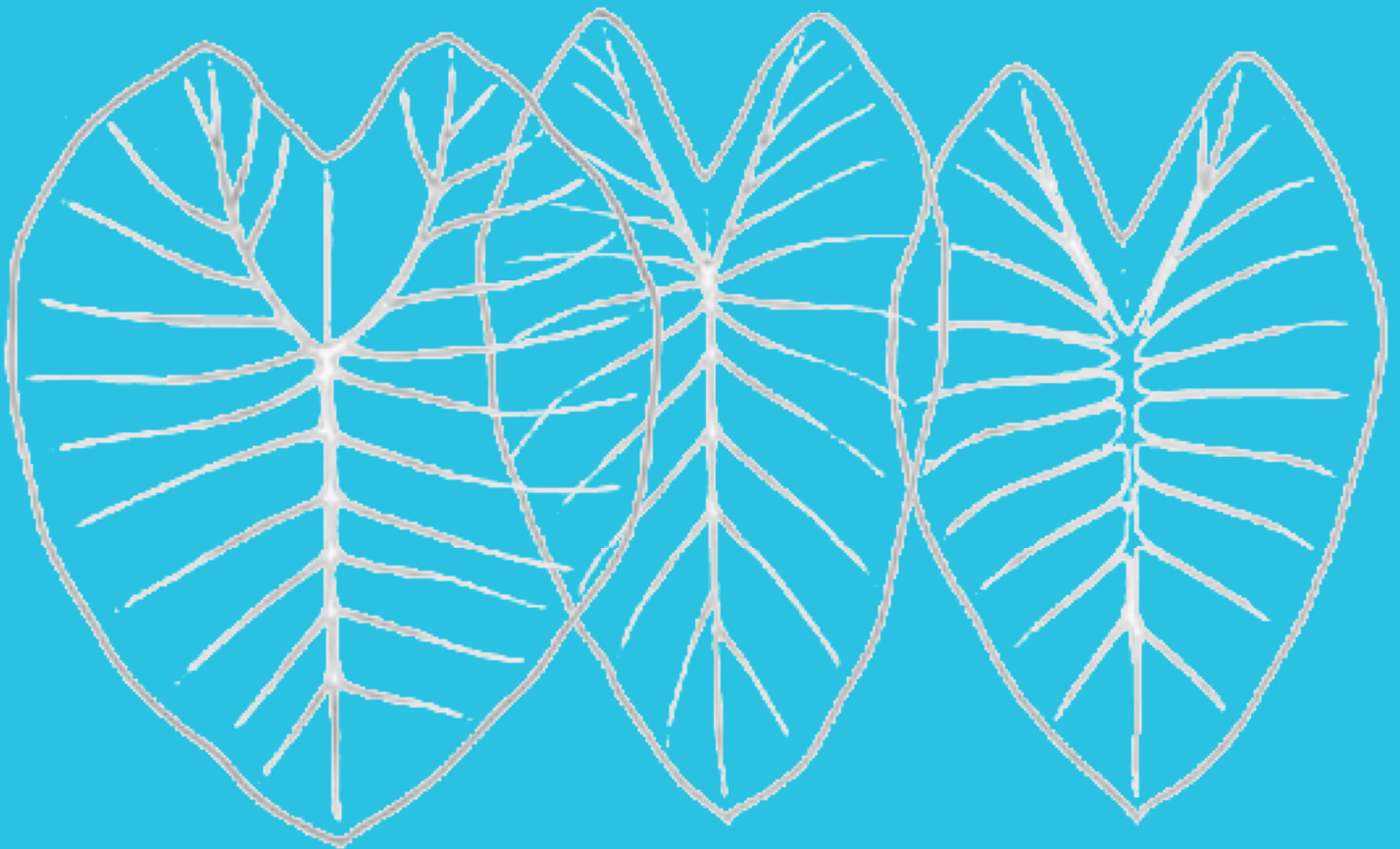# Proceedings of TripleA 5

Fieldwork Perspectives on the
Semantics of African, Asian and Austronesian Languages

Ed. by M. Ryan Bochnak, Miriam Butt,
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How to be an embedded clause: *say* complementizers in Bantu[1]

Claire Halpert — University of Minnesota

Abstract. Recent work on a number of Bantu languages has given us new information on the morphosyntax of finite complement clauses in the Bantu family, revealing a rich picture of morphologically complex complementizers (e.g. Diercks 2013, Baker et al 2012, Letsholo and Safir 2017, Pietraszko 2017, Halpert 2018). In this paper, I survey some of this evidence, focusing in particular on complementizers that are built out of *say* verbs. I draw from my own fieldwork on Zulu to show that even when complementizers have a common lexical base, their behavior can vary widely depending on the particular morphological makeup of the complementizer. Comparing Zulu complementizers and those found in some other Bantu languages, we find support for recent semantic approaches to finite complement clauses and can begin to refine their ideas about which syntactic properties correspond to particular embedding strategies (e.g. Elliott 2016, Kratzer 2015, 2016; Moulton 2009, 2015).

1 Introduction

There is a large body of research that investigates the syntactic and semantic status of finite embedded clauses (FCCs). Much of this research has taken English as a starting point, focusing on apparent puzzles such as the distributional puzzle illustrated below: in (1), a CP argument of a verb has the same distribution as a DP argument, while in (2), the distribution of CP and DP arguments of a noun diverge:

(1)   a. I know *the story*.

       b. I know *that dinosaurs are extinct.*

(2)   a. my knowledge *(of) *the story*

       b. my knowledge (*of) *that dinosaurs are extinct*

A common stance on English FCCs (e.g. Stowell, 1981) is that they are less restricted than DPs in their distribution because the do not require syntactic case. This type of view assumes that FCCs, by nature of their category, can combine with their selecting head (a verb, noun, or adjective) without any need to satisfy other syntactic requirements.

Research on a typologically broad range of languages suggests that there is good reason to believe that FCCs in fact have a more complicated structure, involving, for example, relativization (e.g. Aboh, 2010; Caponigro and Polinsky, 2011; Kayne, 2014). Recent research on FCCs in Bantu languages similarly reveals a growing catalog of morphosyntactically complex embedding strategies that vary across languages and across complementizer type in their properties (for example, Baker and Safir, 2012; Diercks, 2013; Halpert, 2015, 2018; Letsholo and Safir, submitted; Pietraszko, to apepar).

This paper focuses on some morphosyntactic properties of Bantu FCCs and illustrates what they can teach us about different means of embedding FCCs. In particular, I investigate complementizers that are built from *say* verbs and show that a fine-grained understanding of their morphological makeup is necessary to account for their syntactic behavior.

1.1 Why *say* complementizers?

The discussion of the morphosyntax of FCCs and their complementizers in this paper is informed by some recent semantic approaches to FCCs.

Moulton (2015) argues that embedded argument CPs are predicates of propositional content, of type *e,st*. Although they appear to be arguments of verbs (and nouns), elements of this type cannot saturate *any* predicates. When they combine with non-verbal predicates (like content nouns), they do so via predicate modification. In order to combine with verbal predicates, he argues, FCCs must undergo a short step of A-movement, leaving behind a trace of type *e* to compose with the verb.

This approach captures some key facts about FCCs in a number of languages: it gives us a way to understand the differences in CP vs. DP distribution shown in (1) and (2); it captures meaning alternations between FCCs and propositional DPs (Elliott, 2016). It also correctly predicts observed opacity effects: the A-movement step required for FCCs to compose with the verb renders them opaque for A-movement (but not for A-bar movement). Finally, this semantically-motivated approach converges with syntactic approaches that treat FCCs in some languages as instances of relativization (see again Aboh, 2010; Caponigro and Polinsky, 2011; Kayne, 2014).

At the same time, we know that not all FCCs across languages show these properties. Moulton (2015) himself notes that in some languages, the picture is notably different: FCCs cannot combine with content nominals, are transparent to A movement, and don't otherwise show evidence of having undergone movement. He concludes that these FCCs might be *in situ saturators*. In other words, they have a semantic type that doesn't require the movement operations described above.

What does it mean to be an in situ saturator? Kratzer (2016) suggests that all FCCs are either *nominal modifiers* (i.e., predicates, along the lines of Moulton above) or *verbal modifiers*. Kratzer points out that *that* clauses sometimes do more work than we usually give them credit for, including: force normally unergative verbs to take speech-report interpretations or contain a source for speech interpretations, as in (3a), and yielding harmonic modal interpretations, as in (3b):

(3) a. She grumbled that you didn't explain very well.
     b. She advised that you should explain better.

Kratzer suggests that the articulated left periphery of the embedded clause can be the source of these properties. In particular, high modality operators in an embedded clause can be the true source of modal meanings (as opposed to, say, an attitude verb) and a *say* verb at the very edge of an embedded clause can create embedded speech reports.

Indeed, as Kratzer (2016) notes, many languages have complementizers built out of a (*say*) verb; Moulton (2016) observes, building on Kratzer, that these "verby" complementizers tend to have the signature of *in situ* saturators. This type of FCC, then, would be a verbal modifier. It can remain in situ because it is *not* attempting to saturate an argument slot of a verb, but rather can combine with the predicate via event identification

These ideas provide a useful compass for an investigation of FCCs in Bantu languages, allowing us to probe for behaviors that are typical of *in situ* and *ex situ* saturators and giving us some expectations for what the morphosyntactic makeup of the clausal periphery (and C in particular) might tell us about the behavior of a particular FCC. As we will see in the following sections, *say*-complementizers in Bantu languages are not a unified set: the presence of a lexical *say* verb in the complementizer alone is not predictive of FCC behavior.

In section 2, I turn to Zulu and Ndebele, which have a *say* complementizer with nominal morphology that has more or less nominal properties. FCCs headed by this complementizer appear to combine with the selecting predicate like a nominal argument would. We can compare this complementizer to a different *say* complementizer in Zulu that has aspect and mood morphology; FCCs headed by this complementizer indeed have more properties that Kratzer attributes to verbal modifers. Lubukusu also has a range of *say* complementizers and shows yet another pattern of morphology involving agreement with the superordinate subject (Baker and Safir, 2012; Diercks, 2013). In section 3, I overview the properties of agreeing C in Lubukusu and sketch a possible approach where these FCCs could be treated as verbal modifiers. The initial empirical picture that emerges from these languages shows that syntacticians and semanticists alike should take seriously the rich morphological makeup of C heads in Bantu languages and that these languages present ideal places to investigate our ideas of how FCCs compose with selecting predicates.

2 Flavors of 'say'-complementizer in Zulu

Zulu has multiple complementizers built out of the verbal root *thi* 'say.' I focus here on two of the most prevalent ones: *ukuthi* and *sengathi*.

The first, *ukuthi*, is a generic complementizer, compatible with essentially every FCC type (declaratives, interrogatives, indicatives, subjunctives). The *uku* prefix is noun class 15/17 morphology (also found on infinitive clauses). The second, *sengathi*, has a more restricted distribution. It is a comparative complementizer, typically appearing with subjunctive or modal embedded clauses, though it can also embed indicatives. Its morphological makeup is slightly more complex: *se* is aspect[2] and *nga* is modality, marking potential 'can/may'.

Does the presence of of the *-thi* 'say' root yield the consequences Kratzer might expect? As we will see in this section, these complementizers have radically different distributions and morphosyntactic properties. At a glance, both show properties of in situ saturators (as expected), but a closer look suggests that we need to treat them differently syntactically (and probably also semantically).

2.1 *Ukuthi*'s noun-y tendencies

The examples in (4) illustrate *ukuthi*'s versatility as an FCC complementizer, introducing complements to speech act verbs (4a), verbs of belief (4b), factive verbs (4c), verbs of desire (4d), raising

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[2]This is perhaps a bit imprecise: *se* is often translated as meaning something like 'now' or 'already' (Doke, 1997 [1927])... in standard use, it appears as a verbal prefix preceding subject agreement, apparently as a contracted form of a verbal auxiliary.

verbs (4e), and interrogative verbs (4f):[3]

(4) *Ukuthi* **as a neutral complementizer**

    a. Ngi-tshel-e   uManqoba ukuthi uZuma ngeke a-khokh-e   lutho
      1SG.S-tell-PFV AUG.1M   C   AUG.1Z never 1SBJV-pay-PFV 14thing
      ' I told Manqoba that Zuma won't pay anything'

    b. Ngi-sola   ukuthi uSipho u-bula-w-e   w-umkhovu
      1SG.S-suspect C   AUG.1S 1S-kill-PASS-PFV COP-AUG.3zombie
      'I suspect that Sipho was killed by a zombie.'[4]

    c. uSandile u-bon-e   ukuthi inkawu   i-ny-ile
      AUG.1S 1S-see-PFV C   AUG.9monkey 9S-shit-PFV
      'Sandile saw that the monkey shit itself.'

    d. ngi-funa   ukuthi uXolani a-win-e   umjaho
      1SG.S-want C   AUG.1X 1SBJV-win-SBJV AUG.3race
      'I want Xolani to win the race.'

    e. ku-bonakala ukuthi uXolani u-win-e   umjaho
      17S-seem   C   AUG.1X 1S-win-PST AUG.3race
      'It seems that Xolani won the race.'

    f. ngi-buza ukuthi u-kuphi
      1SG.S-ask C   1S-15.where
      'I'm asking where he is.'

As we saw at the beginning of this section, *ukuthi* is morphologically complex and contains a plausible nominal prefix. Indeed, *ukuthi* CPs share a number of properties with DPs. In particular, as we'll see in this section, CPs can control phi-agreement under the same conditions as nominals and their distribution and morphological marking mirrors that of nominal arguments.

We saw above that *ukuthi* is composed of noun class 15/17[5] morphology on the verb root *-thi*. As I demonstrate in Halpert (2012, 2015, 2018), *ukuthi* CPs can control class 15/17 agreement on verbs—just like nominals. In Zulu, phi-agreement tracks *v*P-external (or pro-dropped) nominals.[6] Class 15/17 object agreement can appear when an *ukuthi* CP is *v*P-external—there is no expletive object agreement in Zulu, so this must be true agreement with CP:

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[3]Bantu agreement is for noun class. Zulu has 15 of the 22 Bantu noun classes (numbers 1–11, 14–17); even numbers are typically plurals of odd-numbered classes. A nominal agrees if the noun class marked on the noun matches the number of the agreement marker. I mark class 1 subject agreement as 1S, but 1SG.S for 1st person singular, etc.; object agreement is marked similarly with O. Other abbreviations follow the Leipzig Glossing Rules with the addition of the following: ASSOC associative, AUG augment vowel, FV final vowel, PRO pronominal, YA (present tense) disjoint marker.

[4]Zulu zombies are corpses reanimated by practitioners of malicious magic (*abathakathi*) and kept under the control of a particular person. Throughout this handout, solitary zombies are of the Zulu type, while pluralities of zombies are American.

[5]These two classes have merged in modern Zulu.

[6]I use the distribution of the so-called *conjoint/disjoint alternation* to diagnose the right edge of *v*P. A morpheme *ya* predictably appears on present tense verbs when the verb is at the right edge of *v*P; material that follows a *ya*-marked verb is reliably *v*P-external (Halpert, 2015).

(5) ***v*P-external nominal can control phi-agreement**

    a.   ngi-funa *uku-dla*   *vP*]
           1SG-want AUG.15-food

    b.   * ngi-**ku**-funa *ukudla*   *vP*]
           1SG-17O-want AUG.15-food

    c.   ngi-**ya**-**ku**-funa   *vP*] *ukudla*
           1SG-YA-17O-want   AUG.15-food
           'I want food.'

(6) *ukuthi*-**CP can control phi-agreement**

    a.   ngi-funa *ukuthi si-hlul-e*   *imikhovu*   *vP*]
           1SG-want C   1PL.SBJV-defeat-SBJV AUG.4zombie
           'I want us to defeat the zombies.'

    b.   * ngi-**ku**-funa *ukuthi si-hlul-e*   *imikhovu*   *vP*]
           1SG-17O-want C   1PL.SBJV-defeat-SBJV AUG.4zombie

    c.   ngi-**ya**-**ku**-funa   *vP*] *ukuthi si-hlul-e*   *imikhovu*
           1SG-YA-17O-want   C   1PL.SBJV-defeat-SBJV AUG.4zombie
           'I (do) want us to defeat the zombies.'

In terms of FCC distribution, a large number of verbal predicates in Zulu take unmarked *ukuthi* FCCs or nominal complements, just as we see in a language like English:

(7) **Verbal predicate: direct complementation**

    a.   ngi-cabanga [$_{CP}$ *ukuthi* imikhovu   i-fik-ile]
           1SG-think   C   AUG.4zombie 4S-arrive-PFV
           'I think that the zombies have arrived.'

    b.   Cabanga [$_{DP}$ *isu*   so-ku-hlula   imikhovu]!
           think   AUG.5plan 5ASSOC.AUG-15-defeat AUG.4zombie
           'Think of a plan to defeat the zombies!'

Unlike in English, however, when a predicate requires nominal arguments to be marked by an oblique prefix, an *ukuthi* CP complement must be marked by that same prefix. We see this pattern with the oblique/instrumental marker *nga-* in (8) and with comitative *na* in (9):

(8) **Verbal predicate: complements marked by** *nga*

    a.   ngi-phuph-e   [*ngokuthi* imikhovu   i-fik-ile]
           1SG-dream-PST NGA.C   AUG.4zombie 4S-arrive-PFV
           'I dreamed that the zombies came.'   (*ukuthi)

    b.   ngi-phuph-e   *ngemikhovu*
           1SG-dream-PST NGA.AUG.4zombie
           'I dreamed about zombies.'   (*imikhovu)

(9) **Verbal predicate: complements marked by** *na*

    a. A-ngi-vumelan-i   *nokuthi* uZuma   a-nga-khokh-i   lutho
        NEG-1SG-agree-NEG NA.C   AUG.1Zuma 1SBJV-NEG-pay-NEG 14.thing
        'I don't agree with Zuma not paying anything.'   (*ukuthi)

    b. A-ngi-vumelan-i   *nomthetho*
        NEG-1SG-agree-NEG NA.AUG.1law
        'I don't agree with the law.'   (*umthetho)

Finally, we can compare *ukuthi* CPs to nominals in noun complement position. In Zulu, the nominal complement of a content noun (the internal argument of the corresponding verb) is marked with the the so-called 'associative construction' (Sabelo, 1990; Halpert, 2015). This morpheme appears on all adnominal dependents, including possessors, in (10), and other modifiers (11).

(10) **Associative morphology marks possessors**

    umkhovu   **wo**-mthakathi
    AUG.3zombie 3ASSOC.AUG-1wizard
    'the wizard's zombie'

(11) **Associative morphology marks nominal modifiers**

    isiminyaminya **se**-mikhovu
    AUG.7swarm   7ASSOC.AUG-4zombie
    'a horde of zombies'

As (12a) and (13a) show, *ukuthi* CPs must also bear this morphology—just like nominals—even though they would be unmarked as the complement to a corresponding verb, as in (12b) and (13b).

(12) a. umcabango [*wokuthi* imikhovu   i-fik-ile]
        AUG.3thought 3ASSOC.C AUG.4zombie 4S-arrive-PFV
        'the thought that the zombies arrived'   (*ukuthi)

    b. umcabango *wemikhovu*
        AUG.3thought 3ASSOC.AUG4zombie
        'the thought of zombies'

(13) a. iphupho   [*lokuthi*   imikhovu   i-fik-ile]
        AUG.5dream 5ASSOC.C AUG.4zombie 4S-arrive-PFV
        'the dream that the zombies arrived'   (*ukuthi)

    b. iphupho   *lemikhovu*
        AUG.5dream 5ASSOC.AUG.4zombie
        'the dream about zombies'

This behavior is a sharp departure from the pattern we observed in English in (2), where FCCs had a different (and apparently less restricted) distribution than nominal complements to a noun. Zulu, it appears, sidesteps the English puzzle we saw in the introduction: *ukuthi* CPs show the same basic distribution as nominals. While the basic distributional properties show no difference between CPs and nominals in Zulu, systematic differences emerge when we look more closely.

First, *ukuthi* CPs extrapose more easily than nominals—and they do not need to control agreement when they do. The so-called conjoint morpheme *ya* marks present-tense verbs that are final in *v*P (Halpert, 2015). In (14a), the impossibility of *ya* tells us that a true nominal cannot appear outside of *v*P without agreement. In (14b), the grammaticality of *ya* shows that an *ukuthi* clause can extrapose under the same circumstances.

(14) a.   * ngi-**ya**-funa _vP_] *uku-dla*
            1SG-YA-want   AUG.15-food

      b.   ngi-**ya**-funa _vP_] *ukuthi si-hlul-e   imikhovu*
           1SG-YA-want   C   1PL.SBJV-defeat-SBJV AUG.4zombie
           'I want us to defeat the zombies.'

Second, *ukuthi* CPs prepose less easily than nominals—they cannot appear in canonical preverbal subject position, as in (15a). The ungrammaticality of the *ukuthi* clause in subject position here contrasts with the grammatical complex nominal subject (containing the *ukuthi* CP) in (15b) and the (nominalized) infinitive clause in (15c).

(15) a.   * [_CP_ **ukuthi** wenza izinhlolovo   zakho]
             C   1S-do AUG.10interview 10ASSOC.2SG.PRO
           ku-ya-ngi-jabulisa
           17S-YA-1SG.O-happy.CAUS
           intended: 'That you're doing your interviews makes me happy.'

      b.   [_DP_ indaba   [yokuthi   wenza izinhlolovo   zakho]]
             AUG.9news 9ASSOC.C 1S-do AUG.10interview 10ASSOC.2SG.PRO
           i-ya-ngi-jabulisa
           9S-YA-1SG.O-happy.CAUS
           'The news that you're doing your interviews makes me happy.'

      c.   [_TP_ ukw-enza   kwakho   izinhlolovo]   ku-ya-ngi-jabulisa
             AUG.15-do 15ASSOC.2SG.PRO AUG.10interviews 15S-ya1SG.O-happy.CAUS
           'Your doing the interviews makes me happy.

This second difference has a major syntactic consequence: it leads to hyperraising configurations in Zulu. I argue in Halpert (2018) that *ukuthi* CPs are (phi) goals for T but cannot satisfy T's need for a filled specifier in Zulu (an EPP property on T) due to the distributional restriction observed above. I propose that in Zulu, a T head that agrees with one of these unmoveable *ukuthi* CPs continues to probe (now inside the CP) to find a moveable goal.

This collection of properties suggests that although *ukuthi* CPs are built from a *say* verb and show a number of basic distributional properties that Moulton (2015) ascribes to *in situ* CP saturators, these properties are probably better understood as *nominal* properties. At the same time, they are somehow distinct from nominals—as we saw with their distributional differences from nominals in (14) and (15).

The importance of a close morphosyntactic analysis of complementizers is driven home by Pietraszko (to apepar), who compares these patterns in Zulu to the behavior of *ukuthi* in closely-related Ndebele. In Ndebele, as Pietraszko (to apepar) demonstrates, the basic distributional facts

are the same, but *ukuthi* CPs show even more parallels to nominals. Notably, in Ndebele, *ukuthi* can be productively morphosyntactically decomposed, losing its initial *augment* vowel in precisely the environments where a nominal can (see Halpert, 2015, for an overview of these environments in Zulu)—which Zulu does not permit. In addition, *ukuthi* CPs in Ndebele can appear in canonical subject position. Pietraszko concludes that *ukuthi* CPs in Ndebele involve an overt nominal shell, where the *u* initial vowel is analyzed as a D head that nominalizes the CP. From the outside, then, *ukuthi* CPs in Ndebele are completely syntactically indistinguishable from nominals. This variation between Ndebele and Zulu highlights the fact that Zulu *ukuthi* CPs do not share all properties with nominals. What should we make of this difference? One possibility is that Zulu *ukuthi* CPs involve nominal structure just like in Ndbele, but the Zulu strategy involves a null noun (or D), while Ndebele interprets the *u* of *ukuthi* as an overt D. On such an approach, we could interpret Zulu's distributional differences as a result of restrictions on where null nominal structure can appear.

In short, we learn from *ukuthi* in Zulu and Ndebele that *say*-based complementizers don't need to be verby. Instead, we need to let the morphology on C tell the full story.

2.2   Back to *sengathi*

Sengathi is often translated as 'as if', 'like', 'would that', or 'apparently'. Its distribution is roughly similar to that of comparative complementizers in English (see, e.g. López-Couso and Méndez-Naya, 2012, 2015, and references therein).

Sengathi is used to introduce comparative clauses that modify a main predicate:

(16) a. u-hleka *sengathi* u-ya-qala   uku-hleka
          1S-laugh C   1S-YA-begin INF-laugh
          'He's laughing as if it's his first laugh ever.' (i.e., a lot)

     b. u-gula   *sengathi* u-zo-fa
          1S-be.sick C   1S-FUT-die
          'She seems sick enough to die.'

Unlike the English complementizers *like* and *as if*, (components of) which are also used in other comparative constructions, *sengathi* is unrelated to the Zulu comparative preposition *-njenga* (see Bender and Flickinger, 1999; Rooryck, 2000; López-Couso and Méndez-Naya, 2012, 2015, on the English connection):[7]

(17) a. uMfundo u-gijima *njengo-mntwana*
          AUG.1M 1S-run   like.AUG-1child
          'Mfundo runs like a baby.'

     b. uMfundo u-gijima *sengathi* u-ng-umntwana
          AUG.1M 1S-run   C   1S-COP-AUG.1child
          'Mfundo runs like he's a baby.'

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[7]At a glance, it appears that both elements have the morpheme *nga* in common; a closer look suggests that this is accidental homophony: as Doke et al. (2005) details, *sengathi* developed out of high-toned modal *ngá*, while *njenga-* contains low-toned *nga*, which I suspect developed out of the low-toned instrumental preposition *nga-*.

In clausal comparison, the *sengathi* clause is plausibly a low VP-adjunct. The unavailability of the conjoint *ya* (which would have marked a verb at the *v*P-edge) tells us that the *sengathi* CP must be inside *v*P.

(18) * u-ya-hleka   *vP*] *sengathi* u-ya-qala   uku-hleka
       1S-YA-laugh   C   1S-YA-begin INF-laugh
       'He's laughing as if it's his first laugh ever.'

Even more strikingly, the *sengathi* clause must appear immediately after the verb. When a *sengathi* clause modifies a predicate with a nominal complement, the nominal cannot intervene between V and *sengathi*—it must dislocate or be *pro* dropped.

(19) a. * u-dla inyama   *sengathi* u-ya-yi-qabuka
           1S-eat AUG.9meat C   1S-YA-9O-discover

      b. (inyama) u-yi-dla *sengathi* u-ya-yi-qabuka
          AUG.9meat 1S-9O-eat C   1S-YA-9O-discover
          'He's eating it/meat as if he's just discovered it.'

      c. u-dla *sengathi* inyama   u-ya-yi-qabuka
          1S-eat C   AUG.9meat 1S-YA-9O-discover
          'He's eating as if he's just discovered meat.'

This behavior is reminiscent of certain low adverbs, like *kahle* 'well', which has a similar need to be *v*P-internal and verb-adjacent (Halpert, 2015).[8]

There are a number of environments where *sengathi* clauses are plausibly true complements to the matrix predicate, rather than adjuncts. In particular, it is common in complements to *fisa* 'wish' and *bonakala* 'seem' and can also appear a a complement to some verbs of belief and perception. In these constructions, the embedded predicate can be indicative, but is often subjunctive or modal.

(20) a. ngi-fisa   [sengathi si-hlul-e   imikhovu]
         1SG-wish C   1PL.SBJV-defeat-SBJV AUG.4zombie
         'I wish for us to defeat the zombies.'

      b. ngi-fisa   [sengathi ngi-nga-dla   inyama]
         1SG.S-wish C   1SG.S-MOD-eat AUG-9meat
         'I wish that I could eat meat.'

      c. ku-bonakala [sengathi uSipho u-pheka idina]
         17S-seem   C   AUG.1S 1S-cook AUG.5dinner
         'It seems like Sipho is cooking dinner.'

      d. ngi-zwa   [sengathi u-zo-fika   kusasa
         1SG.S-hear C   1S-FUT-arrive tomorrow
         'I think he might possibly arrive tomorrow.'

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[8]A possible interpretation of these facts is that these low adjuncts tend to be focused elements. Focused elements in Zulu must be verb-adjacent and *v*P-final, often forcing other material to evacuate *v*P (Cheng and Downing, 2012).

There are a few reasons to think these are cases of true embedding. First, *sengathi* CPs alternate with *ukuthi* CPs in some cases where a complement clause is required (more on this difference later). Second, some verbs strongly prefer *sengathi* CPs. Finally, wh-elements that originate inside a *sengathi* CP can be clefted in the matrix clause (21a), with a corresponding agreement marker in the clause of origin, or can take matrix scope from a position in the embedded clause, as in (21b) (see Sabel and Zeller, 2006, on the basic properties of *wh*-constructions in Zulu):

(21) a. Y-ini   o-ku-bonakala [sengathi uSipho u-ya-yi-pheka]?
       COP-AUG.9what REL-17S-seem C   AUG.1S 1S-YA-9O-cook

    b. Ku-bonakala [sengathi y-ini   uSipho a-yi-pheka-yo]?
       17S-seem   C   COP-AUG.9what 1S-S   1S.REL-9O-cook-REL

       'What does it seem that Sipho is cooking?'

We know from our examination of *ukuthi* that *say*-complementizers in Zulu can have nouny properties. If we look at the morphological clues, as we saw, *sengathi* is different, showing no evidence of nominal properties. Indeed, unlike *ukuthi* CPs, *sengathi* CPs can't control agreement:[9]

(22) a. ngi-fisa   [sengathi si-hlul-e   imikhovu]
       1SG-wish C   1PL.SBJV-defeat-SBJV AUG.4zombie

       'I wish for us to defeat the zombies.'

    b. * ngi-ya-**ku**-fisa   ᵥP] [sengathi si-hlul-e   imikhovu]
       1SG-YA-17O-wish   C   1PL.SBJV-defeat-SBJV AUG.4zombie

       'I (do) wish for us to defeat the zombies.'

Like adjunct *sengathi* clauses, embedded *sengathi* CPs can't move at all:

(23) * ngi-**ya**-fisa   ᵥP] [sengathi si-hlul-e   imikhovu]
       1SG-YA-want   C   1PL.SBJV-defeat-SBJV AUG.4zombie

       intended: 'I wish for us to defeat the zombies.'

In fact, *sengathi* CPs cannot combine with nominals at all, either directly or via the associative strategy used by *ukuthi* CPs:

(24) a. isifiso   sa-mi   [*sokuthi*   si-hlule   imikhovu]
       AUG.7wish 7ASSOC-1SG 7ASSOC.C 2PL-defeat.SBJV AUG.4zombie

       'my wish that we defeat the zombies'

    b. * isifiso   sa-mi   [(sa-)*sengathi* si-hlule   imihovu]
       AUG.7wish 7ASSOC-1SG (7ASSOC)-C   2PL-defeat.SBJV AUG.4zombie

It seems reasonable, then, to think of these as the verbal modifier type of FCC (Moulton's in situ saturator): they must be inside *v*P and cannot combine directly with nominals. Moulton (2015) predicts that *in situ* saturator CPs are transparent for raising, but that doesn't seem to be the case for *sengathi* CPs in Zulu: when they combine with raising-predicates, they permit a copy-raising type construction (in contrast to *ukuthi* CPs):

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[9]I show in (22b) that class 15/17 agreement with the clause is ungrammatical—the same pattern holds for all possible noun classes.

(25) a. Le   ncwadi i-bonakala [*sengathi* abafundi   ba-ya-**yi**-thanda]
      9DEM 9book 9S-seem C   AUG.2student 2S-YA-9O-like
      'This book seems/looks like the students like it.'

    b. * Le   ncwadi i-bonakala [*ukuthi* abafundi   ba-ya-**yi**-thanda]
      9DEM 9book 9S-seem C   AUG.2student 2S-YA-9O-like

(26) a. u-bonakala [*sengathi* inja   yakhe   i-shon-ile]
      1S-seem   C   AUG.9dog 9ASSOC.1PRO 9S-die-PFV
      'She looks like her dog just died.'
      (speaker comment: 'you have to be looking at her to say this')

    b. * u-bonakala [*ukuthi* inja   yakhe   i-shon-ile]
      1S-seem   C   AUG.9dog 9ASSOC.1PRO 9S-die-PFV

This difference might actually be good news for the Kratzerian take: if an FCC is a verbal adjunct, it would be odd to have transparency for A-movement, despite Moulton's characterization. In the next subsection, I will take a closer look at the differences between *ukuthi* and *sengathi* and return to this question of transparency.

2.3   Ukuthi vs Sengathi

The previous subsections suggest that although both *sengathi* and *ukuthi* are built from a *say* verb, they show different syntactic behavior that likely requires different strategies for semantic composition. We saw that *ukuthi* has a number of nominal properties (while still being distinct from true nominals), while *sengathi* looks more like a verby complementizer.

Table one summarizes the properties of FCCs headed by the two complementizers, in comparison to DPs and infinitives.

	comp to V	phi-features	preposition marked	extrapose w/Agr	SpecTP ok	extrapose w/o Agr	A-extraction
DP	✓	✓	✓	✓	✓	✗	✗
INF	✓	✓	✓	✓	✓	✓	✗
ukuthi-CP	✓	✓	✓	✓	✗	✓	✓
sengathi-CP	✓	✗	✗	✗	✗	✗	✗

Table 1: Clause types and their properties in Zulu

Recall that *sengathi* is morphologically more complex than the basic *say* complementizers that Kratzer (2016) discusses—in particular, it appears to contain a modal morpheme. The modal flavor that it contributes is easiest to see in direct comparison to *ukuthi*.

Kratzer (2016) and Moulton (2016) note that locating the source of modality inside the embedded clause means that the matrix verb is semantically light(er) than we thought. In Zulu, speakers

will often describe *sengathi* and *ukuthi* as interchangeable when both are possible. When you look closely, though, you find systematic meaning differences that have to do with speaker attitude:[10]

(27) **Likelihood of outcome**

    a. ngi-fisa *ukuthi* si-hlul-e   imikhovu
       1SG-wish C   1PL.SBJV-defeat-SBJV AUG.4zombie

       'I wish for us to defeat the zombies.' (seems possible)

    b. ngi-fisa *sengathi* si-hlul-e   imikhovu
       1SG-wish C   1PL.SBJV-defeat-SBJV AUG.4zombie

       'I want us to defeat the zombies.' (situation seems truly hopeless)

(28) **Reliability of information**

    a. ngi-zwa *ukuthi* u-zo-fika   kusasa
       1SG.S-hear C   1S-FUT-arrive tomorrow

       'I heard that he will arrive tomorrow.'

    b. ngi-zwa *sengathi* u-zo-fika   kusasa
       1SG.S-hear C   1S-FUT-arrive tomorrow

       'I think that he might possibly arrive tomorrow.'

(29) **Plausibility**

    a. uManqoba u-sola   *ukuthi* uSipho   u-bula-w-e   w-umkhovu
       AUG.1M 1S-suspect C   AUG.1Sipho 1S-kill-PASS-PFV COP-AUG.3zombie

       'Manqoba suspects that Sipho was killed by a zombie.' (speaker commits to believing in zombies, even if doubts the M's suspicion)

    b. uManqoba u-sola   *sengathi* uSipho   u-bula-w-e   w-umkhovu
       AUG.1M 1S-suspect C   AUG.1Sipho 1S-kill-PASS-PFV COP-AUG.3zombie

       'Manqoba suspects that Sipho was killed by a zombie.' (speaker highly doubts claim and doesn't commit to believing in zombies)

(30) **Factivity**

    a. uMandisa u-bona *ukuthi* ngi-ya-m-thanda
       AUG.1M 1S-see C   1SG.S-YA-1O-like

       'Mandisa sees that I like her.' (factive)

    b. uMandisa u-bona *sengathi* ngi-ya-m-thanda
       AUG.1M 1S-see C   1SG.S-YA-1O-like

       'Mandisa thinks that I like her (but I don't).'

As the examples above show, *sengathi* has a surprisingly wide distribution—but with serious consequences for the interpretation of the upstairs verb (like *bona* above). In languages like Zulu,

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[10]A note about these examples: the English paraphrases were offered by a Zulu consultant who was asked to give a grammaticality judgment on the Zulu sentences. Paraphrases were checked with 2-3 other speakers who confirmed the judgment and meaning. The parentheticals reflect information conveyed by speakers in conversations about the context in which these would be used.

then, we may not want to put too many restrictions on "selection" of specialized *say*-based complementizers. This seems like a good result for Kratzer: if these FCCs are in fact more like verbal adjuncts, then they should be able to attach to a wide variety of predicates. The modal contribution that the *nga* morphology makes is most transparent when the matrix verb does not typically receive a modal meaning.

To summarize, this basic comparison of two Zulu *say* complementizers teaches us to pay close attention to the morphological makeup of particular C heads; the verb-y and noun-y tendencies of these Zulu FCCs are written transparently in the morphology on C. We also learn from Zulu that the typology suggested by Moulton (2015) perhaps does not capture the full range of FCC possibilities. The *ukuthi* CPs in Zulu show many properties that Moulton (2015) suggest are typical of *in situ* saturators, but they appear to achieve these properties as a result of their nominal-like structure (though recall that they do not share all properties with nominals). The *sengathi* CPs also show a number of Moulton's suggested *in situ* properties, but they are perhaps better treated as low verbal adjuncts.

3   Lubukusu's verb-y C head

Another Bantu language, Lubukusu, is well-documented as having a variety of C heads and embedded clause types (Baker and Safir, 2012; Diercks, 2013). Baker and Safir (2012) look at differences in syntactic and semantic behavior of different clauses in Lubukusu, but group all FCCs together. Here I focus on the more fine-grained discussion found in Diercks (2013). Diercks gives the following list of C heads that embed declarative clauses (excluding relative or focus-related Cs):

C	use
mbo	generic embedding complementizer
Ø	generic embedding complementizer similar to *mbo*
nga	'because', 'as', 'that'
oli	comparative: 'like', 'as if' (also appears with perception verbs)
bali	'that'; reporting unreliable information
AGR-li	'that'; agrees with superordinate subject

Table 2: Lubukusu FCC heads

Diercks offers the following characterizations of the complementizers: *mbo* has the widest availability, though some speakers feel it's not originally Lubukusu; Ø is also widely available and generic[11]; *nga* is more restricted, typically appearing in reason clauses, but sometimes in more general FCCs; *oli* is described as a comparative and can show up with certain raising verbs; *bali* has an evidential-like reading, indicating that the source of the information in the embedded clause is unreliable; AGR-*li* agrees with the superordinate subject.

The -*li* that appears in these last three complementizers is the verb *say*, so as in Zulu, Lubukusu has a family of morphologically complex *say*-based complementizers. Diercks classifies *oli* and

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[11]As far as I can tell, this is at odds with Baker and Safir (2012) on the null C head.

bali as "non-agreeing", as the following agreement paradigm shows, it is plausible that they in fact involve 2ND singular and 3RD plural agreement, respectively:

	SG	PL
1ST	n-di	khu-li
2ND	**o-li**	mu-li
3^{RD}(class 1/2)	a-li	**ba-li**
Class N	N-li	N-li

Table 3: Lubukusu C agreement

The final *say* complementizer involves transparent phi-agreement with the most local superordinate subject (Diercks, 2013, (7)). In other words, agreement on this complementizer is controlled by the subject in the selecting clause, as (31a) below shows:

(31) a. baba-ndu   ba-bol-el-a   Alfredi **ba-**li a-kha-khile
          AUG.2-people 2S-said-APPL-FV 1Alfred 2-C   1S-FUT-conquer
          'The people told Alfred that he will win.'

   b. Alfredi ka-bol-el-a   baba-ndu   **a-**li ba-kha-khil-e
       1Alfred 1S-said-APPL-FV AUG.2-person 1-C 2S-FUT-conquer
       'Alfred told the people that they will win.'

The puzzle that Diercks (2013) investigates is how to capture this funny agree relationship in the syntax, given that the apparent goal of the agreement (the superordinate subject) is above the probe (the embedded C head) and doesn't even need to be the structurally closest DP to C. Diercks' solution is to break the agree dependency into two parts, proposing an operator in the embedded clause that is a subject-oriented anaphor that is locally bound (in the immediate superordinate clause):

(32) $[_{TP}$ Subject$_1$ ... $[_{CP}$ OP$_1$ [... C ...]]]
              Binding   *Agree*

(33) **Indirect Agree**
      i. an unvalued feature (or feature bundle) F is valued by X(P)
      ii. X(P)'s features are valued or controlled by some YP.

If we take Kratzer's approach that some FCCs are verbal adjuncts, we might find another way to account for this agreement pattern. In Bantu languages, it is quite common for phi-features from a particular source to be expressed on multiple elements in a phrase; we find it both in clauses with multiple verbs and (often inside nominals) in cases of concord (see, e.g., Carstens, 2001, 2005, 2011; Halpert, 2015). In particular, following Kratzer, if the *say* complementizer is combining with the main verb via event identification, then it's more integrated into the matrix clause than Diercks assumes. The "matching" agreement with the selecting clause is the same sort of matching agreement we get in Bantu auxiliary constructions. Like *sengathi* in Zulu, it also appears that these

agreeing verb-y complementizers in Lubukusu do not permit raising (Diercks, 2013), which would be consistent with the idea that clauses introduced as verbal adjuncts might in fact be opaque for raising.

4   Conclusion

We have now seen a number of FCCs in Zulu, Ndebele, and Lubukusu that are built around *say* complementizers that exhibit a variety of syntactic properties. I have suggested in this paper that there is a direct connection between the morphosyntactic makeup of the complementizer itself and the particular syntactic and semantic properties of the embedded clause. This type of morphologically complex verb-based complementizer is pervasive in the Bantu language family (see, for example Letsholo and Safir, submitted, on agreeing and voice-matching C in Ikalanga), making these languages an ideal place to look to sharpen our understanding of complementizer syntax and semantics. The complexity of these complementizers gives us a way to test recent ideas that FCCs may combine with selecting predicates in fundamentally different ways and may contribute semantic import that was previously attributed to the selecting clause (e.g. Moulton, 2015; Kratzer, 2016). As I hope to have shown here, the view from Bantu indicates that this is a promising line of inquiry.

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