Backward Control without A-movement of $\varphi$-agreement

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Slides: tinyurl.com/backward-control
The phenomenon

Ndebele (Bantu, S44, Zimbabwe)

(1) **UZodwa** u-zam-e [uku-pheka].
    1Zodwa 1-try-PST INF-cook
    ‘Zodwa tried to cook’.

(2) Ku-zam-e [uku-pheka **uZodwa** ].
    15-try-PST INF-cook 1Zodwa
    ‘Zodwa tried to cook’.

Terminological note
“control” — obligatory sharing of a thematic argument

Overview of claims and analysis

Ndebele has Backward Control (BC) without:
   i) covert A-movement
      (Polinsky & Potsdam 2002, Monahan 2003, Haddad 2011 a.o.)
   ii) φ-agreement
      (Tsakali et.al. 2017, Alexiadou & Anagnosopoulou 2019)

Proposal:
   • BC is achieved via INDEX agreement
   • A-movement is independent of control

Deriving the properties of BC:
   • Exhaustiveness
   • Obligatoriness
   • Locality (CP-bound)
   • Alternation with Forward Control
Data analysis: It’s control and it’s backward

- Idiom chunks

(3) Isigogo si-a-gq-w-a  sisemanzi.  
7leather 7-PST-fold-PSV-FV wet.PTCP  
Lit: ‘Leather was folded while still wet’  
Idiom: ‘It was done at the right time.’

(4) Isigogo si-mele si-gq-w-e  sisemanzi.  
7leather 7-must 7-fold-PSV-SBJV wet.PTCP  
Lit: ‘Leather must be folded while still wet’  
Idiom: ‘It must be done at the right time.’

(5) Isigogo si-zama uku-gq-w-a  sisemanzi.  
7leather 7-try  INF-fold-PSV-FV wet.PTCP  
Lit: ‘Leather is trying to be folded while still wet’  
No idiomatic meaning

- Active-passive synonymy

(6) a. Umfana u-mele a-phek-e  inyama.  
1boy 1-must 1-cook-SBJV 9meat  
‘The boy must cook meat’

b. Inyama i-mele i-phek-w-e  ng-umfana.  
9meat 9-must 9-cook-PSV-SBJV by-1boy  
‘The meat must to be cooked by the boy’ \( \approx \) (6-a)

(7) a. Umfana u-zama uku-pheka inyama.  
1boy 1-try INF-cook 9meat  
‘The boy is trying to cook meat’

b. #Inyama i-zama uku-phek-w-a  ng-umfana.  
9meat 9-try INF-cook-PSV-FV by-1boy  
‘The meat is trying to be cooked by the boy’ \( \not\approx \) (7-a)

→ The verb zama (‘try’) has an external argument.
The relation is “backward”

Forward Control: DP V V

(8) **uZodwa** u-zam-e uku-pheka.  
1Zodwa 1-try-PST INF-cook  
‘Zodwa tried to cook.’

Backward Control: V V DP

(9) Ku-zam-e uku-pheka **uZodwa**.  
15-try-PST INF-cook 1Zodwa  
‘Zodwa tried to cook.’

The shared argument in BC is postverbal.
Two postverbal subject positions

(10) **In-situ subject**
Ku-a-pheka umfana.
15-PST-cook 1boy
‘The boy cooked.’

(11) **Dislocated subject**
U-a-pheka umfana.
1-PST-cook 1boy
‘The boy cooked.’
Two possible structures for V-V-DP control constructions

[Diagram showing two possible structures for V-V-DP control constructions, with one structure marked with a green check and the other marked with a red cross.]
### Telling apart in-situ & right-dislocated subjects: 4 diagnostics

<table>
<thead>
<tr>
<th></th>
<th><em>in-situ</em></th>
<th><em>dislocated</em></th>
</tr>
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<tbody>
<tr>
<td>Controls agreement on T?</td>
<td>NO</td>
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</tr>
<tr>
<td>Position wrt the object</td>
<td>VSO</td>
<td>VOS</td>
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</tr>
<tr>
<td>Can be an NPI?</td>
<td>YES</td>
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(12) **In-situ subject: No agreement + VSO**

Ku-pheke [vp {umfana} inyama] {*umfana}.
15-cook.PST 1boy 9meat 1boy
‘The boy cooked meat.’

(13) **Dislocated subject: Agreement + VOS**

U-pheke [vp {*umfana} inyama] {umfana}.
1-cook.PST 1boy 9meat 1boy
‘The boy cooked meat.’

(14) **Backward Control: No agreement + VSO**

Ku-zame uku-pheka [vp {umfana} inyama] {*umfana}.
15-try.PST INF-cook 1boy 9meat 1boy
‘The boy tried to cook meat.’
Diagnostic 3: Intervention in object agreement

(16) **In-situ subjects block object agreement**

*Ku-a-(*yi)-pheka umfana inyama.*
15-PST-(*9o)-cook 1boy 9meat 'The boy cooked meat.'

(17) **Dislocated subjects do not block object agreement**

*U-a-yi-pheka inyama umfana.*
1-PST-9o-cook 9meat 1boy 'The boy cooked the meat.'

(18) **Backward Control subjects block embedded object agreement**

*Ku-a-zama uku-(*yi)-pheka umfana inyama.*
15-PST-try INF-(*9o)-cook 1boy 9meat 'The boy tried to cook meat.'

(19) **Forward Control subjects don’t block embedded object agreement**

Umfana u-a-zama uku-yi-pheka inyama.
1boy 1-PST-try INF-9o-cook 9meat 'The boy tried to cook the meat.'
Diagnostic 4: NPI-hood and negative scope

(22) *In-situ subjects can be NPIs*

A-ku-pheki muntu.
NEG-15-cook person.NPI
‘Nobody is cooking’

(23) *Dislocated subjects cannot be NPIs*

*A-ka-pheki muntu.*
NEG-15-cook person.NPI
‘Nobody is cooking’

(24) **BC subjects can be NPIs**

a. A-ku-zami uku-pheka muntu.
   NEG-15-try INF-cook person.NPI
   ‘Nobody is trying to cook’

   15-try INF-NEG-cook person.NPI
   ‘Nobody is trying to cook’
Summary: BC subjects are in the embedded in-situ position

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It’s not restructuring

(25) *Inyama; i-a-zany-w-a [uku-pheka t_i].
    9meat  9-PST-try-PSV-FV   INF-cook
    Lit. ‘The meat was tried to cook’

(26) Ku-zame [uku-nga-pheki umfana].
    15-try.PST   INF-NEG-cook. 1boy
    ‘The boy tried to not cook’

(27) Ku-zame [uku-be ku-pheka   umfana].
    15-try.PST   INF-AUX 15-cook.PROG 1boy
    ‘The boy tried to be cooking.’

Backward Control is allowed across a complement as large as AspP
The verb *zama* (‘try’) 
  i) selects for a TP/AspP 
  ii) has a thematic subject, which 
  iii) can appear in the embedded clause.

→ **Backward Control**
What does Backward Control tell us about control more generally?

**Backward Control = Covert A-movement**


→ A-movement is the underlying mechanism in Control (Hornstein 1999).

**Backward Control = φ-agreement**

Tsakali et.al. 2017, Alexiadou & Anagnosopoulou 2019 (in a way also Alboiu 2007)

→ A-movement is *not* the underlying mechanism for Control.

**Evidence from Ndebele**

Backward Control is neither A-movement nor φ-agreement.

→ Neither is the underlying mechanism in Control.

Forward Control *does* involve A-movement.
BC in Ndebele is not covert A-movement

No matrix anaphor binding

(28) Abafana ba-zam-el-an-a [uku-klina].
    2boy    2-try-APP-REC-A INF-clean
    ‘The boys are trying for each other to clean.’

(29) *Ku-zam-el-an-a [uku-klina abafana].
    15-try-APP-REC-A INF-clean 2boy
    ‘The boys are trying for each other to clean.’

(30) Ku-zama [uku-klin-el-an-a abafana].
    15-try INF-clean-APP-REC-FV 2boy
    ‘The boys are trying to clean for each other.’
BC in Ndebele is not covert A-movement
A-movement can cross CPs, BC cannot

(31)  \textit{Raising out of CPs:}

a.  \textit{UZodwa} i u-fanele \textit{[CP ukuthi t; a-pheke].}
   1Zodwa 1-must \textit{COMP 1-cook.SBJV}
   ‘Zodwa must cook.’

b.  Ku-fanele \textit{[CP ukuthi uZodwa a-pheke].}
   15-must \textit{COMP 1Zodwa 1-cook.SBJV}
   ‘Zodwa must cook.’

(32)  \textit{No BC across CPs:}

a.  \textit{UZodwa} u-zama \textit{[CP ukuthi a-pheke].}
   1Zodwa 1-try \textit{COMP 1-cook.SBJV}
   ‘Zodwa is trying cook.’

b.  \*Ku-zama \textit{[CP ukuthi uZodwa a-pheke].}
   15-try \textit{COMP 1Zodwa 1-cook.SBJV}
   ‘Zodwa is trying to cook.’
BC in Ndebele is not covert A-movement
A-movement gaps control agreement

(33) UZodwa₁ u-fanele [CP ukuthi ti \{a/*ku\}-pheke inyama].
    1Zodwa 1-must COMP \{1/*15\}-cook.SBJV 9meat
    ‘Zodwa must cook meat.’

(34) \text{t}_i \{ku/*u\}-zama [uku-pheka uZodwa₁ inyama].
    \{15/*1\}-try INF-cook 1Zodwa 9meat
    ‘Zodwa is trying to cook meat.’

The lack of agreement additionally rules out the analysis of BC as $\phi$-agreement between matrix and embedded T (Tsakali et.al. for Greek and Romanian)

\[
\begin{bmatrix}
\text{TP} & \text{T}_\phi: & \ldots & \ldots & \boxed{\text{TP} \text{T}_\phi: & \ldots & \text{DP}_\phi}
\end{bmatrix}
\]

“control”
Backward control in Ndebele involves
  • neither A-movement
  • nor φ-agreement

Remaining question
Why is the embedded subject interpreted as matrix subject?
Proposal: control as index agreement

1. Voice has an INDEX probe (Ershova 2019, building on Landau 2000)


\[
\text{VoiceP} \quad \text{VoiceP} \\
\quad \text{Voice} \quad \text{vP} \\
\quad [\text{IDX: } n] \\
\quad \text{DP}_{[\text{IDX:n}]} \ldots
\]

\[
[\text{Mary}_{\text{IDX:2}}]^g = m = g(2)
\]

2. Exhaustive Control predicates have incorporated subjects (Grano 2015)

\[
[\text{VP}]^g = \lambda x.\lambda e.\text{COOK(e)}(x)
\]

Grano 2015: dependent variable
Here: index

\[
[\text{VP}]^g = \lambda e.\text{TRY(E)}(e)(x)
\]

Grano 2015: dependent variable
Here: index

cook . . .

try . . .
EC verbs like *try* have an IDX-probe, whose value $g(n)$ saturates their e-type argument:

$$[\text{TRY}_{\text{IDX}:n}]^g = \lambda E. \left[ \lambda x. \ \lambda e. \ \text{TRY}(E)(e)(x) \right](g(n))$$

Argument sharing:

$$[\text{TRY}_{\text{IDX}:2}]^g = \lambda E. \left[ \lambda x. \ \lambda e. \ \text{TRY}(E)(e)(x) \right](g(2))$$

$$= \lambda E. \ \lambda e. \ \text{TRY}(E)(e)(g(2))$$

$$[\text{TP}]^g = \lambda e'. \ \text{COOK}(e')(z=g(2))$$

$$[\text{VP}_1]^g = \lambda e. \ \text{TRY}\left(\lambda e'. \ \text{COOK}(e')(z=g(2))\right)(e)(g(2))$$

$$= \lambda e. \ \text{TRY}\left(\text{COOK}(z=g(2))\right)(e)(g(2))$$

*Argument sharing*
Subsequent A-movement is orthogonal to argument sharing

Extension to English Exhaustive Control: IDX-agreement + obligatory A-movement
"try" selecting a CP \(\rightarrow\) no IDX-agreement \(\rightarrow\) no control

\[
\begin{align*}
\text{[VP]} &= \lambda_1 \lambda_e. \text{TRY} ([\text{CP}]) (x_e) \\
\text{V} &= \text{tried} \\
\text{CP} &= \text{phase} \\
\end{align*}
\]

\(\text{Zodwa}\)

No valuation \(\rightarrow\)
No argument saturation \(\rightarrow\)
\(\text{try}\) remains transitive

\(\text{UZodwa u-zam-e [CP ukuthi abafana a-pheke].}\)
\(1\text{Zodwa 1-try-PST COMP 2boy 1-cook.SBJV}\)
\('\text{Zodwa tried for the boys to cook.}'\)
Property 1: Backward Control is CP-bound

(36)  *No BC across CPs

*Ku-zama [CP ukuthi uZodwa a-pheke].
15-try COMP 1Zodwa 1-cook.SBJV
‘Zodwa is trying to cook.’

(37)  No φ-agreement across CPs

a.  Be-ngi-(m)-funa  uZodwa[CP ukuthi t a-pheke].
AUX-1sg-(1o)-want 1Zodwa COMP 1-cook.SBJV
‘I wanted Zodwa to cook.’

b.  Be-ngi-(m)-funa  [CP ukuthi uZodwa a-pheke].
AUX-1sg-(1o)-want  COMP 1Zodwa 1-cook.SBJV
‘I wanted Zodwa to cook.’

Explanation: agreement is CP-bound
Property 2: Backward Control is obligatory control

(38) **IDX-agreement impossible → argument sharing optional**

a. *Ku-zam-e [CP ukuthi abafana a-pheke].
   15-try-PST COMP 2boy 1-cook.SBJV
   ‘The boys tried to cook.’

b. **UZodwa** u-zam-e [CP ukuthi abafana a-pheke].
   1Zodwa 1-try-PST COMP 2boy 1-cook.SBJV
   ‘Zodwa tried for the boys to cook.’

c. **UZodwa**i u-zam-e [CP ukuthi pro/i a-pheke].
   1Zodwa 1-try-PST COMP 1-cook.SBJV
   ‘Zodwa tried to cook.’

(39) **IDX-agreement possible → argument sharing obligatory**

a. Ku-zam-e [uku-pheka abafana].
   15-try-PST INF-cook 2boy
   ‘The boys tried to cook.’

b. *UZodwa u-zam-e [uku-pheka abafana].
   1Zodwa 1-try-PST INF-cook 2boy
   ‘Zodwa tried for the boys to cook.’

**Explanation:** agreement is obligatory when possible
Property 3: Backward Control is exhaustive control

(40)  No partial control: "try"

a.  *Ku-zama \([\text{\textsc{tp}} \ uku-buthana \ umphathisikolo ]\)
    15-try  \text{INF-meet}  1\text{headmaster}
    ‘The headmaster is trying to meet.’

b.  *Umphathisikolo u-zama \([\text{\textsc{tp}} \ uku-buthana]\)
    1\text{headmaster}  1-try  \text{INF-meet}
    ‘The headmaster is trying to meet.’

(41)  No partial control: "want"

a.  *Ku-funa \([\text{\textsc{tp}} \ uku-buthana \ umphathisikolo ]\)
    15-want  \text{INF-meet}  1\text{headmaster}
    ‘The headmaster wants to meet.’

b.  *Umphathisikolo u-funa \([\text{\textsc{tp}} \ uku-buthana]\)
    1\text{headmaster}  1-want  \text{INF-meet}
    ‘The headmaster wants to meet.’

Explanation: exhaustiveness is a consequence of sharing a referential index
Property 4: The position of the shared argument falls out from independent properties of A-movement

(42) \textbf{BC is optional}

a. Ku-z\textit{ama} [\textit{TP} uku-pheka \textbf{uZodwa} ]
   15-try \textit{INF-cook} 1Zodwa
   ‘Zodwa is trying to cook.’

b. UZodwa\textit{i} u-z\textit{ama} [\textit{TP} uku-pheka \textit{t}_1 ]
   1Zodwa 1-try \textit{INF-cook}
   ‘Zodwa is trying to cook.’

(43) \textbf{Raising is optional}

a. Ku-\textit{jayela} [\textit{TP} uku-pheka \textbf{uZodwa} ]
   15-usually \textit{INF-cook} 1Zodwa
   ‘Zodwa usually cooks.’

b. UZodwa\textit{i} u-\textit{jayela} [\textit{TP} uku-pheka \textit{t}_1 ]
   1Zodwa 1-usually \textit{INF-cook}
   ‘Zodwa usually cooks.’

\textbf{Explanation:} A-movement is not required for control.

(44) \textit{English EC: Forward Control is required because raising is required}

a. *There/It tried [\textit{TP} \{Zodwa\} to cook \{Zodwa\}].

b. *There/It seemed [\textit{TP} \{Zodwa\} to cook \{Zodwa\}].
**Bottom line**

Backward Control requires neither A-movement nor Φ-agreement.

**Crosslinguistic perspective**

IDX-agreement

Φ-agreement

Covert A-movement

} different paths to Backward Control? → TBD

BUT:

IDX-agreement

Φ-agreement

(Cover) A-movement

} same locality → likely to cooccur
References


(45) a. Ku-zame [uku-be ku-pheka umfana].
   15-try.PST INF-AUX 15-cook.PROG 1boy
   ‘The boy tried to be cooking.’

b. *Ku-zame [uku-be u-pheka umfana].
   15-try.PST INF-AUX 1-cook.PROG 1boy
   ‘The boy tried to be cooking.’

c. *U-zame [uku-be u-pheka umfana].
   1-try.PST INF-AUX 1-cook.PROG 1boy
   ‘The boy tried to be cooking.’

d. *U-zame [uku-be ku-pheka umfana].
   1-try.PST INF-AUX 15-cook.PROG 1boy
   ‘The boy tried to be cooking.’

(46) a. *Umfana ku-zame [uku-be ku-pheka].
   1boy 15-try.PST INF-AUX 15-cook.PROG
   ‘The boy tried to be cooking.’

b. *Umfana ku-zame [uku-be u-pheka].
   1boy 15-try.PST INF-AUX 1-cook.PROG
   ‘The boy tried to be cooking.’

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   ‘The boy tried to be cooking.’

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   1boy 1-try.PST INF-AUX 15-cook.PROG
   ‘The boy tried to be cooking.’
(47)  a. *Ku-zame umfana [uku-be ku-pheka].
   15-try.PST 1boy INF-AUX 15-cook.PROG
   ‘The boy tried to be cooking.’

   b. Ku-zame umfana [uku-be u-pheka].
   15-try.PST 1boy INF-AUX 1-cook.PROG
   ‘The boy tried to be cooking.’

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   ‘The boy tried to be cooking.’

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   ‘The boy tried to be cooking.’