1 Intro

- In Ndebele\(^1\) relative clauses, the verb bears special agreement prefix, called *relative agreement* (2).

(1) **subject agreement**

\[
\begin{array}{c}
i-	ext{ si- lwane si-yagijima.} \\
7\text{aug- 7- lion 7s-run} \\
\text{‘The lion is running.’}
\end{array}
\]

(2) **relative agreement**

\[
\begin{array}{c}
i-	ext{ si- lwane esi-gijimayo} \\
7\text{aug- 7- lion 7rel-run} \\
\text{‘the lion that is running’}
\end{array}
\]

- The relative agreement is typically viewed as bi-morphemic: relative COMP "a-" + subject marker.

**Proposal:**

- The relative agreement prefix comprises three, rather than two, morphemes, as shown in (3):

(3) **Relative agreement**: the linker *a-* + augment vowel + subj-agreement

- The variable form of the rel-agreement results from regular vowel coalescence:

(4)

<table>
<thead>
<tr>
<th>noun class</th>
<th>a-</th>
<th>augment</th>
<th>subj-agr</th>
<th>rel-agr</th>
</tr>
</thead>
<tbody>
<tr>
<td>class 2</td>
<td>a-</td>
<td>a</td>
<td>ba-</td>
<td>aba-</td>
</tr>
<tr>
<td>class 11</td>
<td>a-</td>
<td>u</td>
<td>lu-</td>
<td>olu-</td>
</tr>
<tr>
<td>class 8</td>
<td>a-</td>
<td>i</td>
<td>zi-</td>
<td>ezi-</td>
</tr>
</tbody>
</table>

- The augment\(^2\) is present because embedded clauses have a nominal layer.
- The linker is present because it is required when combining two nominals.

(5) The syntax of relativization in Ndebele:

- The relative clause is not a CP, but a DP
- In order for a DP to syntactically combine with a noun, it must be introduced by a functional head – the linker

---

\(^1\) Bantu, Nguni, Zimbabwe (S44)

\(^2\) *the augment vowel* is a property of DPs – an exponent of D\(^0\) (or K\(^0\) (Halpert, 2012))
Plan:
2. Analysis: relative agreement = LINKER + AUGMENT + SM
3. Evidence for a DP-shell in embedded clauses
4. DP-shell and clausal complementation
5. Coordination of embedded clauses
6. Conclusion

2 Analysis

- The proposed analysis builds on a previously observed connection between possessive and relative syntax (e.g. Cheng (2006) makes an explicit connection between Shona and Chinese in this respect).
- In Ndebele, too, possessives involve the same kind of linker as relative clauses

(6) i-moto i- [a] u- mfana (> yomfana) Possessive DP
    9-car 9- LNK- 1- boy 'the boy’s car'

(7) i-si-lwane [a] i- si- gijimayo. (> e-sigijimayo) Relative clause (P-Strategy)
    7aug-7-lion LNK- 7aug- 7s- run.REL 'the lion that is running'

- Cheng proposes that the linker in Shona and other Bantu languages may select either a DP (possessives) or a CP (relative clauses).
- I argue that the structures of possessives and relatives are even more uniform:
  → the linker takes a DP complement in both

2.1 The linker in possessives

(8) Possessives (adapted from Cheng (2006))

\[
\text{LnkP} \quad \text{Lnk'}
\]

\[
\begin{array}{c}
\text{i-moto} \\
\phi: 9
\end{array} \quad \begin{array}{c}
\text{DP} \\
\text{Lnk}
\end{array} \quad \begin{array}{c}
\phi: 9 \\
i-a-
\end{array} \quad \begin{array}{c}
\phi: \phi \\
\text{D} \\
\text{NP}
\end{array} \quad \begin{array}{c}
\phi: 1 \\
u-
\end{array} \quad \begin{array}{c}
\phi: 1 \\
\text{mfana}
\end{array}
\]

\[
\text{SPEC-HEAD} \quad \text{\phi-AGREEMENT}
\]

(i) $D^0$ agrees agrees with the possessor’s class.

(ii) The linker agrees with the possessum.
2.2 The linker in relative clauses

(10) u-mu-ntu i-si-lwane a-
1aug-1-person 7aug-7-lion LNK- 7aug-7s- 1o-chase.REL
i-

(11) Syntax of relativization

NP
NP

LNkP

umuntu

Lnk

a-

NP

D

CP

C

TP

T

 VP

D+C-T ϕ-concord

\[ \text{ LNk- } + \text{ D } + \text{ T } \Rightarrow \text{ "rel-agr" } \]

<table>
<thead>
<tr>
<th>noun class</th>
<th>LNk-</th>
<th>D</th>
<th>T</th>
<th>&quot;rel-agr&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>class 6</td>
<td>a-</td>
<td>a-</td>
<td>a-</td>
<td>a-</td>
</tr>
<tr>
<td>class 2</td>
<td>a-</td>
<td>a-</td>
<td>ba-</td>
<td>aba-</td>
</tr>
<tr>
<td>class 1</td>
<td>a-</td>
<td>u-</td>
<td>u-</td>
<td>o-</td>
</tr>
<tr>
<td>class 11</td>
<td>a-</td>
<td>u-</td>
<td>lu-</td>
<td>olu-</td>
</tr>
<tr>
<td>class 9</td>
<td>a-</td>
<td>i-</td>
<td>i-</td>
<td>e-</td>
</tr>
<tr>
<td>class 8</td>
<td>a-</td>
<td>i-</td>
<td>zi-</td>
<td>ezi-</td>
</tr>
</tbody>
</table>

- C-T agreement in Bantu relative clauses (Henderson, 2013)
- D-C agreement – independent evidence in section 3
  ⇒ Consequently, the augment in a RC always covaries with the RC-internal subject.
- the linker and the following augment are subject to regular vowel coalescence rules (12)

(12) Vowel coalescence (hiatus resolution)

a. a + a → a
b. a + u → o
c. a + i → e

- The analysis in (11) explains the form of "relative agreements" (13)
• Relative clauses in Bantu have nominal properties (esp. work on anti-agreement), e.g.:
  – Cheng (2006): C-agreement in Bemba RCs has a pronominal form.
  – Diercks (2010): Fin\(^0\) is nominal, and in relative clauses it surfaces as a nominal prefix.
  – Henderson (2013): C\(_{\text{Rel}}\)-agreement is in a nominal feature ([ref]), and surfaces as the augment.
  – Van der Wal (2010): nominal outer syntax of non-subject relatives (Makhuwa)

• Present analysis: the nominal nature is implemented as a DP-shell

• The rest of the talk: Motivation for the DP-shell analysis
  – the nominal nature of clauses is not a peculiarity of relative clauses
  – D and C can have separate exponents
  – and show syntactic independence

3 Evidence for a DP shell in embedded clauses

• There is evidence that Ndebele embedded clauses, in general, show nominal properties.

• Relative clauses, being a type of embedded clause, require a DP shell as well.

3.1 CPs have an augment

(14) Ngicabanga u-kuthi u-ya-m-thanda.
    think.1sg aug-Comp 1s-pres-1o-like
    ‘I think that she likes him.’

• The complementizer *u-kuthi* is etymologically a nominalization of the verb "say": *u-ku* is the class 15 prefix.

• The initial vowel of the complementizer (*u-kuthi*) can be dropped in the same configurations that allow augmentless nominals (15), (16).

    1sg.want aug-7bread
    ‘I want bread.’

     b. Angifuni [DP (i)-sinkwa.
    1sg.neg.want aug-7bread
    ‘I don’t want bread.’

(16) a. Ngifuna [DP *(u)-kuthi uSipho apheke
    1sg.want aug-15comp 1Sipho 1cook
    ‘I want Sipho to cook.’

     b. Angifuni [DP (u)-kuthi uSipho apheke
    1sg.neg.want aug-15comp 1Sipho 1cook
    ‘I don’t want Sipho to cook’.
The parallel between (15) and (16) shows that:

- The complementizer *ukuthi* is not monomorphemic
- It has an active augment...
- ... that has the same distribution as the augment in other DPs.

### 3.2 Clauses as objects of prepositions

- Assumption: Prepositions select for nominal phrases
- CPs in Ndebele can be objects of prepositions (aka "augment-permitting prefixes" (Halpert, 2012))

(17) Objects of prepositions

a. **Si-khuluma nga- [DP u-muntu omdala. (>ngo-muntu)**
   1pl-talk about aug-1person old
   ‘We are talking about an old person’.

b. **Si-khuluma nga- [DP u-kuthi abantu babambane. (>ngo-kuthi)**
   1pl-talk about aug-15comp people be.united
   ‘We are talking about *(the fact) that people are united’.

### 3.3 Clauses with oblique case markers

- Oblique case prefixes appear with DPs (18-a) and clauses (18-b) alike.

(18) Oblique case prefix:

a. **Umama u-dan-is-w-e yi-lokho.**
   1mother 1-worry-CAUS-PSV-PST by-this
   ‘Mother was worried by this.’

b. **Ngi-dan-is-w-e yi-kuthi u-sukile.**
   1sg-worry-CAUS-PSV-PST by-15comp 2sg-left
   ‘I was worried by *(the fact) that you left’

### 3.4 Clauses control $\varphi$-agreement

(19) a. **Ngi- *(ya)- ku-funa u-kudla**
   1sg- T- 15o-want aug-15food
   I want food.

b. **Ngi- *(ya)- ku-funa u-kuthi uSipho apoheke**
   1sg- T- 15o-want aug-15comp 1Sipho 1cook
   I want Sipho to cook.

Ndebele embedded clauses control class 15 object agreement.

- They obey the same dislocation condition on object marking as DPs (the disjoint form marked by *ya* is required).

---

3. A consequence of the claim that CPs cannot be assigned case Stowell (1981)
4. Unlike prepositions, which may combine with an augmented noun, oblique markers replace the augment ("augment-replacing prefixes" in Halpert (2012)).
5. This fact was also observed for Zulu by Halpert (2012)
4 Consequences of the DP-shell for clausal complementation

(20) Two types of clausal complements:
   a. Verb complement clauses
   b. Noun complement clauses

- Being DPs, clausal complements may be directly selected by verbs:

(21) The syntax of verb complement clauses:

\[
\begin{array}{c}
\text{VP} \\
\text{V} \quad \text{DP} \\
\text{think} \\
\text{D} \quad \text{CP} \\
\phi: 15 \\
\text{u} \\
\text{C} \quad \text{TP} \\
\text{kuthi} \quad \phi: 15 \\
\text{D} \quad \text{C} \quad \phi: \text{concord}
\end{array}
\]

- The nominal status of the embedded clause prevents it from being selected by a noun (22-a)
- Instead, N-complements involve a linking structure (22-b), (23).

(22) N-complement clause

a. *Indaba \[\text{DP u- kuthi } u-ya-m-thanda.\]
   \[9\text{news} \quad 15\text{aug- 15comp 1s-TAM-1o-like}\]
   \[\text{‘the news that she likes him’}\]

b. indaba i- \[a\] \[\text{DP u- kuthi } u-ya-m-thanda.\]
   \[9\text{news 9- LNK- 15aug- 15comp 1s-TAM-1o-like}\]
   \[\text{‘the news that she likes him’}\]

(23) The syntax of noun-complement clauses

\[
\begin{array}{c}
\text{LnkP} \\
\text{DP} \quad \text{Lnk’} \\
\text{i-ndaba} \quad \text{Lnk} \quad \text{DP} \\
\text{‘9news’} \\
\text{i-a} \quad \text{D} \quad \text{CP} \\
\phi: 15 \\
\text{u} \\
\text{C} \quad \text{TP} \\
\text{kuthi} \quad \phi: 15
\end{array}
\]

- the head noun is the specifier of the linker and controls predicate-argument agreement on the linker.
So far we’ve seen that:

- V-complement clauses show a range of nominal properties
- N-complement clauses behave like DPs in that they require a linker
- Relative clauses look like DPs: they have an augment

All embedded clauses: V-complement, N-complement and relative clauses, have a DP-shell

5 More evidence for a DP-shell: coordination

- **Additional evidence**: all types of embedded clauses are coordinated like DPs
- Unlike VP/TP/CP coordination, **DP coordination requires the conjunction la-** (lit. ‘with’)

(24) a. [UJohn u-dlile ] (la) [ uMary u-nathile].
    1John 1-ate  (&) Mary 1-drank
    ‘John ate and Mary drank’

b. UJohn [VP u-dlile ] ∅ [VP u-nathile].
    1John 1-ate & 1-drank
    ‘John ate and drank’

c. UJohn u-dle [DP isuphu ] *( la)- [DP isinkwa].
    1John 1-ate 9soup &- 9bread
    ‘John ate soup and bread’

d. i-moto i- [DP umama ] *( la)- [DP ubaba].
    9-car 9- LNK- 1mother &- 1father
    ‘mom and dad’s car’

5.1 Clause coordination: V-complement

    heard.1sg aug-comp Mary sings &- aug-comp John plays soccer
    ‘I heard that Mary sings and that John plays soccer’

b. Ngizwe u-kuthi [TP uMary uyahlabelela ] [TP uJohn udlala ibhola.]
    heard.1sg aug-comp Mary sings  John plays soccer
    ‘I heard that Mary sings and John plays soccer’.

- The null conjunction cannot be used to coordinate CPs because they have a DP-shell
- Instead, the comitative la- must be used.
- The null conjunction is possible if the second conjunct does not contain a complementizer →TP-coordination (25-b)
5.2 Clause coordination: N-complement

(26) (*indaba yokuthi – ‘the news that...’)

a. Indaba i-[a]- [DP u-kuthi uMary uyahlabela] *(la-) [DP u-kuthi uJohn uyadlala]
   9news 9- LNK- aug-comp Mary sings &- aug-comp John plays
   ibhola ]
   ‘the news that Mary sings and that John plays soccer’

b. *Indaba [ i-[a]- u-kuthi uMary uyahlabela] (la) [ i-[a]- u-kuthi uJohn uyadlala]
   9news 9- LNK- aug-comp Mary sings (&) 9- LNK- aug-comp John plays
   ibhola]
   (*the news that Mary sings and that John plays soccer’)

c. Indaba i-[a]- u-kuthi [TP uMary uyahlabela] [TP uJohn uyadlala ibhola ]
   9news 9- LNK- aug-comp Mary sings John plays soccer
   ‘the news that Mary sings and John plays soccer’

• (26) shows that
  – N-complement clauses also require the nominal conjunction la-
  – coordination site is below the linker (26-b)
  – like with V-complementation, two coordination sites are available: the complement DP (26-a)
    or the TP (26-c)

5.3 Clause coordination: relative clause

• The facts in relative clauses are the same as in N-complement clauses:

(27) a. Ngidinga isilwane [a-] [DP i- sadla inkomo] *(la)- [DP i- sabulala inja.]
    look-for.1sg 7lion LNK- 7aug- 7ate 9cow &- 7aug- 7killed 9dog
    ‘I’m looking for the lion that ate the cow and killed the dog’

b. *Ngidinga isilwane [a- i- sadla inkomo] [ a- i- sabulala inja].
    look-for.1sg 7lion LNK- 7aug- 7ate 9cow LNK- 7aug- 7killed 9dog
    (‘I’m looking for the lion that ate the cow and killed the dog’)

c. Ngidinga isilwane [a-] i- [TP sadla inkomo] [TP sabulala inja. ]
    look-for.1sg 7lion LNK- 7aug- 7ate 9cow 7killed 9dog
    ‘I’m looking for the lion that ate the cow and killed the dog’
• All cases are instances of DP coordination (28)-(30)

(28) V-complement CP coordination

\[
\text{VP} \\
\text{V} \quad \& \text{P} \\
\text{DP} \quad \& \\
\text{u-kuthi ... aug-comp} \quad \text{la-} \\
\text{u-kuthi ... aug-comp}
\]

(29) N-complement CP coordination

\[
\text{DP} \\
\text{LnkP} \quad \text{Lnk'} \\
\text{indaba} '9news' \\
\text{Lnk} \
\text{i-a} \quad \text{9-LNK} \\
\text{DP} \quad \& \\
\text{u-kuthi ... aug-comp} \quad \text{la-} \\
\text{u-kuthi ... aug-comp}
\]

(30) Relative CP coordination

\[
\text{NP} \\
\text{NP}_{Rel} \quad \text{LnkP} \\
\text{isilwane} '7lion' \\
\text{Lnk} \
\text{a} \quad \text{LNK} \\
\text{DP} \quad \& \\
\text{i-sadla ... 7aug-7ate} \quad \text{la-} \\
\text{i-sabulala ... 7aug-7killed}
\]

6 Conclusion and remaining issues

• Ndebele embedded clauses, including RCs, have a DP-shell.

• The D-layer in embedded CPs is realized as an augment co-varying with C^0.

• Predictable form of the relative agreement (the variation is derived from regular vowel coalescence)

• Possessives, relatives and noun-complement clauses all involve a linking structure →

• this correlates with their common property – combining two nominal elements.
Remaining issues:

1: There no agreement on the linker in Ndebele relative clauses (cf. Shona (31-b)).

(31) a. i-doda[a]-a-ba-za-yi-bona (Ndebele)
   9-man LNK-2aug-2s-fut-9o-see
   ‘the man who they will see.’

   b. ndimi dz[a]-va-notaura (Shona, Cheng (2006))
   10-language 10-LNK-2s-TNS-speak
   ‘the languages which they speak’.

– Within Ndebele: What correlates with the agreement asymmetry between N-complement clauses and possessives on the one hand, and relative clauses on the other?

– Crosslinguistically: What correlates with the agreement asymmetry in Ndebele and Shona RCs?

2: Relation to linkers in other Bantu languages

(32) What makes the linking structure necessary?
    a. Case licensing (Baker & Collins, 2006)
    b. Copula involved in predication/symmetry breaking (Schneider-Zioga, 2015a, b)
    c. A functional head facilitating predicate inversion (Den Dikken, 2006)

– Does the linker have the same function on all linking structures?

References


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