Wh- Question Formation in Krachi

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**ABSTRACT**

This article describes *wh*- question formation in Krachi, an under-documented and threatened Kwa language of the North Guang branch of the Tano phylum. Krachi employs a variety of *wh*- question formation strategies, including the regionally and genetically prevalent strategies of *wh*- movement and *wh*- in-situ, as well as partial *wh*-movement, a highly marked phenomenon in Kwa. Based on original fieldwork, we investigate the properties of each question formation strategy, focusing on the distribution of *wh*- items and the constraints imposed upon interrogatives across each strategy. We compare these properties in Krachi with those in Akan, the most thoroughly studied Tano language, and find that although there are some similarities, the majority of the features defining Krachi *wh*- question formation are absent in Akan.

**KEYWORDS**

Krachi • *wh*- questions • *wh*- focus movement
• *wh*- in-situ • partial *wh*- focus movement
**Wh- Question Formation in Krachi**

1. Overview

This article describes *wh-* question formation in Krachi (alternatively spelled “Kaakye”, “Kaakyi”, “Kaci”, “Krache”, and “Krakye”), an under-documented and highly threatened Volta-Comoe language (Westermann and Bryan 1952, Greenberg 1963) of the North Guang branch of the Tano phylum of Kwa languages. Krachi employs a variety of *wh-* question formation strategies, including the regionally and genetically prevalent *wh-* ex-situ focus (1a) and *wh-* in-situ (1b) strategies, as well as partial *wh-* ex-situ focus (1c). These three strategies are illustrated below.²

(1)  

(a) Ne yi Kofi e-gyir fee ω-kyi wu e-mɔ?
   what FOC Kofi PST-say COMP CL-woman the PST-kill
   ‘What did Kofi say that the woman slaughtered?’

(b) Kofi e-gyir fee ω-kyi wu e-mɔ ne?
   Kofi PST-say COMP CL-woman the PST-kill what
   ‘What did Kofi say that the woman slaughtered?’

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¹ This article owes its existence to the help of the following native speaker consultants who generously provided the data on which it is based: Mark Nsekou Denteh, Matthew Donkor, and Joseph Agyei Korboe, for Krachi, and Peter Afful, Selassie Ahorlu, David Opoku, and Peter Owusu-Opoku, for Akan (Asante Twi). We also extend our sincere thanks to Kofi Agyekum, Mark Dundaa and the Ghana Institute for Linguistics, Literacy & Bible Translation (GILLBT), and Mr. Daniels Ananey Adonae for their logistical, material, and scholarly support.

The following abbreviations are used in the glosses of example sentences: CL – noun class marker; COMP – complementizer; FOC – focus; FUT – future; NEG – negative; PROG – progressive; PRS – present; PST – past; REL – relative pronoun; SG – singular.

² The Krachi data in this article are presented in the official Krachi orthography developed by the Ghana Institute for Linguistics, Literacy & Bible Translation (Dundaa 2007). Because the orthography does not mark Krachi’s two surface level tones (High and Low (Snider 1990, Adonae 2005)), we have omitted tone marking from our representations.
c. Kofi ɛ-ɡyɛn feɛ ne yɛ ɔ-kyɛ wu ɛ-mɔ?
Kofi PST-say COMP what FOC CL-woman the PST-kill
‘What did Kofi say that the woman slaughtered?’

The article is intended as a descriptive overview of *wh*- question formation in Krachi.

We survey a number of interrogative *wh*- phenomena in the language based on original fieldwork, including: *wh*- focus movement, the distribution of *wh*- in-situ in main and embedded clauses, embedded (indirect) questions, partial *wh*- focus movement, and constraints on *wh*- question formation such as islands, intervention effects, and superiority. We compare these properties in Krachi with those in Akan\(^3\), the most thoroughly studied Tano language, and find that although there are some similarities, the majority of the features defining Krachi *wh*- question formation are absent in Akan. The article constitutes a contribution to the small existing body of work on Krachi grammar (Korboe 2001, Korboe 2002, Agbedor and Adonae 2005, Dundaa Nd.) and will hopefully seed future research into this under-investigated threatened language.

The article is organized as follows. Section 2 provides a brief background on the Krachi language, highlighting the features of its grammar that are most relevant for the discussion that follows. Sections 3 and 4 focus on *wh*- in-situ in main and embedded complement clauses respectively. In Section 5 we discuss embedded (i.e. indirect) questions in the language, with a focus on the distribution of *wh*- items in the construction. Section 6 investigates partial *wh*- focus movement, while Section 7 explores constraints on *wh*- question formation in the language. Section 7 summarizes and concludes the article.

\(^3\) Unless otherwise noted, the Akan (Asante Twi) data presented in this article also come from original fieldwork.
2. Background on Krachi

Krachi is spoken in the Krachi West and Krachi East districts of the Volta region in central eastern Ghana. The Krachi-speaking area centers around the commercial center Kete Krachi, which is situated on Lake Volta. Krachi is a member of the Guang subgroup of the Kwa languages. Within Guang, Snider (1989) places Krachi in the River group of the North Guang languages. Adonae (2005), however, classifies Krachi as a Central Guang language. By all accounts, Krachi’s closest relative is Nchumburung (Cleal 1973). According to Adonae (2005), there are four dialects of Krachi: Central (spoken in Kete Krachi), West (spoken in the Kajaji, Nkomi and Odefour communities of the Sene district in the Brong Ahafo region), East (spoken in non-exclusively Krachi-speaking communities such as Dambai, Ayiremo, Kparekpare, and Tokoroano along the Oti River east of Kete Krachi) and North (spoken in the northern Volta region by a number of smaller communities along the main Krachi-Tamale road that border the Nchumburung communities). These four Krachi varieties are mutually intelligible, but dialectal differences are easily noticed by untrained native speakers. The data from this paper are drawn exclusively from the Central Krachi dialect.

Syntactically, Krachi is an SVO word order language.

(2) ɔ-kyi wu ɛ-mɔ bwate wu.
   cl-woman the pst-kill chicken the
   ‘The woman slaughtered the chicken.’

Like the so-called “Togo-Remnant” or “Togo Mountain” Kwa languages, Krachi has noun classes\(^4\), and a concordial agreement system. There is some disagreement as to

\(^4\) Krachi’s noun class system differentiates it from other Tano language, like Akan, which has only the remnants of a noun class system (Osam 1994).
the overall number of noun classes in the language. Dundaa (Nd.), for example, claims the existence of eight distinct classes, while Korboe (2002) analyzes Krachi as having eleven. See Korboe 2002 and Snider 1988 for details on the language’s noun class system. As illustrated below, the noun class of a particular noun can be determined by the class prefix on the noun, which may be phonetically null in certain cases.

(3)  
a. ɔ-kyi ‘woman’  
b. a-kyi ‘women’  
c. ku-kpuren ‘vulture’  
d. a-kpuren ‘vultures’  
e. ku-gyo ‘yam’  
f. i-gyo ‘yams’  
g. Ø-bwate ‘chicken’  
h. m-bwate ‘chickens’

Focused constituents are displaced in the language. They surface on the left edge of the clause and are immediately followed by the focus marker yι.5

(4)  
a. Kwaku e-tuŋ ku-gyo wu.  
   Kwaku PST-cut CL-yam the  
   ‘Kwaku cut the yam.’

   b. Kwaku yι e-tuŋ ku-gyo wu.  
      Kwaku FOC 3RD.SG-cut.PST CL-yam the  
      ‘It’s Kwaku who cut the yam.’

   c. Ku-gyo wu yι Kwaku e-tuŋ.  
      CL-yam the FOC Kwaku PST-cut  
      ‘It’s the yam that Kwaku cut.’

Wh- question formation in the language involves a number of interrogative expressions. The inventory of Krachi wh- items is given below in Table 1.6

5 A variant of the focus marker, lι, exists in a number of regional Krachi dialects spoken outside of Kete-Krachi (Adonai, p.c.). Although our speakers know that this form exists, they do not use it. For this reason, we have represented the focus marker as yι rather than lι in this article.
Table 1 - *Wh*- expressions in Krachi

<table>
<thead>
<tr>
<th><em>Wh</em>- Item</th>
<th>Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>nse</em></td>
<td>‘who’</td>
</tr>
<tr>
<td><em>ne</em></td>
<td>‘what’</td>
</tr>
<tr>
<td><em>nfire</em></td>
<td>‘where’</td>
</tr>
<tr>
<td><em>kemake</em></td>
<td>‘when’</td>
</tr>
<tr>
<td><em>neke</em></td>
<td>‘how’</td>
</tr>
<tr>
<td><em>nan</em></td>
<td>‘why’</td>
</tr>
<tr>
<td><em>ne kumusυ</em></td>
<td>‘why’</td>
</tr>
<tr>
<td><em>ne sv</em></td>
<td>‘why’</td>
</tr>
<tr>
<td><em>mumυ</em></td>
<td>‘which’</td>
</tr>
<tr>
<td><em>afire</em></td>
<td>‘how many’</td>
</tr>
</tbody>
</table>

6 The phonemic representation of Krachi *wh*- items varies from author to author. For example, Dundaa (Nd.) represents ‘who’ as *nse*, while Korboe (2002) and Snider (1989) take it to be *nse*. The form for ‘what’ is given by both Dundaa and Korboe as *ne*; however, Snider writes it as *naksu*. Other alternative representations of Krachi interrogative expressions include the following analyses: *mfire* ‘where’ (Dundaa), *p-fer* ‘where’ (Snider), *ka-make* ‘when’ (Snider), *naani* ‘why’ (Dundaa), *nan* ‘why’ (Snider), *θumυ* ‘which’ (Dundaa), and *a-fer* ‘how many’ (Snider). We speculate that these representational differences may stem from the fact that different authors had analyzed different dialects.

7 The item *ne kumusυ* is itself composed from the following components: *ne* ‘what’ + *kumus* ‘head’ + *sv* ‘on’. We have found that the expression *ne kumusυ* patterns identically with *nani* in all respects investigated in this article. We leave it for future research to determine what subtle differences (if any) exist between *nani* and *ne kumusυ*.

8 The item *ne sv* is composed of the pieces: *ne* ‘what’ + *sv* ‘on’. We have found that like *ne kumusυ* it also patterns identically with *nani* in all the respects investigated in this article and leave it for future research to determine what subtle differences (if any) exist between *nani* and *ne sv*. 

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5
Although a number of structural issues arise concerning the organization of the language’s \textit{wh-} paradigm (e.g. the prevalence of nasal-initial forms and front mid vowels, the use of reduplication in forms like ‘how’ and ‘which’, and the existence of apparent morphological roots in forms like ‘where’ and ‘how many’), we leave a thorough analysis for future research as it is likely that a fuller understanding of this paradigm will require data from different Krachi dialects and other North Guang languages.

3. Main clause \textit{wh-} in-situ

In main clauses, Krachi freely allows \textit{wh-} in-situ for nearly all non-subject interrogative expressions. (6a-b) show that both simple and complex \textit{wh-} items may appear clause-externally, while (6c-e) demonstrate that adjunct interrogative expressions may also appear in-situ. Note that unlike the instance of \textit{wh-} in-situ exemplified in (1b), the non-peripheral interrogatives below do not surface clause-finally. This illustrates that there is no requirement in the language that in-situ interrogatives must surface at the right edge of the clause.

(6) a. ɔ-kyি  wu ə-mɔ  nɛ ndiyɛ?
   \text{CL-woman the PST-kill what yesterday}
   ‘What did the woman slaughter yesterday?’

b. ɔ-kyি  wu ə-mɔ  bwatɛ  wu ɛ-mu  ndiyɛ?
   \text{CL-woman the PST-kill chicken the which yesterday}
   ‘Which chicken did the woman slaughter yesterday?’

c. ɔ-kyি  wu ə-mɔ  bwatɛ  wu nfiɛ bireŋ?
   \text{CL-woman the PST-kill chicken the where quickly}
   ‘Where did the woman slaughter the chicken quickly?’
d. ɔ-kyi wu e-mɔ bwate wu kemike bireŋ?
   CL-woman the PST-kill chicken the when quickly
   ‘When did the woman slaughter the chicken quickly?’

e. ɔ-kyi wu e-mɔ bwate wu nẹẹ ke-nyesɔ?
   CL-woman the PST-kill chicken the how CL-night
   ‘How did the woman slaughter the chicken at night?’

Non-subject interrogative expressions may also appear ex-situ in left peripheral focus positions, as illustrated in (7). We have been unable to detect any interpretive differences between the in-situ constructions in (6) and the ex-situ focus constructions in (7).

(7)  

a. Nẹ ẹt ɔ-kyi  wu e-mɔ ndiye?
   what FOC CL-woman the PST-kill yesterday
   ‘What did the woman slaughter yesterday?’

b. Bwate wu mumu ẹt ɔ-kyi  wu e-mɔ ndiye?
   chicken the which FOC CL-woman the PST-kill yesterday
   ‘Which chicken did the woman slaughter yesterday?’

c. Nfẹẹ ẹt ɔ-kyi  wu e-mɔ bwate wu bireŋ?
   where FOC CL-woman the PST-kill chicken the quickly
   ‘Where did the woman slaughter the chicken quickly?’

d. Kemike ẹt ɔ-kyi  wu e-mɔ bwate wu bireŋ?
   when FOC CL-woman the PST-kill chicken the quickly
   ‘When did the woman slaughter the chicken quickly?’

e. Nẹẹ ẹt ɔ-kyi  wu e-mɔ bwate wu ke-nyesɔ?
   how FOC CL-woman the PST-kill chicken the CL-night
   ‘How did the woman slaughter the chicken at night?’

The coexistence of both wh- in-situ and ex-situ wh- focus for non-subjects is attested in other Tano languages, such as the Akan cluster (Saah 1988). This property, however, differentiates these Tano languages from syntactically better-studied Kwa
languages like those of the Gbe cluster, for instance, which do not allow \textit{wh}- in-situ in non-echo questions (Aboh 2007).

Krachi \textit{wh}- subjects can also occur either in-situ or in focus, as illustrated below.

(8) a. \textit{Nsɛ e-kyə}\?
\begin{verbatim}
who PST-dance
\end{verbatim}
‘Who danced?’

b. \textit{Nsɛ yι o-kyə}\?
\begin{verbatim}
who FOC 3\textsuperscript{RD}.SG-dance.PST
\end{verbatim}
‘Who danced?’

The ability of \textit{wh}- subjects to freely occupy in-situ positions in non-multiple \textit{wh}-questions differentiates Krachi from other Tano languages like Akan. (9) below illustrates that in Asante Twi, a \textit{wh}- subject expression may not appear clause-internally, but rather must appear in an ex-situ focus position.

(9) Asante Twi
a. *\textit{Hena bɔɔ Ama}?
\begin{verbatim}
who hit.PST Ama
\end{verbatim}

b. \textit{Hena na o-bɔɔ Ama}?
\begin{verbatim}
who FOC 3\textsuperscript{RD}.SG-hit.PST Ama
\end{verbatim}
‘Who hit Ama?’

Thus, for Krachi, there is no subject/non-subject asymmetry with respect to \textit{wh}-in-situ in main clauses. Preliminary research suggests that Krachi’s distributional profile in this regard is atypical of Tano languages in general. Among the Central Tano languages, for example, Wasa and Bono have been shown to pattern like Asante Twi in constraining subject interrogative expressions from appearing in-situ (Torrence and Kandybowicz 2012, 2013). Cross-linguistically, as well, this
restrictive pattern is widely attested, further highlighting the special status of Krachi in-situ interrogative subjects. Restrictions on in-situ subject interrogatives have been documented in a variety of related and unrelated wh-in-situ languages, including Hausa (Green and Jaggar 2003), Zulu (Sabel and Zeller 2006), Kitharaka (Muriungi 2005), Kinyarwanda (Maxwell 1981), Dzamba (Bokamba 1976) and Malagasy (Potsdam 2006), among others.

Interestingly, unlike all other wh-expressions in Krachi, the item meaning ‘why’ (nani) cannot occur in-situ. Instead, it must surface on the left edge of the clause.

(10) a. *ɔ-kyi wu e-mo bwa e wu nani ndiye?
    CL-woman the PST-kill chicken the why yesterday

    b. Nani yi ɔ-kyi wu e-mo bwa e wu ndiye?
    why FOC CL-woman the PST-kill chicken the yesterday
    ‘Why (for what reason) did the woman slaughter the chicken yesterday?’

Overall, then, we have seen that there is a ‘why’/non-‘why’ asymmetry in Krachi.\footnote{A reviewer points out that in some languages wh-adverbials exhibit a duality in which they pattern like arguments in some cases and adjuncts in others. Tsai (1994), for example, showed that in Mandarin Chinese there is an instrumental ‘how’, which functions like an argument, and a manner ‘how’, which functions like an adjunct. The reviewer asks whether adjuncts like ‘how’ exhibit a comparable duality in Krachi. As it turns out, the wh-item nene ‘how’ is indeed ambiguous in the language. The data below reveal that the item can either be interpreted as a manner operator or as an instrumental because either (ib) or (ic) constitute appropriate possible answers to the question posed in (ia).}

Non-‘why’ interrogatives are highly flexible and can surface either clause-externally or

\footnote{\begin{align} (i) \quad & a. \; Q: \text{nene } y i \; ɔ-kyi \; w u \; e-mo \; b w a \; e \; w u ? \\
& \text{how } FOC \; CL-woman \; the \; PST-kill \; chicken \; the \\
& \text{‘How did the woman slaughter the chicken?’} \end{align}}
peripherally. ‘Why’, on the other hand, obligatorily surfaces on the left edge of the clause. Similar ‘why’/non-‘why’ asymmetries have been documented in other Niger-Congo languages including distantly related Bantu languages like Kiitharak (Muriungi 2005), Bakweri (Marlo & Odden 2007), Zulu (Buell 2011), and Lubukusu (Wasike 2007). They have also been observed in unrelated languages and language families, such as Italian (Rizzi 2001), Romanian (Shlonsky & Soare 2009), New Testament Greek (Kirk 2012), Persian (Karimi 2005), English (Hornstein 1995, Thornton 2008, Stepanov & Tsai 2008), Korean & Japanese (Ko 2005), and Chinese

\[\begin{align*}
\text{b. A: } & \quad \text{\textasciitilde ky\textonehalf wu e-mɔ bwate wu bireŋ.} \\
& \quad \text{(Manner ‘how’ reading)} \\
& \quad \text{\textasciitilde ky\textonehalf woman the PST-kill chicken the quickly} \\
& \quad \text{‘The woman slaughtered the chicken quickly.’} \\
\text{c. A: } & \quad \text{\textasciitilde ky\textonehalf wu e-mɔ bwate wu ye \textasciitilde sikan.} \\
& \quad \text{(Instrumental ‘how’ reading)} \\
& \quad \text{\textasciitilde ky\textonehalf woman the PST-kill chicken the with \textasciitilde knife} \\
& \quad \text{‘The woman slaughtered the chicken with a knife.’}
\end{align*}\]

However, with regard to its in-situ status we do not find a duality of behavior comparable to what Tsai observed in Mandarin. Unlike true \textit{wh}- adjuncts like \textit{nani} ‘why’, \textit{nene} is able to appear in-situ, regardless of its argument/adjunct status.

\[\begin{align*}
\text{(ii) a. Q: } & \quad \text{\textasciitilde ky\textonehalf wu e-mɔ bwate wu nene?} \\
& \quad \text{\textasciitilde ky\textonehalf woman the PST-kill chicken the how} \\
& \quad \text{‘How did the woman slaughter the chicken?’} \\
\text{b. A: } & \quad \text{\textasciitilde ky\textonehalf wu e-mɔ bwate wu bireŋ.} \\
& \quad \text{\textasciitilde ky\textonehalf woman the PST-kill chicken the quickly} \\
& \quad \text{‘The woman slaughtered the chicken quickly.’} \\
\text{c. A: } & \quad \text{\textasciitilde ky\textonehalf wu e-mɔ bwate wu ye \textasciitilde sikan.} \\
& \quad \text{\textasciitilde ky\textonehalf woman the PST-kill chicken the with \textasciitilde knife} \\
& \quad \text{‘The woman slaughtered the chicken with a knife.’}
\end{align*}\]

These considerations reinforce the generalization that with regard to the distribution of \textit{wh}- in-situ in the language, ‘why’ is exceptional. That is, we do not observe an argument-adjunct asymmetry. We observe a ‘why’-non-‘why’ asymmetry.

(11) Akan (Saah 1988)
   a. *Kwadwo bɔɔ Ama den ade nti?
      Kwadwo hit.PST Ama what thing why
   b. Den ade nti na Kwadwo bɔɔ Ama?
      what thing why FOC Kwadwo hit.PST Ama
      ‘Why did Kwadwo hit Ama?’
   c. *Wo-baa ha aden nti?
      2ND.SG-come.PST here reason why
   d. Aden nti na wo-baa ha?
      reason why FOC 2ND.SG-come.PST here
      ‘Why did you come here?’

4. Embedded clause wh- in-situ

Apart from the item ‘why’, all Krachi wh- expressions may appear in-situ in embedded complement clauses. The data in (12) illustrate this for subject expressions (12a), direct objects (12b), and adjuncts (12c-e). The ungrammatical example in (12f) confirms that just as in matrix clauses, ‘why’ cannot surface clause-internally.

(12) a. Kofi e-gyirí fɛɛ nɛɛ e-mɔ bwate wu?
       Kofi PST-say COMP who PST-kill chicken the
       ‘Who did Kofi say slaughtered the chicken?’
   b. Kofi e-gyirí fɛɛ ɔ-kyil wu e-mɔ nɛ ndiyɛ?
       Kofi PST-say COMP CL-woman the PST-kill what yesterday
       ‘What did Kofi say that the woman slaughtered yesterday?’
   c. Kofi e-gyirí fɛɛ ɔ-kyil wu e-mɔ bwate wu nfiɛ bireŋ?
       Kofi PST-say COMP CL-woman the PST-kill chicken the where quickly
       ‘Where did Kofi say that the woman slaughtered the chicken?’
d. Kofi e-gyirf fee a-kyi wu e-mɔ bwate wu kemke bire?  
Kofi PST-say COMP CL-woman the PST-kill chicken the when quickly  
‘When did Kofi say that the woman slaughtered the chicken quickly?’

e. Kofi e-gyirf fee a-kyi wu e-mɔ bwate wu nene ᵢe-nyesɔ?  
Kofi PST-say COMP CL-woman the PST-kill chicken the how CL-night  
‘How did Kofi say that the woman slaughtered the chicken at night?’

f. *Kofi e-gyirf fee a-kyi wu e-mɔ bwate wu nami ndiye?  
Kofi PST-say COMP CL-woman the PST-kill chicken the why yesterday

The availability of wh- in-situ in Krachi is not constrained by depth of embedding.  
The data in (13) below illustrate in-situ wh- items appearing in progressively more  
deeply embedded domains. The wh- expressions in (13b,c), for example, are doubly  
embedded and the resulting structures are grammatical.

(13) a. Kofi e-gyent fee Ama nyi ne?  
Kofi PRS-think COMP Ama know what  
‘What does Kofi think that Ama knows?’

b. Kofi e-gyent fee Ama nyi fee Kwame e-mɔ ne?  
Kofi PRS-think COMP Ama know COMP Kwame PST-kill what  
‘What does Kofi think that Ama knows that Kwame slaughtered?’

c. Kofi e-gyent fee Ama nyi fee Kwame e-mɔ bwate wu nene?  
Kofi PRS-think COMP Ama know COMP Kwame PST-kill chicken the how  
‘How did Kwame slaughter the chicken, according to what Kofi thinks Ama knows?’

The distribution of in-situ interrogatives in Krachi embedded domains is actually  
broader than the facts above suggest. Instances of wh- in-situ across more varied  
embedded domains in the language appear in Sections 5 and 7.1, when embedded  
questions and islands are taken into consideration.
Similar to their behavior in main clauses, embedded *wh*- items in the language may surface in focused left peripheral positions. The data below illustrate long-distance *wh*- focus dependencies in Krachi.

(14) a. Nsɛ ɣi Kofi ɛ-kwareɛgyi ʃee ɔ-mɔ bwaṭe wu?  
  who FOC Kofi PST-believe COMP 3rd.SG-kill.PST chicken the  
  ‘Who did Kofi believe slaughtered the chicken?’

b. Nɛ ɣi Kofi ɛ-kwareɛgyi ʃee ɔ-kyi wu ɛ-mɔ?  
what FOC Kofi PST-believe COMP CL-woman the PST-kill  
  ‘What did Kofi believe that the woman slaughtered?’

c. Nfɛre ɣi fe e-nu ʃee ɔ-kyi wu ɛ-mɔ bwaṭe wu?  
where FOC 2nd.SG PST-hear COMP CL-woman the PST-kill chicken the  
  ‘Where did the woman slaughter the chicken, according to what you heard?’

d. Kɛmike ɣi fe e-nu ʃee ɔ-kyi wu ɛ-mɔ bwaṭe wu?  
when FOC 2nd.SG PST-hear COMP CL-woman the PST-kill chicken the  
  ‘When did the woman slaughter the chicken, according to what you heard?’

e. Nene ɣi fe e-nu ʃee ɔ-kyi wu ɛ-mɔ bwaṭe wu?  
how FOC 2nd.SG PST-hear COMP CL-woman the PST-kill chicken the  
  ‘How did the woman slaughter the chicken, according to what you heard?’

f. Nan ɣi fe e-nu ʃee ɔ-kyi wu ɛ-mɔ bwaṭe wu?  
why FOC 2nd.SG PST-hear COMP CL-woman the PST-kill chicken the  
  ‘Why did the woman slaughter the chicken, according to what you heard?’

The availability of *wh*- in-situ in embedded contexts is a salient property that distinguishes Krachi from closely related languages. In Akan, for instance, all interrogative expressions are restricted from appearing in embedded domains in non-echo questions. This is shown below for non-subject and non-‘why’ in-situ interrogatives in Asante Twi complement clauses.
5. Embedded questions

Typological research has revealed that there is considerable cross-linguistic variation in verb selection for embedded questions. Due to this work, we know that different classes of verbs behave differently with respect to selection for embedded questions. For instance, in English (Huang 1982) and Mandarin Chinese (Cheng 1997) verbs like think and believe fail to select embedded questions, whereas verbs such as know do so optionally, and verbs like ask and wonder select for them obligatorily. In Krachi, only one verb (bise ‘ask’) selects for embedded questions. Other verbs that either optionally or obligatorily select for embedded questions in other languages express indirect question meanings via a relativization strategy.

To illustrate these selectional differences/restrictions, consider the verb ‘know’, which in English can optionally embed an indirect question. In Krachi, the verb nyi may not combine with a clause containing a wh- item, regardless of whether or not that wh- item appears in focus (16a,c,e) or in-situ (16b,d,f).
    1ST.SG know COMP who FOC 3RD.SG-kill.PST chicken the
    Intended: ‘I know who slaughtered the chicken.’

    b. *Mt nyi fɛɛ nɛ ɛ-mɔ bwaɛ wu.
    1ST.SG know COMP PST-kill chicken the
    Intended: ‘I know who slaughtered the chicken.’

    c. *Mt nyi fɛɛ ne yi Ama ɛ-mɔ.
    1ST.SG know COMP what FOC Ama PST-kill
    Intended: ‘I know what Ama slaughtered.’

    d. *Mt nyi fɛɛ Ama ɛ-mɔ ne.
    1ST.SG know COMP Ama PST-kill what
    Intended: ‘I know what Ama slaughtered.’

    e. *Mt nyi fɛɛ kɛmke yi Ama ɛ-mɔ bwaɛ wu.
    1ST.SG know COMP when FOC Ama PST-kill chicken the
    Intended: ‘I know when Ama slaughtered the chicken.’

    f. *Mt nyi fɛɛ Ama ɛ-mɔ bwaɛ wu kɛmke.
    1ST.SG know COMP Ama PST-kill chicken the when
    Intended: ‘I know when Ama slaughtered the chicken.’

To render the intended interpretations above, a relative clause construction must be
employed.

(17) a. Mt nyi ɔ-sɔ wu kɛ ɔ-mɔ bwaɛ wu.
    1ST.SG know CL-person the REL 3RD.SG-kill.PST chicken the
    ‘I know who slaughtered the chicken.’
    Literally: ‘I know the person that slaughtered the chicken.’

    b. Mt nyi aɔ wu kɛ Ama ɛ-mɔ.
    1ST.SG know thing the REL Ama PST-kill
    ‘I know what Ama slaughtered.’
    Literally: ‘I know the thing that Ama slaughtered.’

    c. Mt nyi kɛ-kɔ wu kɛ Ama ɛ-mɔ bwaɛ wu.
    1ST.SG PRS-know CL-time/day the REL Ama PST-kill chicken the
    ‘I know when Ama slaughtered the chicken.’
    Literally: ‘I know the time that Ama slaughtered the chicken.’
The majority of Krachi’s interrogative embedding verbs behave the same way. The data below illustrate that embedded *wh*-question complements (of either the focus or in-situ variety) are generally ruled out in favor of the relativization strategy.

(18) a. *Ye e-bo wi ṣnaŋwa fẹẹ nse (yi) e-mọ bwaṭe wu.  
    it PST-do 1ST.SG surprise COMP who FOC PST-kill chicken the  
    Intended: ‘I wondered who slaughtered the chicken.’

b. Ye e-bo wi ṣnaŋwa Ọ-ọ  ke  e-mọ bwaṭe wu.  
    it PST-do 1ST.SG surprise CL-person REL 3RD.SG-kill.PST chicken the  
    ‘I wondered who slaughtered the chicken.’  
    Literally: ‘I wondered about the person that slaughtered the chicken.’

c. *Mt e-ŋwu ẹẹ (nẹ yi) Ama e-mọ (nẹ).  
    1ST.SG PST-learn COMP what FOC Ama PST-kill what  
    Intended: ‘I learned what Ama slaughtered.’

d. Mt e-ŋwu aọ  ke  Ama e-mọ.  
    1ST.SG PST-learn thing REL Ama PST-kill  
    ‘I learned what Ama slaughtered.’  
    Literally: ‘I learned about the thing that Ama slaughtered.’

e. *Mt e-tẹso ẹẹ (kẹmike yi) Ama e-mọ bwaṭe wu (kẹmike).  
    1ST.SG PST-forget COMP when FOC Ama PST-kill chicken the when  
    Intended: ‘I forgot when Ama slaughtered the chicken.’

f. Mt e-tẹso ke-kọ  ke  Ama e-mọ bwaṭe wu.  
    1ST.SG PST-forget CL-time/day REL Ama PST-kill chicken the  
    ‘I forgot when Ama slaughtered the chicken.’  
    Literally: ‘I forgot the time that Ama slaughtered the chicken.’

The verb *bise* ‘ask’, however, behaves in a different and exceptional way, as alluded to above. Indirect question interpretations are possible through relativization, as with the embedding verbs previously considered. In addition, *bise* may combine
directly with an embedded clause containing an ex-situ focused *wh*-expression to produce a true embedded question construction. The data below illustrate.

   1ST.SG PST-ask CL-person REL 3RD.SG kill.PST chicken the
   ‘I asked who slaughtered the chicken’.
   Literally: ‘I asked about the person that slaughtered the chicken.’

   b. Mt e-bise fẹẹ nṣẹ ẹyi ẹ-mọ bwaṭe wu.
   1ST.SG PST-ask COMP who FOC 3RD.SG kill.PST chicken the
   ‘I asked who slaughtered the chicken.’

   c. Mt e-bise atọ kẹ Ama ẹ-mọ.
   1ST.SG PST-ask thing REL Ama PST-kill
   ‘I asked what Ama slaughtered.’
   Literally: ‘I asked about the thing that Ama slaughtered.’

   d. Mt e-bise fẹẹ ne ẹyi Ama ẹ-mọ.
   1ST.SG PST-ask COMP what FOC Ama PST-kill
   ‘I asked what Ama slaughtered.’

   e. Mt e-bise ke-kọ kẹ Ama ẹ-mọ bwaṭe wu.
   1ST.SG PST-ask CL-time/day REL Ama PST-kill chicken the
   ‘I asked when Ama slaughtered the chicken.’
   Literally: ‘I asked about the time that Ama slaughtered the chicken.’

   f. Mt e-bise fẹẹ kemke ẹyi Ama ẹ-mọ bwaṭe wu.
   1ST.SG PST-ask COMP when FOC Ama PST-kill chicken the
   ‘I asked when Ama slaughtered the chicken.’

In Section 4, we demonstrated that with the exception of ‘why’ *wh*-in-situ is available within embedded complement clauses in the language. We can now enrich this generalization by considering the distribution of *wh*-in-situ in embedded questions. Consistent with our generalization, all *wh*-items apart from *nani* ‘why’ may appear in their base-generated positions within embedded question complements of *bise*. The data in (20) below demonstrate. In the case of ‘why’, where the
embedded \(wh\)- in-situ strategy is unavailable (20f), the two remaining options are available: embedded ex-situ \(wh\)- focus (20g) and relativization (20h).

(20) a. Mt e-bise fee nse e-mo bate wu.
    \(1^{st}\).SG PST-ask COMP who PST-kill chicken the
‘I asked who slaughtered the chicken.’

b. Mt e-bise fee Ama e-mo nes.
    \(1^{st}\).SG PST-ask COMP Ama PST-kill what
‘I asked what Ama slaughtered.’

c. Mt e-bise fee Ama e-mo bate wu ntire.
    \(1^{st}\).SG PST-ask COMP Ama PST-kill chicken the where
‘I asked where Ama slaughtered the chicken.’

d. Mt e-bise fee Ama e-mo bate wu kemke.
    \(1^{st}\).SG PST-ask COMP Ama PST-kill chicken the when
‘I asked when Ama slaughtered the chicken.’

e. Mt e-bise fee Ama e-mo bate wu nene.
    \(1^{st}\).SG PST-ask COMP Ama PST-kill chicken the how
‘I asked how Ama slaughtered the chicken.’

f. *Mt e-bise fee Ama e-mo bate wu nanu.
    \(1^{st}\).SG PST-ask COMP Ama PST-kill chicken the why
Intended: ‘I asked why Ama slaughtered the chicken.’

g. Mt e-bise fee nani yi Ama e-mo bate wu.
    \(1^{st}\).SG PST-ask COMP why FOC Ama PST-kill chicken the
‘I asked why Ama slaughtered the chicken.’

h. Mt e-bise ku-musu ke Ama e-mo bate wu.
    \(1^{st}\).SG PST-ask CL-reason REL Ama PST-kill chicken the
‘I asked why Ama slaughtered the chicken.’
Literally: ‘I asked about the reason that Ama slaughtered the chicken.’

6. Partial \(wh\)- focus movement

We have shown that Krachi allows both \(wh\)- ex-situ and \(wh\)- in-situ. This section documents the fact that Krachi also allows partial \(wh\)- focus movement. To our knowledge, this is the first report of partial \(wh\)- movement in any Kwa language.
Regardless of their thematic status, all *wh*- expressions in Krachi may undergo partial movement to a peripheral focus position in an embedded clause. (Support for characterizing ex-situ *wh*- distributions as the by-products of movement comes from island effects, which we discuss in the next section.) In the data below, we demonstrate that both displaced argument (21a-d) and adjunct (21e-h) *wh*- expressions from an embedded clause can take main clause scope (as indicated by the translations), despite surfacing lower in an embedded position.10 In Krachi,

\[\text{(Neutral)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Ama} \_\_\_\text{e-} \_\_\_\text{Kofi}\]
\[\text{He/she said that Ama saw Kofi.}\]
\[\text{(Embedded subject focus)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Ama} \_\_\_\text{FOC} \_\_\_\text{3RD} \_\_\_\text{Kofi} \_\_\_\text{see.} \_\_\_\text{PST}\]
\[\text{He/she said that it was Ama who saw Kofi.}\]
\[\text{(Embedded object focus)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Kofi} \_\_\_\text{FOC} \_\_\_\text{Ama} \_\_\_\text{see.} \_\_\_\text{PST}\]
\[\text{He/she said that it was Kofi who Ama saw.}\]

However, binding facts reveal that in these shifted positions, embedded non-interrogative foci cannot take wide scope like partially focused *wh*- expressions can. The representations below capture the fact that in constructions like (ib-c) the embedded focused nominal is unable to bind/act as an antecedent for the matrix subject pronominal.

\[\text{(Neutral)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Ama} \_\_\_\text{e-} \_\_\_\text{Kofi}\]
\[\text{He/she said that Ama saw Kofi.}\]
\[\text{(Embedded subject focus)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Ama} \_\_\_\text{FOC} \_\_\_\text{3RD} \_\_\_\text{Kofi} \_\_\_\text{see.} \_\_\_\text{PST}\]
\[\text{He/she said that it was Ama who saw Kofi.}\]
\[\text{(Embedded object focus)}\]
\[3\text{RD} \_\_\_\text{say.} \_\_\_\text{PST} \_\_\_\text{COMP} \_\_\_\text{Kofi} \_\_\_\text{FOC} \_\_\_\text{Ama} \_\_\_\text{see.} \_\_\_\text{PST}\]
\[\text{He/she said that it was Kofi who Ama saw.}\]

Thus, we observe a crucial difference between interrogative and non-interrogative focused expressions in Krachi – only the former can undergo partial focus movement.

\[\text{10} \text{A reviewer asks whether embedded non-interrogative expressions in the language can undergo focus movement to an intermediate peripheral position and whether or not in this shifted state they can take matrix scope. The data below show that it is indeed possible for non-interrogative expressions to undergo short focus movement into an embedded/intermediate focus position.}\]
partial wh- focus movement to any peripheral embedded position is tolerated, as demonstrated by the data below, which show that an embedded wh- expression can partially move to either the most embedded focus position or to a focus position in an intermediate clause.

(21) a. Kofi e-gyi fe Ama nyi fe nse yi e-mo bwate wu?
   Kofi PST-say COMP Ama know COMP who FOC 3rd.SG-kill.PST chicken the
   ‘Who did Kofi say that Ama knows slaughtered the chicken?’

   b. Kofi e-gyi fe nse yi Ama nyi fe e-mo bwate wu?
   Kofi PST-say COMP who FOC Ama know COMP 3rd.SG-kill.PST chicken the
   ‘Who did Kofi say that Ama knows slaughtered the chicken?’

   c. Kofi e-gyi fe Ama nyi fe ne yi Kwame e-mo?
   Kofi PST-say COMP Ama know COMP what FOC Kwame PST-kill
   ‘What did Kofi say that Ama knows that Kwame slaughtered?’

   d. Kofi e-gyi fe ne yi Ama nyi fe Kwame e-mo?
   Kofi PST-say COMP who FOC Ama know COMP Kwame PST-kill
   ‘What did Kofi say that Ama knows that Kwame slaughtered?’

   e. Kofi e-nu fe nfire yi Ama e-mo bwate wu?
   Kofi PST-hear COMP where FOC Ama PST-kill chicken the
   ‘Where did Kofi hear that Ama slaughtered the chicken?’

   f. Kofi e-nu fe kemoke yi Ama e-mo bwate wu?
   Kofi PST-hear COMP when FOC Ama PST-kill chicken the
   ‘When did Kofi hear that Ama slaughtered the chicken?’

   g. Kofi e-nu fe nene yi Ama e-mo bwate wu?
   Kofi PST-hear COMP how FOC Ama PST-kill chicken the
   ‘How did Kofi hear that Ama slaughtered the chicken?’

   h. Kofi e-nu fe nanu yi Ama e-mo bwate wu?
   Kofi PST-hear COMP why FOC Ama PST-kill chicken the
   ‘Why did Ama slaughter the chicken, according to what Kofi heard?’
Note that in Krachi partial *wh*-focus movement constructions, the moved interrogative is unaccompanied by an overt question particle in the clause where it takes scope (i.e. the main clause). Because no such scope-marking particle appears in the root clause, we can identify the breed of partial *wh*-movement attested in the language as “naked partial movement”, referencing Fanselow’s (2006) typology.

In the closely related Akan language Asante Twi, partial *wh*-focus movement is not available, regardless of the thematic status of the interrogative expression. Example (22a) below shows that long-distance movement of a *wh*-object of an embedded clause into a root clause focus position is possible. However, it is not possible for that interrogative to undergo a shorter movement into the embedded clause focus position, marked by *na* (22b). Note too that the presence or absence of the complementizer *se* has no effect on the grammaticality of partial focus movement in Asante Twi.

(22) Asante Twi
a. Hena na wo dwene *se* Kofi bɔɔye?
   who FOC 2ND.SG think COMP Kofi hit.PST
   ‘Who do you think Kofi hit?’

b. *Wo dwene (*se*) hena na Kofi bɔɔye?
   2ND.SG think COMP who FOC Kofi hit.PST

Surprisingly, in Akyem, also from the Akan cluster, this restriction does not appear to hold and partial *wh*-focus movement seems possible. The example below is taken from Boadi (2005), who only presented one such example, but did not formally recognize it as exemplifying the phenomenon of partial focus movement.
These facts raise the descriptive question of exactly how widespread partial *wh*-focus movement is across the Tano languages and the Kwa languages more generally. It is probably not a coincidence that both Krachi and Akyem have partial *wh*-focus movement, even though this is not possible in Asante Twi. This distribution might suggest that Krachi and Akyem have retained an older construction that has been lost in Asante Twi. If this is correct, we might expect that the partial *wh*-focus movement construction has been retained in other members of the Akan cluster as well as in other Tano languages. We leave this as an open question for future research.

7. **Constraints on *wh*-movement**

In previous sections, we have shown that Krachi allows for three *wh*-interrogative strategies. In this section, we discuss how these three strategies are constrained in the language. Specifically, we look at islands, intervention effects, and superiority.

7.1. **Islands**

Ross (1967) identified several syntactic domains out of which *wh*-movement yields either very marginal or ungrammatical results. He called these domains “islands”. In the case of *wh*-movement, it is known that island effects can be ameliorated by simply not moving the offending *wh*-expression (i.e. by leaving the *wh*-item in-situ). In fact, there are a number of languages in which in-situ *wh*-expressions are immune
to island effects. For example, certain wh-items in French (Obenauer 1994, Starke 2001), Mandarin Chinese (Huang 1981), and Japanese (Lasnik & Saito 1984) among others, though unable to move out of islands, may appear in-situ island-internally. Krachi is an interesting language to look at with respect to islands because, as we have shown, it freely allows for both wh-focus movement and wh-in-situ.

Sentential subjects like the bracketed string in (24a) below are islands for movement in the language. This is demonstrated in (24b), where moving the wh-expression ne ‘what’ out of the sentential subject gives rise to ungrammaticality. In other words, Krachi wh-focus movement is subject to the Sentential Subject Constraint (Ross 1967). However, (24c) shows that a sentential subject can host an in-situ wh-item and be interpreted as a genuine wh-question.11

   REL Kofi PST-kill chicken the it do 1ST.SG surprise
   ‘That Kofi slaughtered the chicken is surprising (to me).’

b. *Ne yi [kɛ Kofi e-mɔ] ye wa wi ɲwaŋwa?
   what FOC REL Kofi PST-kill it do 1ST.SG surprise

c. [Kɛ Kofi e-mɔ ne] ye wa wi ɲwaŋwa?
   REL Kofi PST-kill what it do 1ST.SG surprise
   ‘That Kofi slaughtered what is surprising (to me)?’
   (‘What is the x, such that Kofi’s slaughtering of x is surprising (to me)?’)

Similarly, Krachi relative clauses are also islands for movement. (25a) below shows a relative clause in the language. The ungrammaticality of (25b), in which a

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11 According to our native speaker consultants, questions like (24c) can be issued in out-of-the-blue contexts and thus, are not restricted to echo question contexts such as those in which the questioner is merely requesting clarification on a misheard item or expressing surprise.
relative clause-internal *wh-* item has undergone movement beyond the relative clause edge, indicates that it is not possible to move a *wh-* expression out of a relative clause. As such, *wh-* focus movement in Krachi is also subject to Ross’ (1967) Complex Noun Phrase Constraint. As with sentential subjects, though, island constraints may be circumvented and *wh-* question formation may proceed via *wh-* in-situ. (25c) illustrates that an in-situ *wh-* item in a relative clause yields a grammatical matrix scope question.

   Kofi know CL-woman the REL 3RD.SG-kill.PST chicken the ‘Kofi knows the woman who slaughtered the chicken.’

b. *Nɛ yi Kofi nyi [ɔ-kyɪ wu kɛ ɔ-mɔ]?[‘What is the x, such that Kofi knows the woman who slaughtered x?’)

c. Kofi nyi [ɔ-kyɪ wu kɛ ɔ-mɔ ne]?[‘What is the x, such that Kofi knows the woman who slaughtered what?’)
   ‘Kofi knows the woman who slaughtered what?’

Ross also observed that neither of the conjuncts in a conjoined constituent could be *wh-* moved (the so-called Coordinate Structure Constraint). As we show below, *wh-* focus movement in Krachi is also subject to the Coordinate Structure Constraint. (26a) gives the input structure with a coordinated object constituent. Neither the first conjunct (26b) nor the second conjunct (26c) can be extracted out of the coordinated constituent, but if either *wh-* item is left in-situ (26d-e), the result is a grammatical question where the interrogative item takes main clause scope.

(26) a. ɔ-kyɪ wu e-mɔ [bwatɛ wu ye gyoro wu].
   CL-woman the PST-kill chicken the and dog the ‘The woman slaughtered the chicken and the dog.’
Finally, *wh*- focus movement in Krachi is also constrained by the Adjunct Condition, which forbids extraction out of an adjunct phrase such as a temporal adverbial clause. In (27a) below, the bracketed adjunct ‘before’ clause contains the direct object *bwate wu* ‘the chicken’. (27b) shows the ungrammatical result of moving the object *wh*- expression *ne* out of the ‘before’ clause. (27c), however, demonstrates that if the *wh*- item is left in-situ inside of the island, the result is a grammatical *wh*- question with root clause scope.

(27) a. Kofi *e-kyi* [ŋsanŋ *ο-kyi* wu *e-mɔ* *bwate wu*].
Kofi PST-dance before CL-woman the PST-kill chicken the
‘Kofi danced before the woman slaughtered the chicken.’

b. *Ne yi Kofi *e-kyi* [ŋsanŋ *ο-kyi* wu *e-mɔ*]?
what FOC Kofi PST-dance before CL-woman the PST-kill

Kofi PST-dance before CL-woman the PST-kill what
‘Kofi danced before the woman slaughtered what?’
(‘What is the x, such that Kofi danced before the woman slaughtered x?’)
Similar results obtain in attempts to move adjunct *wh-* items like *nfire* ‘where’ out of adjunct clauses. Note that (28a) below is grammatical, but only when the *wh-* expression is construed with the main clause predicate ‘dance’, indicating movement from a root clause-internal position. The sentence cannot be interpreted as asking about the location of the slaughtering event, hence the judgment “#” when the moved interrogative takes narrow scope over the embedded verb ‘kill’. However, it is possible to form a *wh-* question in which ‘where’ is construed with the adjunct-internal predicate ‘kill’ if the item is left in-situ in the adjunct clause. This is shown in (28b).

(28) a. *Nofire yi Kofi e-kyia [ŋsɛŋ ɔ-kyi wu e-mɔ bwate wu]?
   where FOC Kofi PST-dance before CL-woman the PST-kill chicken the
   ‘Where did Kofi dance before the woman killed the chicken?’
   #‘What is the location x, such that Kofi danced before the woman
   slaughtered the chicken at x?’

b. *Kofi e-kyia [ŋsɛŋ ɔ-kyi wu e-mɔ bwate wu nfire]?
   Kofi PST-dance before CL-woman the PST-kill chicken the where
   ‘Kofi danced before the woman slaughtered the chicken where?’
   (‘What is the location x, such that Kofi danced before the woman
   slaughtered the chicken at x?’)

In Akan, islands have the same limiting effect on *wh-* question formation that they do in Krachi; however, the effect is more severe. As the data below establish, *wh-* extraction from an island is blocked, as in Krachi. But unlike Krachi, island-internal interrogatives may not appear in-situ as an alternative *wh-* question formation strategy. (29a) illustrates a temporal adjunct clause, which takes the form of a relative clause in Asante. (29b-c) show that *wh-* focus movement from the island is not possible, while (29d-e) show that *wh-* in situ is likewise prohibited.
(29) a. Na me re-sua ade [abere na Kofi bɔɔ Ama no].
PST 1ST.SG PROG-study thing time REL Kofi hit.PST Ama the ‘I was studying when Kofi hit Ama.’

b. *Hena na na me re-sua ade [abere na bɔɔ Ama no]?
who FOC PST 1ST.SG PROG-study thing time REL hit.PST Ama the
Intended: ‘Who is the x, such that I was studying when x hit Ama?’

c. *Hena na na me re-sua ade [abere na Kofi bɔɔ no]?
who FOC PST 1ST.SG PROG-study thing time REL who hit.PST the
Intended: ‘Who is the x, such that I was studying when Kofi hit x?’

d. *Na me re-sua ade [abere na hena bɔɔ Ama no]?
PST 1ST.SG PROG-study thing time REL who hit.PST Ama the
Intended: ‘Who is the x, such that I was studying when x hit Ama?’

e. *Na me re-sua ade [abere na Kofi bɔɔ hena no]?
PST 1ST.SG PROG-study thing time REL Kofi hit.PST who the
Intended: ‘Who is the x, such that I was studying when Kofi hit x?’

Thus, whereas islands merely limit the means by which wh- question formation may proceed in Krachi, they outright block wh- question formation in Akan.

While wh- focus movement out of an island is forbidden in Krachi, partial wh-focus movement inside an island is allowed. (30a) below shows an argument interrogative item partially moved to the embedded focus position (marked by υι), while (30b) illustrates an adjunct wh- expression undergoing partial movement.

(30) a. Kofī e-kya [aŋsαŋ nɛ yi ɔ-kyi wu e-mɔ]?  
Kofī PST-dance before what FOC CL-woman the PST-kill  
‘Kofi danced before the woman slaughtered what?’  
(‘What is the x, such that Kofi danced before the woman slaughtered x?’)

b. Kofī e-kya [aŋsαŋ nfiŋe yi ɔ-kyi wu e-mɔ bwate wu]?  
Kofī PST-dance before where FOC CL-woman the PST-kill chicken the  
‘Kofi danced before the woman slaughtered the chicken where?’  
(‘What is the location x, such that Kofi danced before the woman slaughtered the chicken at x?’)
As we have seen in other cases, ‘why’ patterns differently from the other *wh-* expressions in the language. As expected, ‘why’ cannot appear in-situ inside of a ‘before’-clause island:

(31) *Kofi e-kyaa [ŋsan e-kyi wu e-mo bwate wu nanu]?
    Kofi PST-dance before CL-woman the PST-kill chicken the why

Surprisingly, though, despite the fact that ‘why’ may undergo partial *wh-* focus movement in non-island domains (cf. (21h)) and that island-internal partial movement is independently available in the language (cf. (30)), it is not possible to partially move ‘why’ in an adjunct island configuration. This is illustrated below in (32).

(32) *Kofi e-kyaa [ŋsana nan yi e-kyi wu e-mo bwate wu]?
    Kofi PST-dance before why FOC CL-woman the PST-kill chicken the why
    Intended: ‘What is the reason x, such that Kofi danced before the woman slaughtered the chicken for x?’

Because partial *wh-* focus movement is unattested in Akan (cf. (22b)), we cannot compare island-internal partial *wh-* focus movement patterns in Krachi and Akan.

7.2. Intervention effects

We have shown above that there are constraints on *wh-* focus movement in Krachi. In this section, we demonstrate that there are constraints on *wh-* in-situ in the language as well. Specifically, we show that *wh-* in-situ in Krachi is sensitive to so-called “intervention effects”, first described in Beck 1996. Descriptively, an intervention effect arises when one of a certain class of items (an “intervener”) occurs between the
surface position of a *wh*- expression and the left edge of the clause (i.e. where the focus marker would occur in Krachi). The discovery of intervention effects in Krachi builds on the work of Kobele and Torrence (2006), who demonstrated the existence of intervention effects in Asante Twi. Specifically, Kobele and Torrence showed that in Asante Twi, negation cannot intervene between an in-situ *wh*- expression and the left edge of the clause, as shown below.

(33) Asante Twi (Kobele and Torrence 2006)
   a. Kofi bɔɔ hena?
      Kofi hit.PST who
      ‘Who did Kofi hit?’
   
   b. *Kofi a-m-bɔ hena?
      Kofi PST-NEG-hit who
      Intended: ‘Who did Kofi not hit?’
   
   c. Hena na Kofi a-m-bɔ (no)?
      who FOC Kofi PST-NEG-hit 3RD.SG
      ‘Who did Kofi not hit?’

(33a) establishes the fact that Asante Twi independently allows *wh*- in-situ. The contrast in grammaticality between (33a) and (33b) shows that a *wh*- expression cannot appear in-situ if negation (*m*) occurs between the *wh*- item and the left edge of the clause. (33c) illustrates that it is not merely the presence of negation that is the problem in (33b). If a *wh*- expression is focus fronted so that negation no longer intervenes between the *wh*- item and the left edge of the clause, the intervention effect is cancelled and the resulting interrogative is grammatical (33c). More formally, an intervention effect arises when a *wh*- expression surfaces in the c-command domain of an intervener. As it turns out, negation is a common

The data in (34) below, elicited utilizing appropriate contexts following in the spirit of Engdahl 2006, illustrate that interrogative expressions in Krachi must take surface scope over negation by way of obligatory wh-focus fronting. Examples (34a) and (34c), with argument and adjunct wh-items,\(^{12}\) show that wh-expressions cannot surface in the c-command domain of negation, marked by the prefix \(n\)-. However, if the vulnerable wh-item is moved higher into a left peripheral focus position where it is no longer c-commanded by negation, the resulting question becomes grammatical. This is illustrated in (34b) and (34d). Because subjects c-command negation in Krachi root clauses, no intervention effect arises when interrogative subjects appear in-situ in negative clauses. In other words, in-situ interrogative subjects need not be fronted into the left periphery in the presence of verbal negation, as demonstrated by (34e).

(34) a. *ɔ-kyɛ wu ɛ-n-ɗika ne?
    CL-woman the PST-NEG-cook what
    (\(\neg\) NEG c-commands ‘what’)  

b. Ne ɣ yɛ ɔ-kyɛ wu ɛ-n-ɗika?
    what FOC CL-woman the PST-NEG-cook
    ‘What didn’t the woman cook?’
    (\(\hat{\phi}\) ‘What’ c-commands NEG)

\(^{12}\) As discussed in note 9, the Krachi expression \(nɛnɛ\) can either function as a manner or instrumental interrogative operator. The intervention effect illustrated in (34c) holds regardless of whether ‘how’ is interpreted as a manner expression or as an instrumental, illustrating that in either case negation c-commands the in-situ operator.
c. *ɔ-kti \(wu\) e-\(n\)-\(d\)\(k\)a ku-gyo \(wu\) nene?
   CL-woman the PST-NEG-cook CL-yam the how
   (\(\Box\) NEG c-commands ‘how’)

d. N\(\Box\)ẹ \(w\)u ɔ-kti \(wu\) e-\(n\)-\(d\)\(k\)a ku-gyo \(wu\)?
   how FOC CL-woman the PST-NEG-cook CL-yam the
   ‘How didn’t the woman cook yam?’
   (\(\Box\) ‘How’ c-commands NEG)

e. N\(s\)\(e\) \(w\)u \(\Box\) \(e\)-\(n\)-\(d\)\(k\)a ku-gyo \(wu\)?
   who PST-NEG-cook CL-yam the
   ‘Who didn’t cook yam?’
   (\(\Box\) ‘Who’ c-commands NEG)

Interestingly, in-situ temporal and locative \(wh\)- expressions are grammatical when
negation occurs between them and the left edge of the clause.

(35) a. ɔ-kti \(wu\) e-\(n\)-\(d\)\(k\)a ku-gyo k\(ɛ\)\(m\)\(k\)\(ɛ\)?
   CL-woman the PST-NEG-cook CL-yam when
   ‘When didn’t the woman cook yam?’

b. ɔ-kti \(wu\) e-\(n\)-\(d\)\(k\)a ku-gyo nf\(ɛ\)\(r\)e?
   CL-woman the PST-NEG-cook CL-yam where
   ‘Where didn’t the woman cook yam?’

We take the grammaticality of (35a-b) as indicating that the adjuncts ‘when’ and
‘where’ in Krachi are attached higher than/outside the c-command domain of
negation, roughly:

(36) 
\[\begin{array}{c}
\text{k\(ɛ\)\(m\)\(k\)\(ɛ\)/nf\(ɛ\)\(r\)e} \\
\text{when/where}
\end{array}\]
\[\begin{array}{c}
\text{ɔ-kti \(wu\) e-\(n\)-\(d\)\(k\)a ku-gyo}
\text{CL-woman the PST-NEG-cook CL-yam}
\end{array}\]
In addition to negation, certain modals like *fυŋk* ‘might’ also induce intervention effects in Krachi. That is, the modal *fυŋk* cannot intervene between a *wh-* expression and the left edge of the clause. This is demonstrated by the ungrammaticality of (37a) and (37c)\(^\text{13}\) below. As with negation, an in-situ *wh-* item is only vulnerable when c-commanded by the intervener. Thus, co-occurrence of a *wh-* item and *fυŋk* is possible in the case of (37b) and (37d) because the *wh-* item has been fronted so that the modal no longer intervenes. Subject *wh-* expressions, as in (37e), occur to the left of (and higher than) *fυŋk* and therefore, intervention effects fail to obtain when in-situ subject interrogatives appear in ‘might’ clauses in the language.

(37)

a. *ɔ-kyt wu *fυŋk* ke-mɔ nɛ?
    CL-woman the might FUT-kill what

b. Nɛ ɣi ɔ-kyt wu *fυŋk* ke-mɔ?
    what FOC CL-woman the might FUT-kill
    ‘What might the woman slaughter?’

c. *ɔ-kyt wu *fυŋk* ke-mɔ bwatɛ wu nɛnɛ?
    CL-woman the might FUT-kill chicken the how

d. Nɛnɛ ɣi ɔ-kyt wu *fυŋk* ke-mɔ bwatɛ wu?
    how FOC CL-woman the might FUT-kill chicken the
    ‘How might the woman slaughter the chicken?’

e. Nɛ *fυŋk* ke-mɔ bwatɛ wu?
    who might FUT-kill chicken the
    ‘Who might slaughter the chicken?’

\(^\text{13}\) Once again, the intervention effect in (37c) obtains regardless of the interpretation of *nɛnɛ* (manner or instrumental). See notes 9 and 12.
Similar to the negation case, an adjunct like *kemike* ‘when’ can occur to the right of *fŋkɪ* (cf. (38)), but we assume that this is because it is adjoined higher than the modal, as in (36).

(38) ɔ-kyu wu *fŋkɪ* ke-mɔ bwa te wu *kemike*?
    CL-woman the might FUT-kill chicken the when
    ‘When might the woman slaughter the chicken?’

At this stage of our research, we have been unable to determine whether modal expressions like ‘might’ induce intervention effects in Akan as well. We leave this as an open question for future research. Thus, for now, ‘might’ is a Krachi-specific intervener.

Beck (2006) considers focus-induced intervention to be the core intervention effect. In languages like Korean (Beck and Kim 1997) and French (Mathieu 1999), the focus item ‘only’ acts as an intervener. In Asante Twi, as well, the item *nkoara* ‘only’ constrains the distribution of *wh*- in-situ, as shown below. In (39a), when ‘only’ appears to the left of an in-situ *wh*- item, *wh*- question formation is blocked. In (39b), on the other hand, *wh*- focus movement past the intervening item cancels the intervention effect. Thus, in the presence of a structurally superior occurrence of ‘only’, *wh*- focus fronting becomes obligatory in Asante Twi.

(39) Asante Twi
   a. *Kofi nkoara bɔɔ hena?
      Kofi only hit.PST who

   b. Hena na Kofi *nkoara* bɔɔ (no)?
      who FOC Kofi only hit.PST 3RD.SG
      ‘Who did only Kofi hit?’
In Krachi, however, ‘only’ does not have the status of an intervener. The data below show that \(wh\)- in-situ is not compromised when \(doo\) ‘only’ precedes an unmoved interrogative expression. As such, \(wh\)- focus movement is not obligatory in the language when preceded by ‘only’, an unexpected result given Beck 2006. This finding may suggest that in-situ \(wh\)- items in the language are not focused.

\[(40)\]
\[
a. \text{ɔ-kyi wu doo e-mɔ ne?} \\
\text{CL-woman the only PST-kill what} \\
\text{‘What did only the woman slaughter?’}
\]
\[
b. \text{ɔ-kyi wu doo e-mɔ bwate wu kemke?} \\
\text{CL-woman the only PST-kill chicken the when} \\
\text{‘When did only the woman slaughter the chicken?’}
\]
\[
c. \text{ɔ-kyi wu doo e-mɔ bwate wu nene?} \\
\text{CL-woman the only PST-kill chicken the how} \\
\text{‘How did only the woman slaughter the chicken?’}
\]

In languages like French, the item ‘even’ acts as an intervener, constraining the distribution of \(wh\)- in-situ (Mathieu 1999). In Asante Twi as well, the item \(mpo\) ‘even’ has the status of an intervener and as such, forces \(wh\)- focus movement. Consider the data below.

\[(41)\] Asante Twi
\[
a. *\text{Kofi mpo bɔɔ hena?} \\
\text{Kofi even hit.PST who}
\]
\[
b. \text{Hena na Kofi mpo bɔɔ (no)?} \\
\text{who FOC Kofi even hit.PST 3\textsuperscript{rd}.SG} \\
\text{‘Who did even Kofi hit?’}
\]
Once again, we see a difference between Krachi and Asante with respect to the status of certain interveners in the languages. In Krachi, *kuraa* ‘even’ is not an intervener. The data in (42) illustrate that *wh*- in-situ is still possible when ‘even’ precedes an unmoved interrogative item.

(42) a. ɔ-kyụ wụ kuraa e-mọ nɛ?
   CL-woman the even pst-kill what
   ‘What did even the woman slaughter?’

b. ɔ-kyụ wụ kuraa e-mọ bwaṭe wụ kɛmike?
   CL-woman the even pst-kill chicken the when
   ‘When did even the woman slaughter the chicken?’

c. ɔ-kyụ wụ kuraa e-mọ bwaṭe wụ nɛnɛ?
   CL-woman the even pst-kill chicken the how
   ‘How did even the woman slaughter the chicken?’

The considerations in this section vividly illustrate the variable nature of intervention effects cross-linguistically. This variation is highlighted by the fact that even among the Tano phylum, genetically related languages like Krachi and Akan can exhibit complementary patterns with respect to a number of intervention effects. It is quite clear that a richer typology of intervention and a more complete understanding of the nature of its variation would result from increased attention to intervention effects in African languages.

7.3. Superiority

Kuno and Robinson (1972) observed that in English, one *wh*- expression cannot move to the left over another *wh*- item. Thus, so-called “superiority effects”
(Chomsky 1977) arise in cases like (43a), where an object wh-item has been moved over a subject wh-item. In (43b), by contrast, the object wh-expression appears in-situ and the resulting question is grammatical.

(43)  a. *What did who see?
     b. Who saw what?

Unlike English, Krachi does not manifest superiority effects. This is illustrated below in (44). (44a) shows that an object wh-expression can be successfully moved over a subject wh-item. (44b) is similar to the English example in (43b), where the in-situ object wh-item does not cross over the subject interrogative. Both questions in (44) are interpreted identically in that they both require pair-list answers. The translations given below were provided by our native speaker consultants.

(44)  a. Ne  yi  nse  e-mɔ?
      what  FOC  who  PST-kill
      ‘What is it that who slaughtered?’

      b. Nse  e-mɔ  ne?
          who  PST-kill  what
         ‘Who slaughtered what?’

Along the same lines, Saah (1994: 83) presents examples from the Agona dialect of Akan that mirror the Krachi superiority violations in (44) in that they appear to involve the movement of one wh-item over a more superior interrogative to its left. Consider the data in (45) below.

(45)  Agona Akan (Saah 1994: 83)
      a. Dɛn  na  hɛnɛ  hui?
          what  FOC  who  see.PST
         ‘What did who see?’
The absence of superiority effects has been noticed in other Kwa languages as well. For instance, Adesola (2005, 2006) showed that Yoruba wh- distribution is not constrained by superiority effects. Consider the Yoruba data in (46) below, which illustrate the ability of wh- items to move over structurally superior interrogatives in the language.

(46) Yoruba (Adesola 2006)
   a. Kí ni o rò pé tání rà?
      what FOC 2ND.SG think that who buy
      ‘What do you think that who bought?’
   b. Ta ní o rò pó ra kí?
      who FOC 2ND.SG think that 3RD.SG buy what
      ‘Who do you think bought what?’

We do not attempt to address the nature of superiority here. However, it may not be coincidental that in the languages that fail to manifest the effect (i.e. Krachi, Akan, and Yoruba), wh- movement constructions appear to be focus/cleft-like structures rather than wh- movement constructions in the classical sense of Chomsky 1977, where the interrogative moves to a dedicated CP position (i.e. “Comp” or Spec, CP). Along these lines, Stepanov (1998), among others, has shown that when wh- fronting is due to reasons other than attracting the Q feature to C, superiority effects fail to emerge. From this perspective, perhaps it is no surprise that these languages fail to exhibit superiority effects since they are driven by Focus features rather than Q features on C (i.e. they lack English-style wh- movement). Nonetheless, the lack of
superiority effects in these Kwa languages highlights the question of exactly how widespread or universal the superiority condition actually is and what its configurational underpinnings are.

8. Summary and conclusions

In this article, we have documented the rich variety of *wh*- interrogative strategies available in Krachi and the various constraints that limit *wh*- question formation. The properties of Krachi *wh*- questions were then compared to Akan, perhaps the most thoroughly studied Tano language, in order to determine the extent to which the Krachi interrogative system is genetically and typologically distinct. Our findings are summarized in Table 2 below.

(47) Table 2 - Properties of *wh*- questions in Krachi with comparison to Akan

<table>
<thead>
<tr>
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<th>KRACHI</th>
<th>AKAN</th>
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<tr>
<td>SUBJECT <em>wh</em>- IN-SITU (MAIN CLAUSES)</td>
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<td>✗</td>
</tr>
<tr>
<td>NON-SUBJECT <em>wh</em>- IN-SITU (MAIN CLAUSES)</td>
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<td>✔️</td>
</tr>
<tr>
<td>‘why’ IN-SITU</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td><em>wh</em>- IN-SITU (EMBEDDED CLAUSES)</td>
<td>✔️</td>
<td>✗</td>
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<tr>
<td><em>wh</em>- IN-SITU (ISLANDS)</td>
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<td>✗</td>
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<td>PARTIAL <em>wh</em>- FOCUS MOVEMENT</td>
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<td>‘MIGHT’ = INTERVENER</td>
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<tr>
<td>SUPERIORITY EFFECTS</td>
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Table 2 reveals that in most respects, the Krachi interrogative system is distinct from that of Akan. Out of the eleven dimensions of interrogative syntax we considered, Krachi and Akan share only four properties in common: both allow non-subject
interrogatives to appear in-situ in main clauses, neither language allows the item ‘why’ to appear clause-externally, both languages treat negation as an intervener for licensing $wh$- in-situ, and neither language manifests superiority effects. The fact that the interrogative systems of Krachi and Akan show less than 40% of an overlap in the properties we investigated is somewhat surprising given the fairly close genetic affiliation of the two languages.

Our detailed investigation into the undocumented Krachi interrogative system and comparison to Akan has revealed a wealth of novel discoveries and systematic variation. We believe this highlights the value of under-documented languages like Krachi to advance our understanding of the range of possibilities involved in the grammar of $wh$- question formation. With its typologically marked partial $wh$- focus movement strategy, unusually flexible $wh$- in-situ distribution, and unique assortment of intervention effects, it is clear that Krachi has the potential to play an important role in advancing our understanding of the grammar of $wh$- question formation. We hope that this article seeds future research into the language so that this potential is realized.

References


Stepanov, Arthur and Wei-Tien Dylan Tsai. 2008. Cartography and Licensing of


