Decomposing partial wh-movement in Shona

JASON ZENTZ
Yale University

Queens College
March 16, 2015
**Wh-questions**

(1) **What** do you think I found ___ yesterday.

The *what* is interpreted in **two positions**:

- It fulfills the **thematic** role of the “findee.”
- It takes **scope** over the whole sentence, turning it into a question.
Wh-question formation strategies

(2) Full wh-movement in English
What do you think \([_{\text{cp}} \text{ we found } \_\_\_}\)?

(3) Wh-in-situ in Mandarin Chinese
Huăngróng xiāngxìn \([_{\text{cp}} \text{ Guójìng mǎile } \text{shěnme}\]? 
Huangrong believe Guojing bought what
‘What does Huangrong believe that Guojing bought?’ (Cheng 2009: 770 (9))

(4) Right-peripheral wh-phrase in American Sign Language
IX\(_2\) BUY \_\_\_ YESTERDAY WHAT
you buy yesterday what
‘What did you buy yesterday?’ (Abner 2011: 25 (5a))
Wh-question formation strategies

(5) **Wh-copying in Romani**

Kas o Demìrì mislinola \([_{cp} \text{kas} \ i \ \text{Arifa dikhla } \_\_\_]\)?

Who the Demir think who the Arifa saw

‘Who(m) does Demir think Arifa saw?’ (McDaniel 1989: 569 n.5 (ii))

(6) **Partial wh-movement in Singaporean Malay**

Kamu percaya \([_{cp} \text{ke mana} \ \text{Mary pergi } \_\_\_]\)?

you believe to where Mary go

‘Where do you believe Mary went?’ (Cole & Hermon 1998: 225 (3b))
Main idea

**Question:** In a language that has several wh-question strategies, are they all derived in different ways, or can we reduce the number of independent mechanisms needed to explain them?

**Claim:** In Shona, a Bantu language spoken by about 14 million people in Zimbabwe and Mozambique, *partial wh-movement is a composite* of wh-in-situ and full wh-movement.
Roadmap

Bantu $wh$-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial $wh$-movement

Conclusion
Outline

Bantu wh-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial wh-movement

Conclusion
The languages of Africa.

The Bantu language area.
Shona elicitation with Thabani Dhlakama.
Wh-in-situ in Bantu

(7) Shona wh-in-situ

a. *In-situ* wh-*indirect object*

Vakatengera **ani** rokwe?
they.bought.for **who** dress

‘Who(m) did they buy a dress (for)?’

b. *Long-distance in-situ* wh-*indirect object*

Waifunga [**cp** kuti vakatengera **ani**
you.thought that they.bought.for **who**
rokwe]?
dress

‘Who(m) did you think they bought a dress (for)?’
Full *wh*-movement in Bantu

(8) **Shona full *wh*-movement**

a. *Full movement of a *wh*-indirect object*

\[\text{Ndi-ani wavakatengera} \quad \_ \_ \_ \quad \text{rokwe?} \]

\[\text{be-who that.they.bought.for} \quad \text{dress} \]

‘Who(m) did they buy a dress (for)?’

b. *Long-distance full movement of a *wh*-indirect object*

\[\text{Ndi-ani wawaifunga} \quad [\text{CP kuti vakatengera} \quad \_ \_ \_ \quad \text{rokwe}]? \]

\[\text{be-who that.you.thought that they.bought.for} \quad \text{dress} \]

‘Who(m) did you think they bought a dress (for)?’
Partial *wh*-movement in Bantu

(9) **Shona partial *wh*-movement**

a. *Partial movement of a *wh*-indirect object*

\[
\text{Waifunga } [_{CP} \ kuti \ ndi-ani] \\
\text{you.thought } \text{that } \text{be-who} \\
\text{wavakatengera } ___ \text{ rokwe]?} \\
\text{that.they.bought.for } \text{dress} \\
\text{‘Who(m) did you think they bought a dress (for)?’}
\]

b. *Partial movement of a *wh*-indirect object*

\[
\text{Waifunga } [_{CP} \ kuti \ ndi-ani \ watakafembera] [_{CP} \ kuti] \\
\text{you.thought } \text{that } \text{be-who \ that.we.guessed} \text{that} \\
\text{vakatengera } ___ \text{ rokwe]?} \\
\text{they.bought.for } \text{dress} \\
\text{‘Who(m) did you think we guessed they bought a dress (for)?’}
\]
Summary

Shona *wh*-question formation strategies

(10) a. In Situ: \[_{CP} \text{Waifunga} _{CP} \text{kuti} \text{vakatengera} \text{ani} \text{rokwe}]? \]

like the higher relation

b. Full: \[_{CP} \text{Ndiani} \text{wawaifunga} _{CP} \text{kuti} \text{vakatengera} \text{rokwe}]? \]

like the lower relation

c. Partial: \[_{CP} \text{Waifunga} _{CP} \text{kuti} \text{ndiani wavakatengera} \text{rokwe}]? \]

higher lower

‘Who(m) do you think they bought a dress (for)’
Outline

Bantu *wh*-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial *wh*-movement

Conclusion
Islands in English

Ross 1967

(11) a. No island

What do you think [\text{cp I found ___ yesterday}]? [\text{ok}]

b. Adjunct island

*Who(m) did you call Emily [\text{island after you saw ___}]? [\text{x}]

c. Complex NP island

*What did Mateo choose [\text{island the T-shirt that said ___}]? [\text{x}]

d. Coordinate structure island

*Where did they go to [\text{island the pet store and ___}]? [\text{x}]

Island sensitivity of Vietnamese \textit{wh-in-situ}

Tran 2009

\begin{enumerate}
\item \textbf{Adjunct island}
\begin{itemize}
\item[Tân sẽ thua cuộc \textit{[island vì ai làm hư xe của anh.ta]}?
\textit{Tan will lose event because who make damage vehicle belong he}
\end{itemize}
\begin{itemize}
\item[\textit{‘Who will Tan lose the race because ___ will damage his car?’} (Tran 2009: 175 (10a))]
\end{itemize}

\item \textbf{Complex NP island}
\begin{itemize}
\item[Tân sẽ chụp hình \textit{[island con hổ đã dọa ai]}?
\textit{Tan will catch picture CLF tiger ASP scare who}
\end{itemize}
\begin{itemize}
\item[\textit{‘Who(m) will Tan take a picture of the tiger that scared ___?’} (Tran 2009: 174 (8a))]
\end{itemize}
\end{enumerate}

Islands can diagnose \textit{silent movement}. 
Island sensitivity in Singaporean Malay
Cole & Hermon 1998

(13) **Complex NP island**

a. **Wh-in-situ within a complex NP**

Kamu sayang \([\text{island} \text{ perempuan yang Ali you love woman that Ali fikir \([\text{cp} \text{ yang telah makan apa}]\)]? thinks that already eat what

‘What do you love the woman who Ali thinks ate ___?’

(Cole & Hermon 1998: 235 (34b))
Island sensitivity in Singaporean Malay
Cole & Hermon 1998

(13) **Complex NP island**

b. *Full wh-movement out of a complex NP*

\[ \text{\textit{Di mana} kamu fikir [}_{CP} \text{Ali suka}} \]

\[ \text{at where you think Ali like} \]

\[ [\text{island perempuan yang tinggal [\_\_]}]? \]

\[ \text{woman that live} \]

‘Where do you think Ali likes the woman who lives [\_\_]?’

(Cole & Hermon 1998: 227 (7a))
Island sensitivity in Singaporean Malay
Cole & Hermon 1998

(13) **Complex NP island**

c. *Partial wh-movement out of a complex NP*

*Ali memberitahu kamu [\textsc{cp} apa yang] Ali told you what that
Mari fikir [\textsc{cp} dia suka] Mari think he likes
[\textsc{island} perempuan yang beli [\_]]

‘What did Ali tell you that Mary thinks that he likes a woman who bought [\_]?’
(Cole & Hermon 1998: 235 (33))
Island sensitivity in Singaporean Malay
Cole & Hermon 1998

(13) **Complex NP island**

d. *Partial wh-movement within a complex NP*

\[ *\text{Kamu sayang [island perempuan yang you love woman that} \]
\[ \text{Ali fikir [cp apa yang telah Ali thinks what that already} \]
\[ \text{makan ___] } \]
\[ \text{‘What do you love the woman who Ali thinks ate ___?’} \]

(Cole & Hermon 1998: 235 (35b))
Attested patterns vs. theoretical predictions

(14) **Fanselow’s (2006) Generalization S4:**
A *wh*-phrase that has undergone (partial) *wh*-movement must not be separated from its scope position by an island for movement.

But...

Theoretical analyses proposed by Sabel (2000: 441), Sabel & Zeller (2006: 280), and Abels (2012: 155–156) predict there to be **languages that falsify this empirical generalization.**

**Shona** is one such language.
Outline

Bantu wh-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial wh-movement

Conclusion
Island sensitivity
The Shona pattern

(15) **Adjunct island**

a. **Wh-in-situ within an adverbial clause**

Waifunga [\textit{\textsc{cp}} kuti vakafonera mapurisa you.thought that they.called police

\textit{[island nokuti vakaona \textsc{ani}]}? because they.saw who

‘Who(m) did you think they called the police because they saw ___?’
Island sensitivity

The Shona pattern

(15) **Adjunct island**

b. *Full wh-movement out of an adverbial clause*

\[
\begin{align*}
\text{*Ndi-ani wawaifunga [}_\text{CP} \text{ kuti vakafonera } & \text{ be-who that.you.thought } \text{ that } \text{ they.called} \\
\text{mapurisa [}_\text{island} \text{ nokuti } \text{ vakaona } & \text{ because they.saw} \\
\text{‘Who(m) did you think they called the police because they saw ___?’}
\end{align*}
\]
Island sensitivity
The Shona pattern

(15) **Adjunct island**

c. *Partial wh-movement out of an adverbial clause*

*Waifunga* [\(_{\text{cp}}\) kuti ndi-ani wavakafonera you.thought that be-who that.they.called mapurisa \([\text{island nokuti vakaona ___}]\)? police because they.saw

‘Who(m) did you think they called the police because they saw ___?’

```plaintext
a. In Situ: \([\text{cp} \ldots [\text{cp} \ldots \text{island} \ldots \text{wh} \ldots ]]\)

\(\)\(\)\(\)\(\)\(\)\(\)\(\)

b. Full: *\([\text{cp} \text{wh} \ldots [\text{cp} \ldots \text{island} \ldots ___ \ldots ]]\)

\(\)\(\)\(\)\(\)\(\)\(\)

c. Partial: *\([\text{cp} \ldots [\text{cp} \text{wh} \ldots \text{island} \ldots ___ \ldots ]]\)

\(\)\(\)\(\)\(\)\(\)\(\)
```
Island sensitivity
The Shona pattern

(15) **Adjunct island**

d. *Partial wh-movement within an adverbial clause*

Waifunga \[\text{cp} \text{kuti} \text{vakafonera mapurisa} \]
you.thought that they.called police

\[\text{island} \text{nokuti} \text{ndi-ani} \]
because be-who

wavakaona ___)]?
that.they.saw

‘Who(m) did you think they called the police because they saw ___?’
Island sensitivity

The Shona pattern

(16) **Complex NP island**

a. *Wh-in-situ within a complex NP*

Wakanzwa [\(CP\) kuti vakaramba [\textit{island} nyaya \(\text{that}\) they.denied \(\text{story}\)]

\(\text{you.heard}\)

yekuti yakaruma \textit{ani} pagumbo]]?

of.\textit{that} it.bit \textbf{who} on.\textit{leg}

‘Who(m) did you hear that they denied the story that it (their dog) bit ___ on the leg?’
Island sensitivity
The Shona pattern

(16) Complex NP island

b. Full wh-movement out of a complex NP

\[
\begin{align*}
\text{Ndi-ani} & \text{ wawakanzwa} \quad \text{[}_c \text{P} \text{ kuti vakaramba} \\
\text{be-who} & \text{ that.you.heard} \quad \text{that they.denied} \\
& \text{[}_c \text{P} \text{ nyaya yekuti yakaruma ___} \\
& \text{story of.that it.bit} \\
& \text{[}_c \text{P} \text{ pagumbo]}? \\
& \text{on.leg}
\end{align*}
\]

‘Who(m) did you hear that they denied the story
that it (their dog) bit ___ on the leg?’
Island sensitivity
The Shona pattern

(16) **Complex NP island**

c. **Partial wh-movement out of a complex NP**

*Wakanzwa \[\text{cp} \text{kuti } \text{ndi-ani} \text{ wavakaramba you.heard that be-who that.they.denied} \]

\[\text{island nyaya yekuti ykaruma ___ story of.that it.bit} \]

\[\text{pagumbo)]? \]

on.leg

‘Who(m) did you hear that they denied the story that it (their dog) bit ___ on the leg?’
Island sensitivity

The Shona pattern

(16) **Complex NP island**

d. *Partial wh-movement within a complex NP*

Wakanzwa \[\text{cp}\] kuti vakaramba
you.heard that they.denied

\[\text{island}\] nyaya yekuti \text{ndi-ani} wayakaruma
story of.that be-who that.it.bit

___ pagumbo)]?
on.leg

‘Who(m) did you hear that they denied the story
that it (their dog) bit ___ on the leg?’
Outline

Bantu wh-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial wh-movement

Conclusion
Composite derivation of partial \textit{wh}-movement

\begin{itemize}
  \item **Lower relation:**
    like full \textit{wh}-movement
    \begin{itemize}
      \item syntactic movement
    \end{itemize}
  \item **Higher relation:**
    like \textit{wh}-in-situ
    \begin{itemize}
      \item semantic non-movement relation
        (Sabel 2000, Sabel & Zeller 2006)
    \end{itemize}
\end{itemize}

\begin{equation}
(17) \quad \text{Proposal for Shona}
\end{equation}

\begin{itemize}
  \item \textbf{a.} In Situ: \[ [\text{CP Op} \ldots [\text{CP} \ldots [\text{island} \ldots \text{wh} \ldots]]]\]
  \item \textbf{b.} Full: \[*[\text{CP wh} \ldots [\text{CP} \ldots [\text{island} \ldots \ldots]]]\]
  \item \textbf{c.} Partial: \[*[\text{CP Op} \ldots [\text{CP} \text{wh} \ldots [\text{island} \ldots \ldots]]]\]
  \item \textbf{d.} Partial: \[ [\text{CP Op} \ldots [\text{CP} \ldots [\text{island}\text{wh} \ldots \ldots]]]\]
\end{itemize}
Lower relation assimilated to full *wh*-movement

**Evidence:**
- Island sensitivity
- Cleft structure
- Extraction marking
- Reconstruction effects
Lower relation assimilated to full wh-movement

Island sensitivity

(18) Wh-phrases cannot be extracted from islands

\[ \text{scopal} \quad \text{thematic} \]

b. Full: \(*_{[\text{CP} \ \text{wh} \ \ldots \ [\text{CP} \ \ldots \ [\text{island} \ \ldots \ \_ \ \_ \ \ldots \ ]]]} \]

c. Partial: \(*_{[\text{CP} \ \ldots \ [\text{CP} \ \text{wh} \ \ldots \ [\text{island} \ \ldots \ \_ \ \_ \ \ldots \ ]]]} \]
Lower relation assimilated to full *wh*-movement

Cleft structure

(19) **Wh-phrases marked with *ndi***-

a. *Full wh-movement requires ndi-*

*(Nd)*-ani  wawaifunga  [\(t_{cp}\) kuti takatengera ___ rokwe]?

be-*who*  that.you.thought  that  we.bought.for  dress

‘Who(m) did you think we bought a dress (for)?’

b. *Partial wh-movement requires ndi-*

Waifunga  [\(t_{cp}\) kuti *(nd)*-ani  watakatengera ___ rokwe]?

you.thought  that  be-*who*  that  we.bought.for  dress

‘Who(m) did you think we bought a dress (for)?’
Lower relation assimilated to full wh-movement

Extraction marking (Zentz in press)

(20)  **Extraction marking**

a.  *Full wh-movement requires extraction marking in the pronunciation clause*

\[
\text{Ndi-ani } *(wa)\text{-waifunga } [\text{cp } \text{kuti } \text{takatengera } ___ \text{ rokwe} ]? \\
\text{be-1a.who } 1\text{a.EXM-you.thought } \text{that } \text{we.bought.for } \text{dress}
\]

‘Who(m) did you think we bought a dress (for)?’

b.  *Partial wh-movement requires extraction marking in the pronunciation clause*

\[
\text{Waifunga } [\text{cp } \text{kuti } \text{ndi-ani } *(wa)\text{-takatengera } ___ \text{ rokwe} ]? \\
\text{you.thought } \text{that } \text{be-1a.who } 1\text{a.EXM-we.bought.for } \text{dress}
\]

‘Who(m) did you think we bought a dress (for)?’
Higher relation assimilated to wh-in-situ

**Evidence:**
- Lack of island sensitivity
- Lack of extraction marking
Lower relation assimilated to full *wh*-movement

Lack of island sensitivity

(21) **Wh-phrases can remain within islands**

a. In Situ: $\left[ \text{CP} \ldots \left[ \text{CP} \ldots \left[ \text{island} \ldots \text{wh} \ldots \right] \right] \right]$  
   
   scopal
   
   thematic
   
   OK

b. Partial: $\left[ \text{CP} \ldots \left[ \text{CP} \ldots \left[ \text{island} \text{wh} \ldots \ldots \right] \right] \right]$  
   
   scopal
   
   thematic
   
   OK
Higher relation assimilated to wh-in-situ

Lack of extraction marking (Zentz in press)

(22) **Extraction marking**

a. *Wh-in-situ cannot have extraction marking*

\[ (*Wa)*-waifunga \quad [_{\text{cp}} \text{kuti} \quad (*wa)*-takatengera \quad \text{ani} \quad \text{rokke}]? \]

\[ 1a.\text{EXM}-\text{you.thought} \quad \text{that} \quad 1a.\text{EXM}-\text{we.bought.for} \quad 1a.\text{who} \quad \text{dress} \]

‘Who(m) did you think we bought a dress (for)?’

b. *Partial wh-movement cannot have extraction marking above the pronunciation site*

\[ (*Wa)*-waifunga \quad [_{\text{cp}} \text{kuti} \quad \text{ndi-ani} \quad *(wa)*-takatengera \quad \text{___} \quad \text{rokke}]? \]

\[ 1a.\text{EXM}-\text{you.thought} \quad \text{that} \quad \text{be-1a.who} \quad 1a.\text{EXM}-\text{we.bought.for} \quad \text{dress} \]

‘Who(m) did you think we bought a dress (for)?’
Outline

Bantu \textit{wh}-questions

Island effects as a diagnostic for movement

Island sensitivity in Shona

Composite derivation of Shona partial \textit{wh}-movement

Conclusion
Conclusion

Open questions:

- Why do some languages have more than one strategy for forming *wh*-questions?
- What governs the choice to use one strategy instead of another?
- Can we predict whether a language will allow partial *wh*-movement within islands?
Conclusion

Old news:

- Languages vary considerably in how they construct wh-questions.
- Islands can be used as a diagnostic for movement.

New news:

- Shona allows partial wh-movement within islands, as predicted by several analyses.
- This provides support for a composite derivation of partial wh-movement, where the higher relation can be assimilated to wh-in-situ and the lower relation to full wh-movement.
Acknowledgments

Thank you to:

▶ Thabani Dhlakama for Shona data and judgments
▶ Yale Linguistics Department for consultant payment funding
▶ Yale University Dissertation Fellowship and Yale University Teaching Fellowship
▶ Vicki Carstens, Jessica Coon, Dave Embick, Michael Yoshitaka Erlewine, Bob Frank, Jason Kandybowicz, Richie Kayne, Hadas Kotek, David Pesetsky, Jim Wood, and Raffaella Zanuttini, the audience at LSA 2015, and three anonymous LSA abstract referees
▶ Ryan Bennett, Sarah Culbertson, Mike Diercks, Rikker Dockum, Bob Frank, Martin Fuchs, Chris Geissler, Patti Gonzalez, Jim Wood, Raffaella Zanuttini, and Kim Zentz for presentation advice
References I


References II


Island sensitivity
The Shona pattern

(23) **Complex NP island (relative clause)**

a. Wh-in-situ within a relative clause

Unofunga \[c_p\] kuti anofarira
you.think that s/he.likes

\[\text{[island chikwata chinobva kupi]}\]

\text{team that.is.from where}

‘Where do you think s/he likes the team that is from ___?’
Island sensitivity
The Shona pattern

(23) Complex NP island (relative clause)
   b. Full wh-movement out of a relative clause
      *Nde-kupi kwaunofunga be-where that.you.think
         [cp kuti anofarira [island chikwata
         that s/he.likes team
         chinobva ___]? that.is.from
      ‘Where do you think s/he likes the team that is
      from ___?’
(23) **Complex NP island (relative clause)**

   c. *Partial wh-movement out of a relative clause*

   *Unofunga [\[c_p\] kuti nde-kupi kwaanofarira you.think that be-where that.s/he.likes [island chikwata chinobva ___]?*  

   ‘Where do you think s/he likes the team that is from ___?’

   a. **In Situ:**  
      \[ [c_p] \ldots [c_p] \ldots [island \ldots wh \ldots] ]
      
      **scopal**  
      
      **thematic**  

   b. **Full:**  
      \[ *[c_p] wh \ldots [c_p] \ldots [island \ldots ___ \ldots] ]
      
      \[
      \]

   c. **Partial:**  
      \[ *[c_p] \ldots [c_p] wh \ldots [island \ldots ___ \ldots] ]
      
      \[
      \]
Island sensitivity
The Shona pattern

(24) Complex NP island (relative clause)

a. Wh-in-situ within a relative clause
   Anofarira \[\text{island} \text{ chikwata} \text{ chaunofunga} \]
   \[\text{s/he.likes} \text{ team} \text{ that.you.think} \]
   \[\[\text{cp} \text{ kuti} \text{ chinobva} \text{ kupi}\]?
   \[\text{that} \text{ it.is.from} \text{ where} \]
   ‘Where does s/he like the team that you think is from ____?’

b. In Situ: \[\text{cp} \text{ ... [island ... [cp ... wh ... ]]} \]
   OK

c. Full: \[\text{cp} \text{ wh ... [island ... [cp ... wh ... ]]} \]

d. Partial: \[\text{cp} \text{ ... [island ... [cp ... wh ... ... ]]} \]
Island sensitivity
The Shona pattern

(24)  **Complex NP island (relative clause)**

b.  *Full wh-movement out of a relative clause*

\[
\begin{align*}
\text{*Nde-kupi kwaanofarira [island chikwata team} \\
\text{be-where that.s/he.likes} \\
\text{chaunofunga [cp kuti chinobva ___]?} \\
\text{that.you.think that it.is.from}
\end{align*}
\]

‘Where does s/he like the team that you think is from ___?’
More Shona Islands

Island sensitivity
The Shona pattern

(24) **Complex NP island (relative clause)**

d. *Partial wh-movement within a relative clause*

?Anofarira \([\text{island chikwata chaunofunga } \text{team that.you.think}]

\([\text{cp kuti nde-kupi kwachinobva } \underline{\text{___}}]\)?

that \underline{be-where} that.it.is.from

‘Where does s/he like the team that you think is from \underline{___}?’

\[\text{In Situ: } \begin{array}{c}
\text{scopal} \\
\text{thematic}
\end{array}
\begin{array}{c}
\text{cp } \ldots [\text{island } \ldots [\text{cp } \ldots \text{wh } \ldots ]] \\
\text{ok}
\end{array}\]

\[\text{Full: } *\begin{array}{c}
\text{scopal} \\
\text{thematic}
\end{array}
\begin{array}{c}
\text{cp wh } \ldots [\text{island } \ldots [\text{cp } \ldots \underline{\text{___}} ] ] \\
\times
\end{array}\]

\[\text{Partial: } \begin{array}{c}
\text{scopal} \\
\text{thematic}
\end{array}
\begin{array}{c}
\text{cp } \ldots [\text{island } \ldots [\text{cp } \text{wh } \ldots \underline{\text{___}} ] ] \\
\text{ok}
\end{array}\]