

Complementizers as reportative markers



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1 Overview

- ☺ A diverse set of languages have a complementizer-like elements that can be used without an embedding verb in speech report constructions.
- ☺ When described in previous work, these constructions are dismissed as verbal embedding, or they are analyzed as reportative markers.
 - ↔ We argue they can't be verbal, as they lack clausal structure.
 - ↔ Reportative marker is probably accurate, probably not syntactically, semantically very descriptive or explanatory.

Proposal: We argue for a unified analysis of complementizers in embedded and unembedded reportative contexts, following the semantics for complementizers proposed Kratzer 2006, a.o.

An unresolved problem for us: a Kratzer type-system lets us use a complementizer to relate a proposition to an attitude holder; the specification of the particular attitude (speech vs. for example, want, hope, believe, etc.) still needs to come from somewhere.

2 Data

- ☺ Tigrinya (1), Ewe (2), and Malayalam (3) all feature complementizer-like elements that with speech-report meanings in matrix clauses:

(1) Tigrinya

- a. [hiwät ane näti mäṣṣaf ambib-e il-a] ti-ammin
Hiwet(F) 1S DET book read-1S COMP-3F 3F-believe

Hiwet_i believes that I_{speaker} read the book.

Hiwet_i believes she_i read the book.

- b. [hiwät ane näti mäşḥaf ambib-e il-a]
 Hiwet(F) 1S DET book read-1S COMP-3F

“Hiwet said that I_{speaker} read the book”

“Hiwet_i said that she_i read the book”

(2) **Ewe**

- a. john bù [be yè nya nu]
 John(M) think COMP LOG know thing

“John thinks that he is smart”

- b. john [be yè nya nu]
 John(M) COMP LOG know thing

“John says that he is smart”

(3) **Malayalam**

- a. [prime minister varunnu ennu] john paranju
 prime minister coming COMP John said

“John said that the Prime Minister is coming”

- b. [prime minister varunnu ennu]
 prime minister coming COMP

“Someone said that the Prime Minister is coming”

☺ **There are several possibilities for analyzing the structure of these constructions:**

↔↔↔ complementizer doubles as a verb of saying (possible ties to diachronic facts)

↔↔↔ Null/elided embedding clause

↔↔↔ complementizer and reportative marker are homophonous

↔↔↔ **embedded and unembedded complementizers are the same morpheme**

2.1 Morphological evidence against the complementizer-as-verb hypothesis

If these complementizers really have a second life as verbs, they should be able to participate in all of the normal morphological processes available to verbs; this prediction is not borne out.

In Ewe: verbs can take certain kinds of morphology that is unavailable for the complementizer.

☹ clitics can attach to verbs but not *be*, (4):

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

- a. **ma-gblo** *be Kofi le afe me*
 PRO/T-say that Kofi be home in
 “I will say that Kofi is at home”
- b. ***ma-be** *Kofi le afe me*
 PRO/T-that Kofi be home in
 INT: “I will say that Kofi is at home”

☹ preverbs can attach to verbs, but not to *be*, (5):

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

- a. **me-ga-gblo** *be Kofi le afe me*
 PRO-P-say that Kofi be home in
 “I said again that Kofi is at home”
- b. ***me-ga-be** *Kofi le afe me*
 PRO-P-that Kofi be home in
 INT: “I said again that Kofi is at home”

☹ aspect-marking reduplication can apply to verbs, but not to *be*, (5):

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

- a. *me* **gbɔ-bgɔ-m** *be Kofi le afe me*
 PRO RED-say-A that Kofi be home at
 “I am saying that Kofi is at home”
- b. **me* **be-be-m** *Kofi le afe me*
 PRO RED-that-A be home at
 “INT: I am saying that Kofi is at home”

☺ Ewe *be* does not behave like a verb with respect to morphology

Likewise, Tigrinya *il-* doesn’t allow verbal morphology, show in (7) for negation:

(7) **Tigrinya *il-* does not allow negation**

- a. mahari almaz səḥsəḥ-a il-a əj-bələ-n
 Mahari(M) Almaz(F) dance-3F COMP-3S NEG-say-NEG

“Mahari didn’t say that Almaz danced”

- b. *mahari almaz səḥsəḥ-a əj-il-a-n
 Mahari(M) Almaz(F) dance-3F NEG-COMP-3S-NEG

INT: “Mahari didn’t say that Almaz danced”

Morphologically, these complementizers don’t behave like verbs

2.2 Syntactic evidence against a null/elided embedding verb

Evidence that the structure normally associated with a matrix clause is absent comes from adverbial modification and wh- questions.

☹ In Ewe: adverbial modification of the saying event is impossible without a matrix verb, (8).

(8) **Ewe *be* can’t be modified by adverbs**

- a. john gblɔ kaba be yè nya nu
 John say fast that LOG know thing

“John said quickly that he is smart”

- b. john (*kaba) be (*kaba) yè nya nu
 John (*quickly) that (*quickly) LOG know thing

INT: “John said quickly that he is smart”

In Tigrinya: adverbial modification of the saying event is impossible without a matrix verb, (9), (10).

(9) **Adverbial modification of Tigrinya *il-* is impossible**

- a. naomi aman mänbär gäziʔ-u il-a käs täzarib-a
 Naomi(F) Aman(M) chair buy-3M il-3F quickly say-3F

“Naomi said quickly that Aman bought a chair.”

- b. (*käs) naomi aman mänbär gäziʔ-u (*käs) il-a (*käs)
 (*quickly) Naomi(F) Aman(M) chair buy-3M (*quickly) il-3F (*quickly)

“Naomi said (*quickly) that Aman bought a chair.”

(10) **adverbial modification of Tigrinya *il-* is impossible**

- a. *lomi naomi aman timali mänbär gäzi?-u il-a ti-ammin*
 today Naomi(F) Aman(M) yesterday chair bought-3M il-3F 3F-believe
 ‘Today Naomi believes that Aman bought a chair yesterday.’
- b. **lomi naomi aman timali mänbär gäzi?-u il-a*
 today Naomi(F) Aman(M) yesterday chair buy-3M il-3F
 INT: ‘Today Naomi said that Aman bought a chair yesterday.’

In Malayalam, *ennu* can also not be modified by adverbs, (12):

- (11) *John [prime minister varunnu ennu] veegam paranju*
 John prime minister coming C quickly said
 ‘John quickly said that the prime minister is coming’

(12) **Malayalam *ennu* cannot be modified by adverbs**

- a. **[prime minister varunnu ennu] veegam*
 prime minister coming C quickly
 INT: ‘Someone said quickly that the Prime Minister is coming’
- b. **veegam [prime minister varunnu ennu]*
 quickly prime minister coming C
 INT: ‘Someone said quickly that the prime minister is coming’

Likewise, *wh-* questions in Malayalam can only target the saying event if there is a real verb of saying present:

(13) **Malayalam *wh-* questions**

- a. *prime minister eppol varunnu?*
 Prime Minister when coming?
 ‘When is the prime minister coming?’
- b. *eppol aane john [prime minister varunnu ennu parajathe]*
 when COP John Prime Minister coming C say-NOMNL
 ‘When did John say that the Prime Minister is coming?’ (= time of saying)
- c. *prime minister eppol varunnu ennu annu john paranjathe?*
 Prime Minister when coming C COP John said-NOMNL
 ‘When did John say that the Prime Minister is coming?’ (= time of coming)

(14) **Wh- questions can't target Malayalam *ennu***

- a. *prime minister eppol varunnu ennu?*
Prime Minister when coming C?

“When did someone say the prime minister is coming?” (= time of coming)

- b. **prime minister varunnu eppol ennu?*
Prime minister coming when C

INT: “When did someone say that the prime minister is coming?” (= time of saying)

- c. **prime minister varunnu ennu eppol?*
Prime Minister coming C when?

INT: “When did someone say that the prime minister is coming?” (= time of saying)

- d. **eppol aane prime minister varrunu ennu?*
when COP Prime Minister coming C?

INT: “When did someone say that the prime minister is coming?” (= time of saying)

☺ An analysis where the attitude verb is elided, null, or even being realized by the complementizer capitalizes on the assumption that covertly an attitude embedding predicate is present

☺ This seems to be false, based on adverb and question data

2.3 Evidence against a complementizer/reportative marker homophony

Could it be that the complementizers and reportative markers are actually distinct morphemes?

☹ No: these complementizers condition indexical shift (in Tigrinya) and logophoricity (in Ewe); a homophony story misses these facts.

☺ The presence of *il-* conditions the availability of indexical shift - other types of finite clauses disallow shifted indexicals (15).

- (15) a. *hiwät issa näti mäṣḥaf kim-zi-mbäb-ät ti-ḡammīn*
Hiwet(F) 3F DET book COMP-REL-read-3F 3F-believe

‘Hiwet_i believes that she_{i/j} read the book’

- b. *hiwət [ane nəti mətʰəf ambib-e] il-a*
Hiwet(F) [1S DET book read-1S il-3F

Hiwet_i thinks/said that I_i read the book. (shifted)

Hiwet_i thinks/said that I_{speaker} read the book (unshifted)

In Ewe, logophors are possible only if *be* is present (16-17).

(16) *Kofi_i se Koku wò-nɔ e_i dzu-m*
 Kofi hear Koku PRO-be PRO insult-A
 “Kofi_i heard Koku insulting him_i”

(17) *Ama_i se be yè-xo nunana*
 Ama heard that log-receive gift
 “Ama heard that she received a gift”

- ☺ positing a separate reportative morpheme loses the generalization that both unembedded and embedded instance of these morphemes introduce logophoricity/indexicality
- ☺ positing that Malayalam, which lacks these phenomena, has a separate reportative morpheme misses an important cross-linguistic generalization

3 Semantics

3.1 Reportative complementizers with author arguments

Normally, modal quantification is integrated into the attitude verb:

(18) $\llbracket \text{believe} \rrbracket = \lambda p \lambda x \lambda w . \forall w' [Dox_{x,w}(w') \rightarrow p(w')]$

Unclear what complementizers do; maybe mere identity functions.

But we (1) don't always have attitude verbs here, and (2) when we don't, (some kind of) attitudinal meaning is still present.

We need an analysis that can:

- ☺ attribute quantification over worlds to complementizers
- ☺ allow for them to be embedded or unembedded
- ☺ license indexical shift/logophoricity without relying on an attitude verb
- ☺ take an overt attitude holder argument
- ☺ **contribute a speech report meaning, as opposed to other possible attitudes**

3.2 Kratzer (2006) and etc.

Kratzer 2006 argues for a decompositional view of attitude verbs, where the complementizer contributes quantification over worlds.

She wants to explain this:

- (19) a. John believes that Orcutt is a spy.
 b. John believes the notion that Orcutt is a spy.

Attitude verbs have DP objects. Complementizers take those arguments as restrictions. When no DP argument, complementizer composes with verb via Restrict (Chung & Ladusaw 2004), and existentially binds off the content nominal.

- (20) a. $\llbracket \text{believe} \rrbracket = \lambda x \lambda s. \text{believe}(x)(s)$
 b. $\llbracket \text{that} \rrbracket = \lambda p \lambda x. \forall w' [\text{compatible}(x)(w') \rightarrow p(w')]$
 c. $\llbracket \text{believe that } \phi \rrbracket = \lambda x \lambda s. \text{believe}(x)(s) \wedge \forall w' [\text{compatible}(x)(w') \rightarrow \phi(w')]$

Note that the attitude verb and the content nominal (in tandem or on their own) specify the accessibility relation ("compatible"). Thus, *believe* above forces the compatibility relation to be interpreted as a set of doxastic alternatives.

Her logophoric complementizer gets us closer to the logophoric/indexical shift (we aren't concerned about the details here):

- (21) $\llbracket \text{that} \rrbracket = \lambda y \lambda e \lambda w. \exists x [x = \text{origo}(z)(e)(w) \wedge \forall x' \forall w' [\text{Acc}_y(x, w)(x', w') \rightarrow \llbracket \alpha \rrbracket^{g, c, x'}(w')]]$

In Kratzer's (2006), we get several desirable results:

- ☺ quantification over worlds is located in complementizer, not attitude verb
- ☺ embeddable
- ☺ requires that there be some origo who can identify themselves in w' to license for logophors
- ☺ A problem: the origo argument is already existentially bound
- ☺ no clear way to account for indexical shift facts

Sundaesan 2018, in the spirit of Schlenker (1999, 2003) a.o., accounts for indexical shift via a context shifting operator. She locates quantification over contexts in the complementizer, where contexts are ordered tuples $\langle \text{World, Author, Addressee, Location} \rangle$. Thus intensional quantification is a kind of indexical shift:

- (22) a. $\llbracket \mathcal{L}_{\text{World}} \rrbracket = \lambda p \lambda x \forall c' \in \text{World}_{x_s} \rightarrow p(c')$, where $\text{Worlds}_{x_s} =_{def} \{c': \text{it is compatible with } x, \text{ the content of the attitude that Author}(s) \text{ holds in World}(s) \text{ for World}(s) \text{ to be World}(c')\}$
 b. $\llbracket \mathcal{L}_{\text{Author}} \rrbracket = \lambda p \lambda x \forall c' \in \text{Author}_{x_s} \rightarrow p(c')$, where $\text{Author}_{x_s} =_{def} \{c': \text{it is compatible with } x, \text{ the content of the attitude that Author}(s) \text{ holds in } c', \text{ for World}(s) \text{ to be World}(c') \text{ and Author}(s) \text{ to be Author}(c') \text{ in World}(c')\}$

Indexicals are then interpreted with respect to the shifted context:

- (23) $\llbracket \text{I} \rrbracket^{c', g} = \text{Author}(c')$

- ☺ We still need to be able to add an attitude holder in languages that allow it
- ☺ for this, we add an *Author* argument (similar, in a way, to *origo* above) that can either be saturated or existentially bound.

3.3 Our proposal

These matrix complementizers are basically Kratzerian complementizers with an argument:

(24) $\llbracket \text{that}_{\text{Q}} \rrbracket = \lambda p \lambda x \lambda s. \text{Author}(x)(s) \wedge \forall c' \in \text{Compatible}(s) \rightarrow p(c')$, where $\text{Author} =_{def}$

So an LF for TKTK will look like TKTK, and an LF for TKTK will look like TKTK:

- (25) a. $\exists s. \text{Author}(\text{Aman})(s) \wedge \forall c' \in \text{Compatible}(s) \rightarrow \text{Naomi bought a chair}(c')$
 b. $\exists s. \text{Agent}(\text{Aman})(s) \wedge \text{say}(s) \wedge \text{Author}(\text{Aman})(s) \wedge \forall c' \in \text{Compatible}(s) \rightarrow \text{Naomi bought a chair}(c')$

Note that in the embedded case, the attitude holder is "doubled up". This is, in fact, welcome:

- (26) a. kidane [issu [ane nəfoŋ ij-e] il-u] ji-ŋammin
 Kidane(M) 3M 1S smart.M COP-1S il-3M 3M-believes

'Kidane_i believes that he_i is smart'

- b. *[kidane issu [ane nəfoŋ ij-e] il-u]
 Kidane(M) 3M 3F smart.M COP-1S il-3M

INTENDED: 'Kidane says that he is smart'

- c. [kidane [ane nəfoŋ ij-e] il-u]
 Kidane(M) 1S smart.M COP-1S il-3M

'Kidane says that he is smart'

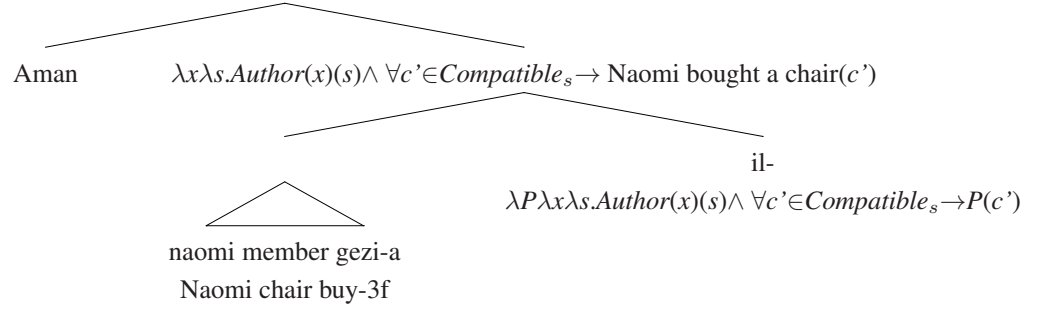
An open problem: How do we get from this unspecified compatibility relation to a speech report?

- ☺ In absence of an attitude verb or content nominal, it's not entirely clear what this relation means.
- ☺ We could maybe posit that there is some covert operator that contributes *say* meaning, but this seems to miss the generalization. Also, why *say* and not *believe*, *hope*, *dream*, etc.?
- ☺ Another way: **pragmatic**.
- ☺ It's likely the attitude we best have access to; we can't peer into someone's head and retrieve beliefs, hopes, etc.

- (27) a. aman naomi mänber gäzi?-a il-u
 Aman Naomi chair bought-3f il-3m

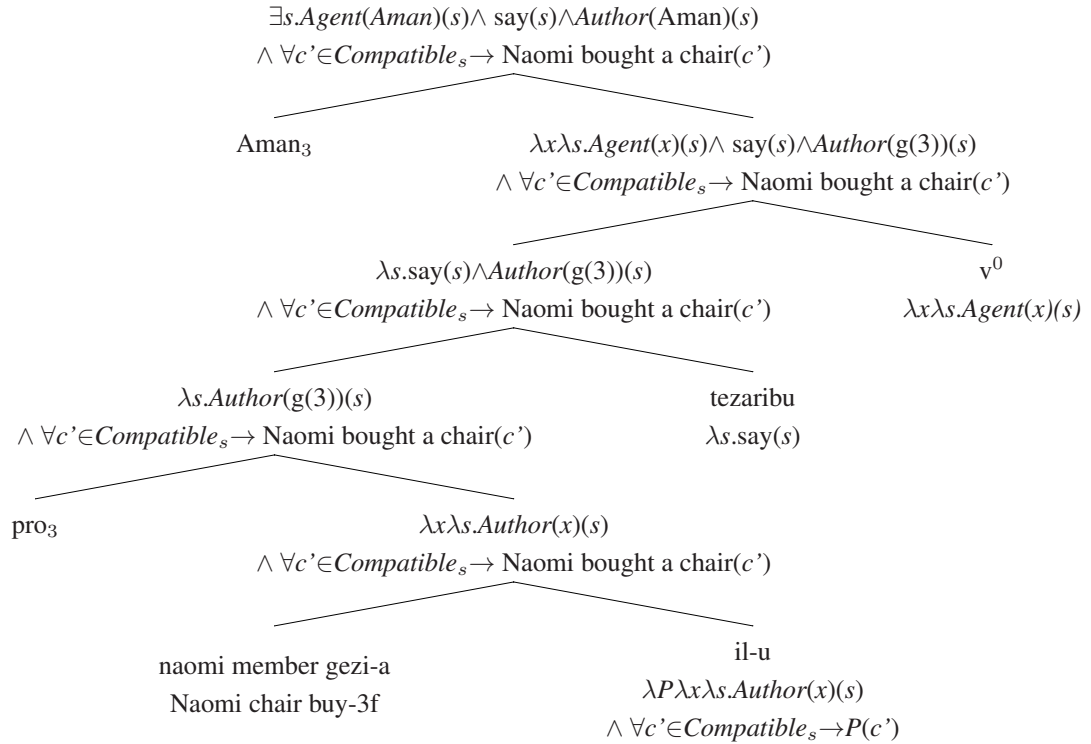
"Aman said Naomi bought a chair"

b. $\exists s. Author(Aman)(s) \wedge \forall c' \in Compatible_s \rightarrow Naomi \text{ bought a chair}(c')$



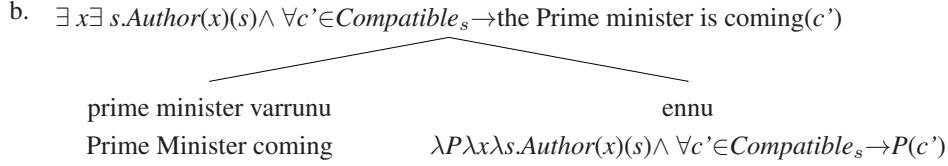
(28) *aman naomi member gezi-a il-u tezarib-u*
 Aman(M Naomi(F) chair buy-3f C-3m say-3m

“Aman said that Naomi bought a chair”

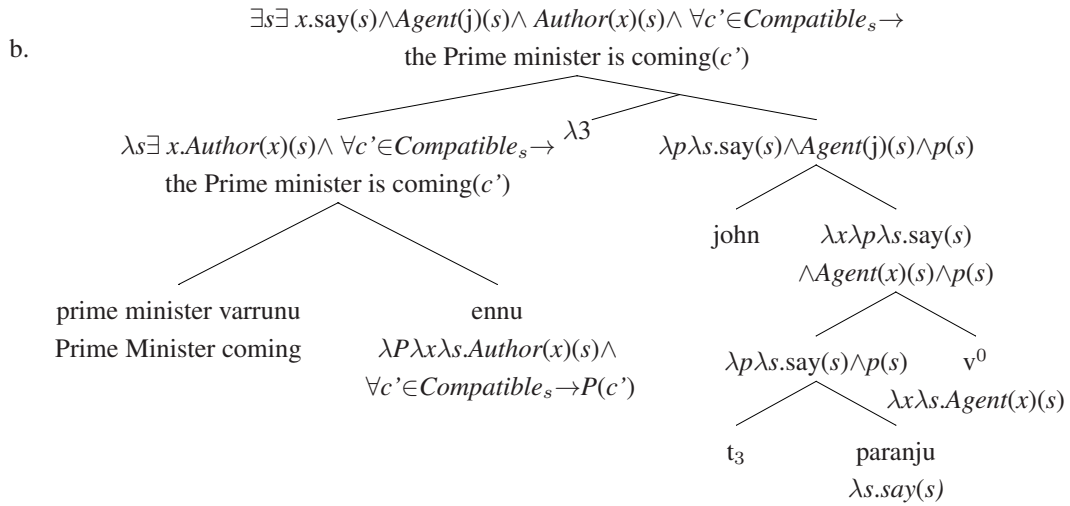


3.4 Reportative complementizers without author arguments

- (28) a. *prime minister varunnu ennu*
 prime minister coming c
 “Someone said the prime minister is coming”



- (29) a. *prime minister varunnu ennu john paranju*
 prime minister coming C john say
 “John said the prime minister is coming”



4 Verba decendi-to-complementizer shift

Our analysis provides a first step for understanding a common historical change: Complementizers are often derived from verbs of saying (true for all of the languages discussed above, and in many others).

- ☺ This diachronic shift is less an explanation for the synchronic data, as a phenomenon that in and of itself wants an explanation:

➡ Why do verbs meaning ‘say’ become complementizers but not other attitude verbs, e.g., ‘believe’, ‘know’, etc.?

- ☺ A crucial fact: verbs of saying are most likely to embed logophoric or shifted pronouns (Deal 2017 argues for the following implicational hierarchy of indexical shift embedding verbs: Speech >> Thought >> Knowledge)
- ☺ If logophoricity and indexical shift are licensed by operators in the left periphery, verbs of saying are mostly likely to select these licensing operators.
- ☺ It's possible that the verb of saying to complementizer shift is a case of reanalysis: the verb of saying is reanalyzed as the operator itself, and can then be embedded under other attitude verbs.