Shona *wh*-in-situ: Relating the scopal and pronunciation positions of the *wh*-phrase

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1 Overview

*Wh*-question formation strategies may be categorized according to whether the *wh*-phrase is pronounced in its scopal position, its canonical position, or in between:

![Diagram](image)

Central theoretical issues:

- The nature of the relations depicted by the lines in (1)
- Whether any of these strategies can be assimilated to another

Shona, a Bantu language spoken by about 13 million people in Zimbabwe and Mozambique, allows all three of the strategies in (1), or at least so it appears at first glance.

Shona *wh*-in-situ

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

\[
\text{V-aka-teng-er-a } \text{Ø-ani } \text{Ø-rokwe?}^{\dagger} \quad \text{[Shona]}
\]

2.SM-TA-buy-APPL-FV 1a-*who* 5-dress

‘Who(m) did they buy a dress (for)?’ (lit., ‘They bought who(m) a dress?’)  
(2015-08-29-02-TD)

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

\[
\text{W-ai-fung-a } \text{[cp kuti v-aka-teng-er-a } \text{Ø-ani } \text{Ø-rokwe}\text{]}? \quad \text{[Shona]}
\]

2SG.SM-TA-think-FV that 2.SM-TA-buy-APPL-FV 1a-*who* 5-dress

‘Who(m) did you think they bought a dress (for)?’ (lit., ‘You thought they bought who(m) a dress?’)  
(2015-01-17-01-TD)

Unlike English questions with in-situ *wh*-phrases, Shona *wh*-in-situ is not restricted to multiple *wh*-questions or to echo/quiz question contexts. *Wh*-in-situ is the most unmarked way to ask about a non-subject in Shona.

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

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

\[
\text{Ndi-Ø-ani ni-1a-who } \text{wa-v-aka-teng-er-a } \text{Ø-rokwe?}^{\dagger} \quad \text{[Shona]}
\]

1PL-1a-*who* 1a.NSE-2.SM-TA-buy-APPL-FV 5-dress

‘Who(m) did they buy a dress (for)?’ (lit., ‘It’s who that they bought a dress (for)?’)  
(2016-02-13-01-TD)

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\[\dagger\] Shona examples appear in the standard orthography, which does not mark tone (though I have added tone diacritics where they alone mark a relevant contrast). The graphemes that depart from IPA usage are given here with their IPA equivalents: \(<b> \text{[ɓ]}\>, \text{<bh> [b̤]}, \text{<ch> [tʃ]}, \text{<dz> [d̤͡z̤]}, \text{<g> [ɡ]}, \text{<kw> [kʷ]}, \text{<mb> [ᵐb]}, \text{<nd> [ⁿd]}, \text{<ng> [ᵑɡ]}, \text{<ny> [ɲ]}, \text{<sh> [ʃ]}, \text{<th> [t]}, \text{<tsv> [t͡sᶹ]}, \text{<v> [ʋ]}, \text{<vh> [v̤]}, \text{<y> [j]}, \text{<z> [z]}>.

\[\ddagger\] For the sake of clarity and consistency, I have occasionally adjusted glosses and translations in examples cited from other sources, following the Leipzig Glossing Rules wherever possible. Abbreviations used include: 1PL = first person plural, 1SG = first person singular, 2PL = second person plural, 2SG = second person singular, 3SG = third person singular, APPL = applicative, ASCL = assertive subject clitic, ASP = aspect, AUX = auxiliary, CLF = classifier, DEM = demonstrative, F = feminine, FUT = future, FV = final vowel, M = masculine, NSE = non-subject extraction, REL = reflex of Proto-Bantu copula *ni, SM = subject marker, TA = tense and/or aspect. Bare numerals (and also 1a) in glosses indicate noun class, encoding both number and gender features.
b. Long-distance full movement of a wh–indirect object

\[
\text{Ndi-Ø-ani wa-w-ai-fung-a [cp kuti [Shona]
Ni-1a-who 1a.NSE-2SG.SM-TA-think-FV that
v-aka-teng-er-a ___ Ø-rokwe]?
2.SM-TA-buy-APPL-FV 5-rokwe
'Who(m) did you think (lit., It's who that you thought) they bought a
dress (for)?)'
\]

(2015-01-17-01-TD)

(4) Shona partial wh-movement

a. Partial movement of a wh–indirect object

\[
\text{W-ai-fung-a [cp kuti ndi-Ø-ani wa-v-aka-teng-er-a [Shona]
2SG.SM-TA-think-FV that Ni-1a-who 1a.NSE-2SM-TA-buy-APPL-FV
___ Ø-rokwe]?
5-rokwe
'Who(m) did you think they bought a dress (for)?'
(lit., 'They thought that it's who that they bought a dress (for)?')
\]

(2015-01-17-01-TD)

b. Long-distance partial movement of a wh–indirect object

\[
\text{W-ai-fung-a [cp kuti ndi-Ø-ani wa-t-aka-fember-a [Shona]
2SG.SM-TA-think-FV that Ni-1a-who 1a.NSE-1PL.SM-guess-FV
[cp kuti v-aka-teng-er-a ___ Ø-rokwe]?
that 2.SM-TA-buy-APPL-FV 5-rokwe
'Who(m) did you think we guessed they bought a dress (for)?'
(lit., 'They thought that we guessed that it's who that they bought a dress (for)?')
\]

(2015-01-17-01-TD)

Main theoretical question: In wh-in-situ, how is the relation between the scopal and pronunciation positions of the wh-phrase established?

Current state of affairs: In Bantu languages, wh-in-situ questions are often taken to be derived via a non-movement relation, but alternatives that have been proposed for non-Bantu languages have rarely been considered.

Preview:
- Present 4 properties of Shona wh-in-situ
- Evaluate 5 potential analyses (3 with movement, 2 without movement)
- Unselective binding, a non-movement relation, emerges as the winner for Shona.
- Bantu languages show diversity with respect to wh-in-situ.

For more information and a cross-Bantu perspective, see Zentz 2016:
- Section 2.2 for more detail on the content presented here
- Section 2.3 for subject–non-subject asymmetries in wh-in-situ
- Chapters 3 and 4 for an analysis of the derivational relationships between Shona wh-in-situ, full wh-movement, and partial wh-movement

2 Unselective binding


- No movement involved
- In the semantics, a null operator in the scopal position binds the wh-phrase.⁴
- Prediction: In-situ questions should show identical morphosyntax to their declarative counterparts.

The following sections will reveal that this prediction is borne out for Shona wh-in-situ.


⁴This is a fairly coarse summary of how this works in the semantics, the details of which I leave for future work. For example, it is possible that the wh-phrase would need to contain a choice function variable (Reinhart 1998, Murphy forthcoming).
3 Disguised movement


- **Overt wh-movement** to the scopal position
- **Overt remnant movement** of the rest of the sentence
- **Prediction:** Wh-phrases will be **sentence-final**, not in their canonical position. Thus this is only **apparent** wh-in-situ.

(5) **Bellunese non-subject wh-in-situ**
   a. **Postverbal in-situ wh–direct object**
      A-tu have-2sg.nascl magnà che? ‘What have you eaten?’ (Munaro et al. 2001:149 (4a))
   b. **Postverbal in-situ wh–locative adjunct**
      Sé-tu are-2sg.nascl ’ndat andé? ‘Where have you gone?’ (Munaro et al. 2001:149 (4c))

(6) **Bellunese wh-phrases are sentence-final, not in situ**
   a. **Declarative word order**
      Al have-3sg.m.ascl a dat al libro a so fradel. ‘He gave the book to his brother.’ (Poletto & Pollock 2015:139 (9d))
   b. **Questioning the direct object with declarative word order in the vP**
      *Ghe ha-lo dat che a so fradel? [Bellunese]
      ‘What did he give to his brother?’ (Poletto & Pollock 2015:139 (9e))
   c. **“In-situ” sentence-final wh–direct object**
      Ghe ha-lo dat che, a so fradel? [Bellunese]
      ‘What did he give, to his brother?’ (Poletto & Pollock 2015:140 (9f))

(7) **Derivation of (5a), adapted from Poletto & Pollock 2015:138 (8)**

(8) **Shona wh-phrases are in situ, not sentence-final**
   a. **Declarative word order**
      V-aka-teng-er-a Ø-Thandi Ø-rokwe ku-chi-toro. [Shona]
      2.sm-ta-buy-appl-fv 1a-Thandi 5-dress 17-7-store
      ‘They bought Thandi a dress at the store.’ (2016-02-13-01-TD)
   b. **In-situ wh–indirect object**
      V-aka-teng-er-a Ø-ani Ø-rokwe ku-chi-toro? [Shona]
      2.sm-ta-buy-appl-fv 1a-who 5-dress 17-7-store
      ‘Who(m) did they buy a dress (for) at the store?’ (2016-02-13-01-TD)
   c. **In-situ wh–direct object**
      V-aka-teng-er-a Ø-Thandi chi-i ku-chi-toro? [Shona]
      2.sm-ta-buy-appl-fv 1a-Thandi 7-what 17-7-store
      ‘What did they buy Thandi at the store?’ (2016-02-13-01-TD)
   d. **In-situ wh–locative adjunct**
      V-aka-teng-er-a Ø-Thandi Ø-rokwe ku-pi? [Shona]
      2.sm-ta-buy-appl-fv 1a-Thandi 5-dress 17-which
      ‘Where did they buy Thandi a dress?’ (2016-02-13-01-TD)
4 Lower copy spell-out

(Fanselow & Ćavar 2001, Reintges 2007a,b, Reintges et al. 2006)

- Overt wh-movement to the scopal position
- Pronunciation of a lower copy
- Prediction: If the language has extraction marking, it will appear even in wh-in-situ.

(9) Extraction marking with Coptic wh-in-situ

a. In-situ wh–subject
   \[nt-a\ n\im\ t\ajo\ na-f\ n-tei-hymomone?\] [Coptic]
   ‘Who has acquired such an endurance ...?’ (Hilaria 12, 29; ed. Drescher, cited in Reintges et al. 2006:179 (26a))

b. In-situ wh–direct object
   \[e\-i-na-t\ajo\ u\ na-k?\] [Coptic]
   ‘What shall I say to you?’ (Apopth. Patrum no. 28, 5, 25; ed. Chaïne, cited in Reintges et al. 2006:179 (26b))

c. In-situ wh–object of a preposition
   \[e\-t\ajo\-sine\ ansa\ n\im?\] [Coptic]
   ‘Who(m) are you looking for?’ (John 18:4, cited in Reintges et al. 2006:179 (26c))

(10) Lack of extraction marking with in-situ wh–non-subjects

a. In-situ wh–indirect object
   \[(*\text{Wa})-v\-aka-t\ajo\-er-a\ 0\-ani\ 0\-rokwe\ ku-chi-toro?\] [Shona]
   \[1a.NSe\-2.SM-Ta\-buy\-APPL-FV 1a-who 5\-dress 17\-7\-store\]
   ‘Who(m) did they buy a dress (for) at the store?’ (2016-02-13-01-TD)

b. In-situ wh–direct object
   \[(*\text{Cha})-v\-aka-t\ajo\-er-a\ 0\-Thandi\ chi-i\ ku-chi-toro?\] [Shona]
   \[7.NSe\-2.SM-Ta\-buy\-APPL-FV 1a-Thandi 7\-what 17\-7\-store\]
   ‘What did they buy Thandi at the store?’ (2016-02-13-01-TD)

c. In-situ wh–locative adjunct
   \[(*\text{Kwa})-v\-aka-t\ajo\-er-a\ 0\-Thandi\ 0\-rokwe\ ku-pi?\] [Shona]
   \[17.NSe\-2.SM-Ta\-buy\-APPL-FV 1a-Thandi 5\-dress 17\-which\]
   ‘Where did they buy Thandi a dress?’ (2016-02-13-01-TD)

5 Covert movement

(Cable 2010, Huang 1982, Pesetsky 2000, Tran 2009, among others)

- Covert (LF) wh-movement to the scopal position
- Prediction: Wh-in-situ will show sensitivity to island boundaries between the base position and scopal position.
(11) Island sensitivity in Vietnamese wh-in-situ
a. In-situ wh-subject within an adjunct island
*Tôi sẽ tha cuộc [island vi ai làm hư [Vietnamese] Tan fut lose event because who make damage xe của anh.ta]? vehicle belong he
'Those who will Tan lose the race because who will damage his car?' (lit., 'Tan will lose the race because who will damage his car?')
(Tran 2009:175 (10a))

b. In-situ wh-direct object within a relative clause island
*Tôi sẽ chup hình [island con họ đã dọa [Vietnamese] Tan fut catch picture clf tiger asp scare ai]? who
'Those who(m) will Tan take a picture of the tiger that scared who(m)?' (lit., 'Tan will take a picture of the tiger that scared who(m)?')
(Tran 2009:174 (8a))

Shona wh-in-situ is not sensitive to islands, whether relative clause islands, complement clause islands, or adjunct islands.

(12) Lack of island sensitivity in Shona wh-in-situ
a. In-situ wh-subject within a relative clause island
U-no-ziv-a [island mu-sikana wa-v-ai-fung-a [Shona] 2sg.sm-ta-know-fv 1-girl 1.nse.2.sm-ta-think-fv
[clf kuti Ø-ani aka-sarudz-a]? that 1a-who 1a.sm.ta-choose-fv
'Who do you know the girl that they thought who chose?' (lit., 'You know the girl that they thought who chose?')
(2014-11-01-01-TD)

b. In-situ wh-direct object within a relative clause island
Va-ri ku-tsvag-a [island mu-rume aka-b-a [Shona] 2.sm-be 15.look.for-fv 1-man se.1.sm.ta-steal-fv
chi-i]? 7-what
'What are they looking for the man who stole ___?' (lit., 'They are looking for the man who stole what?')
(2014-12-06-02-TD)

c. In-situ wh-subject within a complement clause island
ch-aka-rum-a Ø-Taurai pa-Ø-gumbo]? 7.sm.ta-bite-fv 1a-Taurai 16-5-leg
'Who(m) did they (sg.) deny the story that it (their dog) bit ___ on the leg?' (lit., 'They (sg.) denied the story that what bit Taurai on the leg?')
(2014-07-22-01-TD)

d. In-situ wh-direct object within a complement clause island
Ø-ani pa-Ø-gumbo]? 16-5-leg
'Who(m) did they (sg.) deny the story that it (their dog) bit who(m) on the leg?'
(2014-09-27-01-TD)

e. In-situ wh-subject within an adjunct island
V-aka-foner-a [island nokuti Ø-ani [Shona] 2.sm.ta-call-fv 6-police because 1a-who
aka-on-a m-bavha]? 1a.sm.ta-see-fv 9-thief
'Who did they call the police because ___ saw a thief?' (lit., 'They called the police because who saw a thief?')
(2014-11-01-01-TD)
f. *In-situ wh-direct object within an adjunct island*  
V-aka-tonera ma-purisa [island nokuti v-aka-on-a [Shona] 2.SM-TA-call-FV 6-police because 2.SM-TA-see-FV]  
Ø-ani?  
1a-who  
‘Who(m) did they call the police because they saw ___?’ (lit., “They called the police because they saw who(m)?”)  

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Table 3: Properties and analyses of Shona wh-in-situ (interim)

6 Computation of alternatives


- **No movement** involved
- In the semantics, wh-phrases introduce **alternatives**, which project up the tree so that the meaning of the question is a set of alternative propositions (possible answers).
- **Prediction:** Interpretation of these alternatives should be blocked by **intervening focus-sensitive operators** (Beck 2006).

(13) **Intervention effects with Kiitharaka wh-in-situ**

a. No intervention  
Tû-gwâtani-îr-e üû n-a-ij-îr-e? [Kiitharaka]  
I-pl.sm-agree-pfv-FV who ni-1.sm-steal-pfv-FV  
‘Who did we agree stole?’ (Muriungi 2011:823 (8))

b. Focus marker  
*I*-tû-gwâtani-îr-e üû n-a-ij-îr-e? [Kiitharaka]  
NI-I-pl.sm-agree-pfv-FV who ni-1.sm-steal-pfv-FV  
‘Who did we agree stole?’ (Muriungi 2011:828 (27))

c. Focus: ‘even’  
*Kinya* a-gwîmi ba-gwâtani-îr-a üû n-a-ij-îr-e? [Kiitharaka]  
even 2-hunter 2.sm-agree-pfv-FV who ni-1.sm-steal-pfv-FV  
‘Who did even the hunters agree stole?’ (Muriungi 2011:828 (31))

d. Negation  
*Tû-tí-ra-gwâtani-îr-a üû n-a-ij-îr-e? [Kiitharaka]  
I-pl.sm-NEG-rec.pst-agree-pfv-FV who ni-1.sm-steal-pfv-FV  
‘Who didn’t we agree stole?’ (Muriungi 2011:828 (30))

e. Factive verb  
*Tû-îrir-îr-a üû n-a-ij-îr-e? [Kiitharaka]  
I-pl.sm-regret-pfv-FV who ni-1.sm-steal-pfv-FV  
‘Who did we regret stole?’ (Muriungi 2011:828 (32))

Shona wh-in-situ is not sensitive to focus interveners.

(14) **Lack of intervention effects with Shona local wh-in-situ**

a. Focus: ‘only’  
?(Ndi)-Ø-Rumbi chete aka-vereng-a Ø-bhuku ri-pî? [Shona]  
NI-Ia-Rumbi only 1a.sm.ta-read-fv 5-book 5-which  
‘Which book did only Rumbi read?’ (2014-07-29-01-TD)
Furthermore, intervention effects do not arise when an island boundary separates the in-situ wh-phrase from the potential intervener, as shown in (15–16). This stands in contrast to what Kotek (2014a,b) finds for English multiple wh-questions and rules out an analysis involving covert movement to the island boundary with alternative computation upwards from there.

(15) **Intervener above adjunct island in Shona long-distance wh-in-situ**

b. **Focus: ‘also’**

Ø-Tendai aka-vereng-a\=wo Ø-bhuku ri-pi? [Shona]
1a-Tendai 1a.SM.TA-read-fv\=also 5-book 5-which
‘Which book did Tendai also read?’ (2014-07-29-01-TD)

c. **Focus: ‘even’**

**Chero** Ø-Tendai aka-vereng-a Ø-bhuku ri-pi? [Shona]
even 1a-Tendai 1a.SM.TA-read-fv 5-book 5-which
‘Which book did even Tendai read?’ (2014-07-29-01-TD)

d. **Universal quantification**

Va-nhu \=v-ese v-aka-vereng-a Ø-bhuku ri-pi? [Shona]
2-person 2-every 2.SM.TA-read-fv 5-book 5-which

e. **Negation**

Ø-Taurai ha-a-n-a ku-teng-a chi-i? [Shona]
1a-Taurai NEG-1a.SM-be.with-fv 15-buy-fv 7-what
‘What didn’t Taurai buy?’ (2014-10-22-01-TD)
Intervener above complement clause island in Shona long-distance wh-in-situ

a. Focus: 'only'
   Ø-Taurai chete aka-ramb-a [island] ny-a-ya ye-kuti [Shona]
   1a-Taurai only 1a.SM.TA-deny-FV 9-story 9.of-that
   aka-tsvod-a Ø-ani]
   1a.SM.TA-kiss-FV 1a-who
   'Who(m) did only Taurai deny the story that he kissed ___?'
   (2015-01-17-01-TD)

b. Focus: 'alone'
   Ø-Taurai ega aka-ramb-a [island] ny-a-ya ye-kuti [Shona]
   1a-Taurai alone 1a.SM.TA-deny-FV 9-story 9.of-that
   aka-tsvod-a Ø-ani]
   1a.SM.TA-kiss-FV 1a-who
   'Who(m) did Taurai alone deny the story that he kissed ___?'
   (2015-01-17-01-TD)

c. Focus: 'even'
   Chero Ø-Taurai aka-ramb-a [island] ny-a-ya ye-kuti [Shona]
   even 1a-Taurai 1a.SM.TA-deny-FV 9-story 9.of-that
   aka-tsvod-a Ø-ani]
   1a.SM.TA-kiss-FV 1a-who
   'Who(m) did even Taurai deny the story that he kissed ___?'
   (2015-01-17-01-TD)

d. Focus: 'also'
   Ø-Taurai aka-ramb-a=wo [island] ny-a-ya ye-kuti [Shona]
   1a-Taurai 1a.SM.TA-deny-FV=also 9-story 9.of-that
   aka-tsvod-a Ø-ani]
   1a.SM.TA-kiss-FV 1a-who
   'Who(m) did [Taurai also] deny the story that he kissed ___?'
   (2015-01-17-01-TD)

e. Negation
   Ø-Taurai ha-a-n-a ku-ramb-a [island] ny-a-ya [Shona]
   1a-Taurai NEG 1a.SM.be.with-FV 15-deny-FV 9-story
   ye-kuti aka-tsvod-a Ø-ani]
   9.of-that 1a.SM.TA-kiss-FV 1a-who
   'Who(m) didn’t Taurai deny the story that he kissed ___?'
   (2015-01-17-01-TD)

Table 4: Properties and analyses of Shona wh-in-situ (final)

1. Word order same as declarative ✓ × ✓ ✓ ✓ ✓
2. Lack of non-subject extraction ✓ × ✓ ✓ ✓ ✓
3. Lack of island effects ✓ × ✓ ✓ ✓
4. Lack of intervention effects ✓ ✓ ✓ ✓ ×

7 Summary

- Bantu true wh-in-situ requires a non-movement analysis.
  - Shona lacks intervention effects → unselective binding
  - Kîîtharaka and Lubukusu show intervention effects → alternative computation
- A few Bantu languages (e.g., Dzamba (Bokamba 1976)) may have apparent wh-in-situ, amenable to a disguised movement analysis.

³Or possibly massive pied-piping with a lot of movement, but it would be hard to distinguish that from unselective binding empirically.
⁴Dzamba requires non-clefted wh-phrases to be sentence-final, as in Romance apparent wh-in-situ, but Bokamba (1976:193 (66f)) provides one example suggesting that this pattern is not sensitive to islands, unlike in Romance. I leave this puzzle open for future research.
References


