verbal-EM. Though the semantic contribution of verbal-EM is similar to that of nominal-EM, the syntactic facts require a distinct analysis, namely, one that syntactically links the epistemic marking on verbs with the embedded clause.

### 3.1.1 Analysis of verbal-EM

I argue that verbal-EM stems from a syntactic relationship between the verb (or rather, the locus of subject agreement) and the embedded CP. I take the appearance of verbal-EM to reflect an Agree relationship between T (assumed to be the

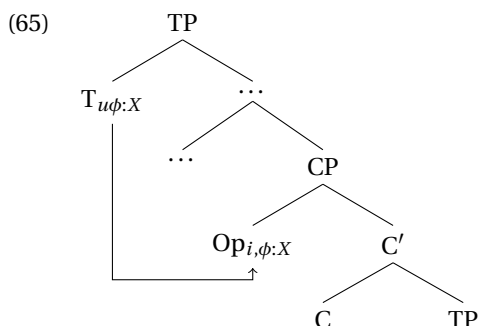
<sup>36</sup> I also note that an intervening applied argument which undergoes passive-raising similarly blocks verbal-EM (i), (ii). This is likewise explained as an intervention effect.

- (i) *Masika ka-vol-er-w-e mbo Ingwe ya-khupirw-e*  
 Masika 1SM-say-APPL-PASS-FV that 9Ingwe 9SM-lose-FV  
 ‘Masika was told that Ingwe lost.’
- (ii) \**Masika vi-/li-/ka-vol-er-w-a mbo Ingwe ya-khupirw-e*  
 Masika 8SM-5EM-6EM-say-APPL-PASS-FV that 9Ingwe 9SM-lose-FV  
 [Intended: ‘Masika was told that Ingwe lost.’]

Note, though, that not all intervening elements block agreement between T and the lower clause. In (61a), the indirect object, marked on the verb with *mu-*, does not give rise to intervention effects. It must be the case that some elements are rendered “inactive” and so are not possible targets for T’s  $\phi$ -probe. Though I am not able to provide full discussion of the algorithm that renders arguments inactive, it is likely related to case. In the instances in which intervention effects are found (i.e., copular constructions), the only case-licensing head available is T. In the cases in which no intervention effects are found (ditransitive constructions), case licensing may stem from the transitive verb (or the applicative head). In certain circumstances, like passives, this head loses the ability to assign case, thus rendering some arguments active interveners.



locus of subject agreement) and one of the four perspectival operators in the embedded clause (following Gluckman’s 2021 analysis of the related Logoori; see also similar ideas in Halpert 2016, who argues that expletive subject agreement in Zulu result from agreement with an embedded CP.)



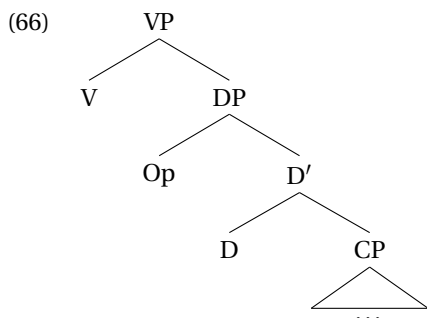
This configuration directly ties the availability of verbal-EM to the presence of a syntactically local CP. Verbal-EM will be unavailable if a) there is no selected CP, or b) if the selected CP is not the most local element bearing active  $\phi$ -features. I specifically reject an analysis which posits a perspectival operator in the verbal domain, or some other operator, say in spec-CP of the matrix clause. Such an analysis would sever the syntactic relationship between verbal-EM and an embedded CP.<sup>37</sup>

A technical note about the direction of the Agree mechanism is needed here. For nominal-EM, I concluded that Agree was upwards—or at least is in a spec-head configuration. (I will postulate the same thing for clausal-EM below.) Verbal-EM, however, utilizes a downward Agree relation. There are a few ways to reconcile these superficially conflicting uses of Agree. In the current envisioning of the issues, I am assuming that D’s (and later C’s)  $\phi$ -probe is relativized to target logophoric operators. It must therefore cyclically expand its search domain when no such operator can be found in its (local) c-command domain (Béjar and Rezac, 2009). An alternative option would be to reorder the functional structure of perspectival DPs, situating Op below the agreeing D: [ D [ D\_{u\phi} [ Op\_{\phi} [ ... ] ] ]. Agree can then be said to always look in its c-command domain for the most local appropriate (meaning logophoric) goal. As stated earlier, note that this solution, and indeed any solution, requires relativizing D’s  $\phi$ -probe to target a logophoric operator. T’s  $\phi$ -probe is not similarly relativized, as subject agreement is not confined to logophoric centers. This solution is closest in spirit and structure to what Diercks (2013) suggests for the agreeing C in Lubukusu, and so I adopt it here. Ultimately, structural issues aside, the data suggest that D and C are related in this respect, to the exclusion of T.

<sup>37</sup> In this, the findings match those of Sundaresan (2018) who argues based on binding phenomena in Tamil that the verb phrase (or anywhere below TP) cannot be a perspectival domain. In her terms, PersP, the locus of a perspectival center, is located above TP. This is consistent with the proposal above.

### 3.2 Are CPs actually DPs? No.

One possibility that we can entertain is that embedded clauses in Nyala East are in fact DPs, where a silent head D directly embeds a CP (Manzini and Savoia, 2003; Roussou, 2010; Davies and Dubinsky, 2009; Kastner, 2015; Pietraszko, 2019). (Alternatively, there may be a silent NP e.g., FACT, as proposed in Kiparsky and Kiparsky 1971.)



Besides being explicitly argued for in the above cited works (see in particular Pietraszko's (2019) discussion of the Bantu language Ndebele), the hypothesis has the further benefit of allowing us to posit a single structural source for perspectivalization: spec-DP. We could claim that verbal-EM derives from agreement with a perspectival operator in spec-DP, the shell around the CP.

However, treating CPs as DPs leads to a number of straightforward empirical predications that are not borne out in Nyala East. As Kastner (2015) points out, if CPs are housed in a DP shell, then we expect them to have DP properties. The diagnostics below indicate that selected CPs do not have the category of DP in Nyala East.<sup>38</sup> Ultimately, we must conclude that there is no motivation grouping (object) CPs together with DPs Nyala East, whether in a DP shell or otherwise.<sup>39</sup>

#### 3.2.1 Object Marking

In Nyala East, *pro*-dropped objects are obligatorily referenced on the verb by a set of object markers, which are in complementary distribution with overt nominals.

- (67) *Wekesa a-many-il-e a-ma-khuwa mana Nekesa yesi*  
 Wekesa 1SM-know-ASP-FV 6AUG-6NC-word and Nekesa also  
*a-\*(ka-)many-il-e*  
 1SM-6OM-know-ASP-FV  
 'Wekesa knows the news and Nekesa knows it, too.'

<sup>38</sup> We restrict discussion to non-subject CPs. It is still possible that subject CPs are housed in a DP shell; cf Halpert and Schueler (2013); Lohndal (2013). It is possible that, through the course of the derivation, a CP "acquires" a DP shell for syntactic reasons, e.g., promotion to spec-TP. What I show in the diagnostics below is that verbal-EM does not *need* a DP.

<sup>39</sup> The first two tests below (object marking and selection) are replicated from Gluckman (2021). The last test (associatives/linkers) is taken from Pietraszko (2019).

Elided clauses cannot trigger object marking.

- (68) *Wekesa a-many-il-e mbo Ingwe ya-vich-ir-e mana Nekesa*  
 Wekesa 1SM-know-ASP-FV COMP 9Ingwe 9SM-win-ASP-FV and Nekesa  
*yesi a-(\*vi-/ka-/li-/yi-)many-il-e*  
 also 1SM-8OM-6OM-5OM-9OM-know-ASP-FV  
 ‘Wekesa knows that Ingwe won and Nekesa knows it, too.’

Halpert (2016, 255, fn 5) (for Zulu) and Gluckman (2021) (for Logoori) suggest that the reason that clauses can trigger subject marking but cannot trigger object marking in Bantu is that object marking involves cliticization, which is proposed to be dependent on a D feature. Subject marking, on the other hand, just reflects a “pure” Agree dependency. Since CPs lack D, object cliticization is not possible, but subject marking is still possible because it is not contingent on the presence of a DP.<sup>40</sup>

### 3.2.2 Distribution and selection

One of the core arguments that Kastner uses in his analysis is to show that CPs which have a DP layer appear in positions that are independently available for unambiguous DP arguments. Verbs that cannot select for a DP cannot select for a CP headed by a DP. The embedded clause with a predicate like *seem* must be a CP, not a DP.

- (69) a. \*It seems the fact / story / news.  
 b. It seems that Ingwe won.

Nyala East however readily permits all four verbal-EM with all such verbs.

- (70) \* *(e-khuwa) li-on-ekh-an-a (e-khuwa)*  
 5NC-word 5SM-see-NEUT-REC-FV 5NC-word  
 [Intended: ‘\*The news seems / \*It seems the news.’]
- (71) *vi-/ka-/li-/e-on-ekh-an-a mbo Ingwe ya-vich-ir-e*  
 8EM-/6EM-/5EM-/9EM-see-NEUT-REC-FV COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It looks like Ingwe won.’

<sup>40</sup> Note that such data suggest that object CPs can *never* be functionally DPs in Nyala East. It further provides evidence against Kastner’s (2015) analysis which proposes that certain predicates may optionally select for a DP complement. The unavailability of the object marking with a verb like *-many-* ‘know,’ which does select for a DP complement suggests that this analysis cannot be correct for Nyala East. It further undermines the need for CPs to be DPs in subject position, as argued extensively for English (see the above cited authors). Ultimately, we might attribute this to parametric differences: some languages only allow DPs in the subject position, other languages are more permissive.

### 3.2.3 Associative/linker constructions

Pietraszko (2019) makes a compelling case that CPs in Ndebele are headed by D. Part of the argument rests on distributional facts. I focus on one particularly convincing argument here. As a complement to N, a CP in Ndebele must be headed by the associative marker (called the *linker* by Pietraszko). This marker is independently required for linking nominal dependents (possessors, complements) to a head noun.

- (72) a. *i-moto \*(y-a-)u-mfana*  
 9-car 9-LNK-1-boy  
 ‘the boy’s car.’
- b. *indaba i-a- [ u-kuthi u-ya-m-thanda ]*  
 9.news 9-LNK- 15.AUG-15COMP 1SBJ-TAM-1.OBJ-like  
 ‘the news that she likes him’ (Pietraszko, 2019, 81)

Since unambiguous nominal dependents, like possessives in (72a), must also appear with the associative morpheme, the facts in (72) are a clear indication that CPs have the category DP (or at least *can* have the category DP).

In Nyala East however, we find a clear distinction. While unambiguous nominal dependents must appear with the associative marker (73a), clauses cannot, (73b).

- (73) a. *e-khuwa \*(li-a) Masika*  
 5NC-news 5AGR-ASSO Masika  
 ‘Masika’s news’
- b. *e-khuwa (\*li-a) mbo Ingwe ya-vich-ir-e*  
 5NC-word 5AGR-ASSO COMP 9Ingwe 9SM-win-ASP-FV  
 ‘the news that Ingwe won’

In summary, there are syntactic reasons to differentiate the categories C and D in Nyala East. I therefore conclude that CPs and DPs are distinct categories in the language (or equivalently, CPs do not have a DP layer in Nyala East), and that both projections may house perspectival information.

### 3.3 Clausal-EM in Nyala East

In the previous section, I provided evidence for a perspectival operator in the clausal domain. In this final section, I provide further support for this idea from the distribution of Nyala East’s *agreeing complementizer*. Like many Eastern Bantu languages, Nyala East has a complementizer which introduces a finite embedded clause, and which reflects the class features of the matrix subject. In this sense, it is identical to what is described in Diercks (2013) for the closely related Lubukusu,

and bears a striking similarity to the agreeing complementizers of the more distantly related Bantu languages Chokwe, Luchazi, Lunda, and Luvala described in Kawasha (2006, 2007).<sup>41</sup>

- (74) a. *Masika ka-voy-e a-chi Ingwe ya-vich-ir-e*  
 Masika 1SM-say-FV 1AGR-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘Masika said that Ingwe won.’
- b. *o-ver-a o-chi Ingwe ya-vich-ir-e?*  
 2SG.SM-be.sad-FV 2SG-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘Are you sad that Ingwe won?’
- c. *na-khu-voy-e n-chi / \*o-chi Nekesa ka-chi-e*  
 1SG-2SG.OM-say-FV 1SG-COMP 2SG-COMP 1Nekesa 1SM-go-FV  
*Nairobi*  
 Nairobi  
 ‘I told you that Nekesa went to Nairobi.’

Nyala East has three other non-agreeing complementizers: *mbo* ‘that’ (shown earlier), *vachi*<sup>42</sup> ‘that’ and *nga*, ‘like.’<sup>43</sup>

Why a particular complementizer is chosen is a complex question which I cannot fully address here. Broadly, these are all instances of *epistemic* complementizers discussed in Frajzyngier and Jasperson (1991); Boye et al. (2015). They signal an epistemic stance relative to an individual. The agreeing complementizer situates the embedded clause “according to” the matrix subject.

As observed in Lubukusu by Diercks (2013), though the agreeing complementizer must match the features of the (next highest) referential subject,<sup>44</sup> the relationship between the embedding subject and the agreeing complementizer is not

<sup>41</sup> The agreeing complementizer itself is historically derived from the verb ‘say’ (Güldemann, 2002), but it cannot be synchronically analyzed as category V: *-chi* cannot be inflected for tense/aspect/mood or an object marker, cannot be negated, does not have a nonfinite form, cannot take a lexical subject, and appears in clausal positions not possible for other verbs. (See also Güldemann (2008, §5.1.3.3) for a diachronic analysis of *\*-ti* that suggests the source is not verbal, but rather, a demonstrative.)

<sup>42</sup> Despite its surface similarity, *vachi* should not be analyzed as an agreeing complementizer consisting of class 2 subject marking prefixed to the complementizer because *vachi* is available even when the matrix subject is not class 2.

<sup>43</sup> Embedded *if*-clauses are introduced in a variety of ways, but most typically with the C element *ni-* which is prefixed to the verb: *Wekesa ni-a-kula esitau, ...* ‘If Wekesa buys a book, ...’.

<sup>44</sup> Certain speakers permit cases where the agreeing complementizer can track a non-subject argument. (See also Sundaresan 2018 for a related observation in Tamil.) Such examples are not accepted by all speakers, and are the exception rather than the rule. Even with such speakers, an agreeing complementizer cannot reflect the features of an implicit argument.

- (i) *%na-lak-ir-w-a neende Masika a-chi / n-chi Ingwe i-ili okhu-vicha*  
 1SG-promise-APPL-PASS-FV with Masika 1AGR-COMP 1SG-COMP 9Ingwe 9SM-COP 15NC-win  
 ‘I was promised by Masika that Ingwe will win.’
- (ii) *na-lak-ir-w-a \*a-chi / n-chi Ingwe i-ili okhu-vicha*  
 1SG-promise-APPL-PASS-FV 1AGR-COMP 1SG-COMP 9Ingwe 9SM-COP 15NC-win  
 ‘I was promised that Ingwe will win.’

subject to locality or intervention effects. An agreeing complementizer can track an argument across an indirect object, and inside of a noun phrase.

- (75) a. *Masika ka-khu-vol-ir-e a-chi / \*khu-chi Nekesa*  
 1Masika 1SM-2sg.OM-say-APPL-FV 1AGR-COMP 2SM-COMP 1Nekesa  
*ka-chi-e Nairobi*  
 1SM-go-FV 9Nairobi  
 ‘Masika told you that Nekesa went to Nairobi.’
- b. *Masika ka-n-lak-ir-e a-chi / \*n-chi*  
 1Masika 1AGR-1OM-promise-APPL-FV 1AGR-COMP 1SG-COMP  
*Ingwe i-ili okhu-vicha*  
 9Ingwe 9SM-COP 15NC-win  
 ‘Masika promised me that Ingwe will win.’
- (76) a. *n-ul-iy-e a-ma-khuwa n-chi / \*ka-chi Okwako*  
 1SG-hear-ASP-FV 6AUG-6NC-news 1SG-COMP 6AGR-COMP 1Okwako  
*ka-chi-a Nairobi*  
 1SM-go-FV 9Nairobi  
 ‘I heard the news that Okwako went to Nairobi.’
- b. *Masika ka-ul-iy-e e-vi-e-khuwa a-chi /*  
 1Masika 1SM-hear-ASP-FV 8AUG-8EM-5NC-news 1AGR-COMP  
*vi-chi Ingwe ya-khil-il-e*  
 \*8AGR-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘Masika heard the news (that everyone knows) that Ingwe won.’

The agreeing complementizer is germane to the discussion of epistemic marking for two reasons. The first is that an agreeing complementizer can co-occur with verbal-EM. Unsurprisingly, they must match.

- (77) a. *vi-on-ekh-an-a vi-chi Ingwe ya-vich-ir-e*  
 8EM-see-NEUT-REC-FV 8EM-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It looks like Ingwe won.’
- b. *ka-on-ekh-an-a ka-chi Ingwe ya-vich-ir-e*  
 6EM-see-NEUT-REC-FV 6EM-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It looks like Ingwe won.’
- c. *li-on-ekh-an-a li-chi Ingwe ya-vich-ir-e*  
 5EM-see-NEUT-REC-FV 5EM-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It looks like Ingwe won.’
- d. *e-on-ekh-an-a e-chi Ingwe ya-vich-ir-e*  
 9EM-see-NEUT-REC-FV 9EM-COMP 9Ingwe 9SM-win-ASP-FV  
 ‘It looks like Ingwe won.’

However, unlike what is demonstrated above for the agreeing complementizer with a lexical subject, the relationship between verbal-EM and the complementizer *is* sensitive to locality and intervention. In cases with predicative propositional nouns and nonthematic subjects, verbal-EM is not possible (78b-78e), though

epistemic marking is permitted on the complementizer in the absence of verbal-EM (78a).

- (78) a. *w-ali ou-veyi vi-/ka-/li-/e-chi Ingwe*  
 14SM-COP 14NC-lie 14EM-/6EM-/5EM-/9EM-COMP 9Ingwe  
*ya-khil-il-e*  
 9SM-win-ASP-FV  
 ‘It was a lie that Ingwe won.’
- b. \* *vi-ali ou-veyi vi-chi Ingwe ya-khil-il-e*  
 8EM-COP 14NC-lie 8EM-COMP 9Ingwe 9SM-win-ASP-FV  
 [Intended: ‘It was a lie that Ingwe won.’]
- c. \* *ka-ali ou-veyi ka-chi Ingwe ya-khil-il-e*  
 6EM-COP 14NC-lie 6EM-COMP 9Ingwe 9SM-win-ASP-FV  
 [Intended: ‘It was a lie that Ingwe won.’]
- d. \* *li-ali ou-veyi li-chi Ingwe ya-khil-il-e*  
 5EM-COP 14NC-lie 5EM-COMP 9Ingwe 9SM-win-ASP-FV  
 [Intended: ‘It was a lie that Ingwe won.’]
- e. \* *e-al- ou-veyi e-chi Ingwe ya-khil-il-e*  
 9EM-COP 14NC-lie 9EM-COMP 9Ingwe 9SM-win-ASP-FV  
 [Intended: ‘It was a lie that Ingwe won.’]

The data in (78a) demonstrate that the epistemic marking that appears on the complementizer is *independent* of verbal-EM. The data in (78b-78e) demonstrate that the relationship between subject agreement and an agreeing complementizer is different from verbal-EM and an agreeing complementizer. I summarize the difference schematically in (79).

- (79) a. [verbal-EM ... [X<sub>φ</sub> ... [agreeing-C ... ]]]  
 └──────────────────┘  
 ✗
- b. [(DP) subject-marking ... [X<sub>φ</sub> ... [agreeing-C ... ]]]  
 └──────────────────┘  
 ✓

The second reason agreeing complementizers factor into the discussion of epistemic marking is that Njala East permits *unembedded* complementizers.<sup>45</sup> When the agreeing complementizer is unembedded, it can be inflected for 1st/2nd person (singular) agreement, or it may occur with one of the four EM. I refer to (80b-80e) as *clausal-EM*.<sup>46</sup>

<sup>45</sup> The phenomenon of unembedded complementizers has recently been labelled *desubordination* (Boye and Kehayov, 2016) or *insubordination* (Evans, 2007; Evans and Watanabe, 2016) for non-Bantu languages.

<sup>46</sup> Not all speakers accept or produce clausal-EM for reasons that are not fully understood. I suspect that, for many speakers, the agreeing complementizer *-chi* may still bear some residual “say” meaning (perhaps as a quotative marker, cf Güldemann 2008), and so clausal-EM is degraded because epistemic markers cannot in general be lexical subjects of a transitive verb of communication. I note that all speakers accept/produce unembedded non-agreeing complementizers *mbo / vachi*. All speakers also permits unembedded agreeing complementizers inflected for 1st/2nd person, but not third person.

- (80) a. *mbo / vachi / n-chi Masika ka-chi-e Nairobi*  
 COMP / COMP / 1SG-COMP 1Masika 1SM-go-FV Nairobi  
 ‘Masika went to Nairobi (I heard from someone/many people/I insist)’
- b. *vi-chi Masika ka-chi-e Nairobi*  
 8EM-COMP 1Masika 1SM-go-FV Nairobi  
 ‘Masika went to Nairobi (according to a lot of evidence).’
- c. *ka-chi Masika ka-chi-e Nairobi*  
 6EM-COMP 1Masika 1SM-go-FV Nairobi  
 ‘Masika went to Nairobi (according to a few pieces of evidence).’
- d. *li-chi Masika ka-chi-e Nairobi*  
 5EM-COMP 1Masika 1SM-go-FV Nairobi  
 ‘Masika went to Nairobi (according to a specific piece of evidence).’
- e. *e-chi Masika ka-chi-e Nairobi*  
 9EM-COMP 1Masika 1SM-go-FV Nairobi  
 ‘Masika went to Nairobi (according to a non-specific piece of evidence).’

Again, the choice of clausal-EM generally replicates what was observed for nominal-EM and verbal-EM. The use of an unembedded complementizer serves to distance the speaker from the asserted proposition, translating roughly as “according to X.” And again, clausal-EM reflects a quantificational scale. *Vichi* indicates that the speaker has a lot of information to support the proposition. *Kachi* indicates that the speaker has less information. *Lichi* indicates that the speaker is using a particular, specific piece of information. *Echi* is the most neutral. Again, class 9 *echi* is rarely offered, and is only used when the speaker wants to hide or obfuscate somewhat.<sup>47</sup>

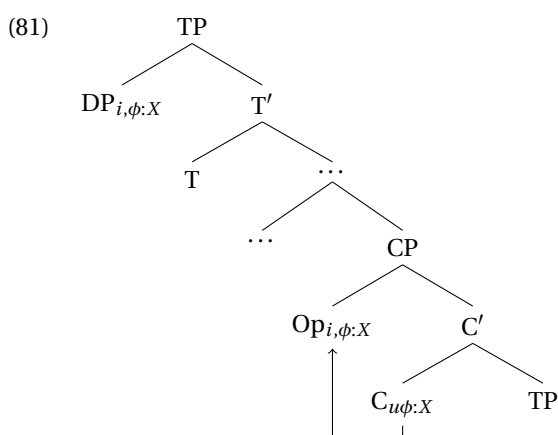
### 3.3.1 Analysis of clausal-EM

I adopt wholesale the ideas in Diercks’s (2013) analysis of the agreeing complementizer in the closely related Lubukusu. Diercks proposes to analyze the agreeing complementizer as an instance of C agreeing with an “anaphoric operator” in spec-CP (adopting ideas from Safir 2004b).<sup>48</sup>

<sup>47</sup> It should be noted that, unlike nominal-EM and verbal-EM, clausal-EM tends not to indicate a group of individuals as an information perspective. Instead, when used, they almost always refer to some non-human information perspective. This difference between nominal-/verbal- and clausal-EM is likely due to the fact that non-agreeing complementizers are solely used to reflect “hearsay” evidence. *Mbo* indicates that one person told the speaker; *vachi* that the speaker has heard from multiple sources. Thus, I believe it likely that the unavailability of the group of individuals readings may be the result of a blocking effect. However, I will not be able to provide an in-depth analysis of unembedded complementizers. I refer the reader to the many functions attributed to unembedded complementizers cross-linguistically documented in Boye and Kehayov (2016); Evans and Watanabe (2016). I am unaware of any work that has systematically looked at this issue in a Bantu language outside of the discussions in Kawasha (2006, 2007), Güldemann (2008), and Devos and Bostoen (2012).

<sup>48</sup> Indeed, *-chi* and Lubukusu’s agreeing complementizer *-li* are in fact cognate morphemes.





On Diercks’ analysis, the operator is a *subject oriented anaphor*. It obligatorily is imbued with the  $\phi$ -features of the subject of the embedding verb. Crucially, Diercks does not model this as a case of Agree, where Op gets its features by entering into an (upwards) Agree-relationship with the subject. Instead, he treats this as a case of LF/covert movement plus checking. Op, inherently imbued with features, covertly moves to T to check its features because anaphors must be in a local relationship with their antecedents (Safir, 2004b). Therefore, though the anaphoric operator always tracks the subject of the matrix clause, the operator is *syntactically* independent of this argument. Op gets its reference, and hence  $\phi$ -features, through discourse/pragmatic factors.<sup>49</sup> Indeed, I take the availability of an unembedded agreeing complementizer as evidence of this syntactic independence. The data in (80) simply illustrate that the chosen operator does not need a syntactic antecedent. It can be fixed to a salient discourse entity, like the speaker or hearer, or it can track one of the salient groups picked out by the perspectival operators.

The evidence from predicative propositional nouns with nonthematic subjects in (78a) is additional evidence that Op is syntactically independent of the subject. Clausal-EM is available on an embedded complementizer, even when verbal-EM is banned in the higher clause. And crucially, clausal-EM can appear even when there is no verbal-EM on the higher predicate. Thus, clausal-EM must not be de-

<sup>49</sup> Diercks et al. (2020) takes a more sophisticated view of the syntactic relationship between the subject and anaphor. In the updated analysis, the agreeing complementizer is imbued with features which are “interpretable,” but “unvalued” (in the sense of Pesetsky and Torrego 2007). C moves in the syntax to a position c-commanding the subject in spec-*v*P, and Agree occurs downwards. See also Carstens (2016) for a similar idea. The precise derivation of complementizer agreement is not crucial for the analysis here, as I ultimately conclude that clausal-EM cannot stem from C agreeing with a non-local argument in any case. However, I also note that the data in (76) are problematic for the accounts in Diercks et al. (2020); Carstens (2016) because they propose that agreement on complementizers results from head-movement of C (or specifically, Force<sup>0</sup>) into the matrix clause, where it c-commands the subject. Examples with agreeing complementizers as complements to NP are problematic because it requires head-movement out of the DP into the main clause, violating the Head-Movement Constraint as well as the Complex-NP constraint. I therefore find Dierck’s original ideas more convincing. The solution proposed in Carstens (2016, §3.6.5) assumes that the D+ $\phi$ +N complex in Bantu is rendered inactive after case valuation, and thus transparent to movement, though this incorrectly predicts (at least for Njala East) that the language does not have Complex-NP islands.

pendent on verbal-EM. Indeed, the cases where both verbal-EM and clausal-EM both appear and obligatorily match provide support for the analysis of verbal-EM presented in subsection 3.1.1. T's  $\phi$ -probe looks under c-command for an active goal, and agrees with the most local argument, whether a DP or Op. Thus, verbal-EM and a complementizer inflected with EM must match.

In summary, the existence of a perspectival operator in the CP domain is supported by converging evidence.

#### 4 Discussion: comparing DP and CP

While the distribution and analysis of epistemic marking in Nyala East illustrates the parallelism between the CP and DP domains, I wish to emphasize that the domains are not homomorphic. The discussion in subsection 3.2 illustrates that we must maintain at minimum a categorial distinction between CP and DP. An additional way in which these domains are distinct is that the DP perspectival operator is not subject-oriented. Unlike with clausal-EM, nominal-EM does not have a requirement to match a local subject.

I suggest that this difference reflects a selectional distinction—although I concede that this is not an informative answer. The agreeing complementizer selects for a “bound” operator, whose features are (semantically) fixed to match the subject, when there is a local superordinate subject. In the absence of such a subject, one of the four operators in (30) is introduced.<sup>50</sup> The agreeing determiner has stricter requirements: it can only merge one of the four operators proposed above. Ultimately, it may be that the difference relates to the different historical paths that the agreeing complementizer and the agreeing determiner took to their present synchronic status. The complementizer *-chi* derives from the proto-Bantu verb *\*-ti* ‘say,’ and so possibly has “vestigial” verbal properties, like subject agreement, which is inherently non-local. That is, the agreeing complementizer is already “programmed” to track a non-local argument.<sup>51</sup> The agreeing determiner does not derive from a verbal predicate, and so it is more restricted in what it agrees with. That is, it has only recently developed the ability to agree, and has not (yet) extended this ability to be non-local agreement. And indeed,  $D_{u\phi:X}$  is generally more restricted since it can only appear on a subset of nouns: judge-dependent nouns.<sup>52</sup>

<sup>50</sup> This is not as arbitrary as it may first seem. On the analysis worked out in Diercks (2013), the operator in the lower clause undergoes a matching operation with the higher subject. If the features do not match, the derivation crashes. Thus, merging one of the operators in (30) would ultimately fail if the subject's  $\phi$ -features do not match.

<sup>51</sup> It is worth noting that Güldemann (2008, §5.1.3.3) suggests that proto-Bantu *\*-ti* did not originally have a verbal function, but instead started as a determiner, which “acquired” verbal functions, and became a true verb in many Bantu languages, through its use as a complementizer.

<sup>52</sup> One way of understanding the difference between D and C may be tied to how each functional category “encodes” the associated  $\phi$ -features. Truly nominal categories are inherently imbued with  $\phi$ -features (say by selecting for a  $\phi$  head). I have argued above though that C is not inherently  $\phi$ -bearing, rather, it “has”  $\phi$ -features only in that it merges an operator which bears  $\phi$ -features. If this is on the right track, we can say, following the line of argumentation in Halpert (2019), that the well-noted gray area between CPs and DPs may be in how inherent the associated  $\phi$ -features are. DPs are inherent  $\phi$ -

In addition to comparing DP and CP in Nyala East, it is also worth comparing the two perspectival operators housed in each domain. They each have distinct distributions and interactions with their syntactic and semantic environment. The differences are summarized in section 4.

|                            | DP-Op | CP-Op |
|----------------------------|-------|-------|
| EM operators               | yes   | yes   |
| Subject-orientation        | no    | yes   |
| Speaker/hearer-orientation | (yes) | yes   |
| Vacuous binding            | no    | yes?  |

**Table 3** Comparison of perspectival operators in DP and CP

The core similarity is that both CP and DP permit the four EM operators to be introduced. Note that in both cases, the  $\phi$ -features of the operators project. DPs act morphosyntactically as if they are in the noun class of the relevant EM. This is descriptively true with clauses as well, shown by the fact that verbal-EM and clausal-EM must match when they appear together. I note briefly an additional similarity, not included in section 4. In the analysis above, we find that both D and C require probe-relativization, unlike T. D and C's  $\phi$ -probes may only target logophoric operators, restricting which elements can be agreed with. In contrast, T's  $\phi$ -probe is capable of targeting any element with active  $\phi$ -features.

Perhaps the most significant difference between the two operators is that the operator in CP *must* be locally “bound” when introducing an embedded clause under a predicate that selects for a thematic subject. (This is a consequence of Diercks’s 2013 feature matching analysis—though note that this is not, technically, binding.) As noted above, I attribute this to a selectional fact: D only selects for one of the four “epistemic” operators; C is liberal in allowing an operator with any set of  $\phi$ -features, granting that they match the superordinate subject. Again, I suggest above that this may ultimately have a diachronic explanation.

While both DPs and CPs may be speaker or hearer oriented, the behavior of such orientation is not consistent across categories. CPs can be speaker-oriented when the agreeing complementizer reflects 1st or 2nd person morphology, both embedded and unembedded. Thus, with CPs, speaker- and hearer-orientation is grammaticalized through the agreement reflected on C.<sup>53</sup> This is in contrast to the speaker-/hearer-orientation of DPs, which is purely pragmatically calculated and is not grammaticalized. On the analysis above, this orientation is simply a result of the fact that the discourse participants are typically the most salient individuals.

feature-bearers. CPs are more or less “noun-y” depending on how “inherent” the associated  $\phi$ -features are: when they are directly selected, CPs are functionally nominal (as in Ndebele). Nyala East’s CPs are not DPs because they only “indirectly” select for  $\phi$ -features. Thanks to an anonymous reviewer for this suggestion; it is certainly worth pursuing in future work.

<sup>53</sup> It is possible to analyze the unembedded agreeing complementizers in this context as a form of embedding under some higher ASSERT or QUESTION operator, thereby subsuming these cases as a special case of “subject” orientation.

But unlike with CPs, DPs never reflect the  $\phi$ -features of 1st/2nd person. Seen in this light, the difference in speaker-/hearer-orientation between DPs and CPs is in fact exactly the same as the subject-orientation difference: the CP case is more liberal in allowing the operator to reflect any set of  $\phi$ -features, while DP may only reflect one of four operators whose reference is established via discourse.

Finally, we find a clear difference in the distribution of Op in DPs and CPs. While CPs freely permit any of the EM (that is, any clause can be embedded under verbal- and clausal-EM), nominal-EM is restricted only to the nouns that are inherently judge-dependent. Above I explained this by appealing to a ban on vacuous quantification: Op can be merged in DP just in case it binds some logophoric element. It is unclear whether this same explanation extends to the clausal cases. The motivation for Op's distribution in DP was based on the idea that only some nouns are inherently "perspectivizable." If we apply this same reasoning to the clausal cases, it is possible to claim that the ability for Op to occur apparently freely in CP is because all propositions are also inherently perspectivizable, i.e., are able to be known/believed relative to an individual. If this is on the right track, then in fact there is no difference between these two operators in this regard.

I emphasize that I do not claim that D and C have the same denotation, either. While I have proposed an analysis of the augment in Nyala East as a parameterized choice function, I remain agnostic as to whether this is the correct analysis of C as well.<sup>54</sup> This is an empirical question, which I cannot fully address here. The answer to this question hinges in part on determining the semantic type of clauses in Nyala East, a topic which has seen a large amount of recent investigation outside of Bantu languages. (See Djärv 2019 for a recent theoretical overview and Halpert 2019 for Bantu-specific discussion.) However, as I have shown in subsection 3.2, clauses are not *syntactically* DPs, and so we expect that they should not have the meaning of DPs either.

Despite these differences, the similarities between nominal- and clausal-EM (and verbal-EM) cannot be overlooked. It is surely not coincidental that both domains utilize the same markers to reflect similar epistemic meanings. It is these shared characteristics that the account above ultimately seeks to unify by proposing a perspectival operator that is shared across these domains. The data and analysis above capitalize on the idea that some nouns are inherently evaluated relative to the beliefs/epistemic state of an individual, and that propositions are as well. The former is a relatively novel, but well-motivated observation, while the latter is an observation that goes back decades. Nyala East's epistemic marking is sensitive to the shared semantic commonality, independent of the category of the phrases.

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<sup>54</sup> See the ideas in Gluckman and Bowler 2016b for an analysis of verbal-EM in the related Logoori. I note that while in Gluckman and Bowler (2016b) we do adopt a choice functional analysis of Logoori, the details of that analysis are extremely different from what is proposed here. Again, I will leave it for future work whether the two analyses can be connected.

## 5 Conclusion

In sum, all cases of EM are derived by functional elements reflecting agreement with a perspectival operator—thus they all morphologically look the same. Perspectival operators can be merged in two loci in Nyala East: spec-CP and spec-DP. Nominal-EM is the reflex of a determiner agreeing with Op in spec-DP. Clausal-EM is the reflex of the complementizer agreeing with Op in spec-CP. Verbal-EM reflects a different relationship: it is the reflex of T agreeing with Op in spec-CP of an embedded clause.

The analysis provides explicit evidence for an inherent link between the categories of DP and CP, a link that has a long history in the syntactic literature, starting from Rosenbaum (1967) and more recently pursued in Kastner (2015); Pietraszko (2019). Nyala East demonstrates that the link extends to semantics as well, even when CPs and DPs remain categorially distinct.

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