

***Wh-* Question Formation in Krachi**

Harold Torrence
Department of Linguistics
University of Kansas
1541 Lilac Lane
Blake Hall, Room 427
Lawrence, KS 66044-3177
torrence@ku.edu

and

Jason Kandybowicz
Department of Linguistics
University of Kansas
1541 Lilac Lane
Blake Hall, Room 427
Lawrence, KS 66044-3177
kandybowicz@ku.edu

Final version submitted to *Journal of African Languages and Linguistics*:
December 22, 2014

***Wh-* Question Formation in Krachi**

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 Krachi¹ (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. **Nε** yɪ Kofi ε-gyɪɾɪ fεε ɔ-kyɪ wɔ ε-mɔ?
 what FOC Kofi PST-say COMP CL-woman the PST-kill
 ‘What did Kofi say that the woman slaughtered?’
- b. Kofi ε-gyɪɾɪ fεε ɔ-kyɪ wɔ ε-mɔ **nε**?
 Kofi PST-say COMP CL-woman the PST-kill what
 ‘What did Kofi say that the woman slaughtered?’

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 ε-gyɪɾɪ fɛɛ nɛ yɪ ɔ-kyɪ wɔ ε-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 Akan³, 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-kyɛ wɔ ɛ-mɔ bwate wɔ.
 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 classes⁴, 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-kyɪ | ‘woman’ |
| b. | a-kyɪ | ‘women’ |
| c. | ku-kpureki | ‘vulture’ |
| d. | a-kpureki | ‘vultures’ |
| e. | ku-gyo | ‘yam’ |
| f. | i-gyo | ‘yams’ |
| g. | ∅-bwatɛ | ‘chicken’ |
| h. | m-bwatɛ | ‘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 *yɪ*.⁵

- (4)
- | | | | | | | |
|----|--------|---------|-----------------------------|--------|----------------------|--------------------------------|
| a. | Kwaku | ɛ-tɪŋ | ku-gyo | wɯ. | (Neutral clause) | |
| | Kwaku | PST-cut | CL-yam | the | ‘Kwaku cut the yam.’ | |
| b. | Kwaku | yɪ | ɔ-tɪŋ | ku-gyo | wɯ. | (Subject focus) |
| | Kwaku | FOC | 3 RD .SG-cut.PST | CL-yam | the | ‘It’s Kwaku who cut the yam.’ |
| c. | Ku-gyo | wɯ | yɪ | Kwaku | ɛ-tɪŋ. | (Object focus) |
| | 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, *li*, 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 *yɪ* rather than *li* in this article.

(5) Table 1 - *Wh-* expressions in Krachi

<i>Wh-</i> Item	Translation
<i>nse</i>	‘who’
<i>ne</i>	‘what’
<i>nfirɛ</i>	‘where’
<i>kɛmkɛ</i>	‘when’
<i>nɛnɛ</i>	‘how’
<i>nanɪ</i>	‘why’
<i>nɛ kumusʊ</i> ⁷	‘why’
<i>nɛ sv</i> ⁸	‘why’
<i>mʊmʊ</i>	‘which’
<i>afirɛ</i>	‘how many’

⁶ The phonemic representation of Krachi *wh-* items varies from author to author. For example, Dundaa (Nd.) represents ‘who’ as *nsa*, 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 *naɬkɛtɔ*. Other alternative representations of Krachi interrogative expressions include the following analyses: *mfirɛ* ‘where’ (Dundaa), *ŋ-f’rɛ* ‘where’ (Snider), *ka-mɛkɛ* ‘when’ (Snider), *naanɪ* ‘why’ (Dundaa), *nane* ‘why’ (Snider), *ɔmʊmʊ* ‘which’ (Dundaa), and *a-f’rɛ* ‘how many’ (Snider). We speculate that these representational differences may stem from the fact that different authors had analyzed different dialects.

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

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

Although a number of structural issues arise concerning the organization of the language's *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 *wh*- in-situ

In main clauses, Krachi freely allows *wh*- in-situ for nearly all non-subject interrogative expressions. (6a-b) show that both simple and complex *wh*- items may appear clause-internally, while (6c-e) demonstrate that adjunct interrogative expressions may also appear in-situ. Note that unlike the instance of *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-kyɪ wʊ ɛ-mɔ nɛ ndiye?
 CL-woman the PST-kill what yesterday
 'What did the woman slaughter yesterday?'
- b. ɔ-kyɪ wʊ ɛ-mɔ bwate wʊ mʊmʊ ndiye?
 CL-woman the PST-kill chicken the which yesterday
 'Which chicken did the woman slaughter yesterday?'
- c. ɔ-kyɪ wʊ ɛ-mɔ bwate wʊ nɸɪɾɛ bireŋ?
 CL-woman the PST-kill chicken the where quickly
 'Where did the woman slaughter the chicken quickly?'

- d. ɔ-kyɪ wu ɛ-mɔ bwatɛ wu kemɪkɛ bireŋ?
 CL-woman the PST-kill chicken the when quickly
 ‘When did the woman slaughter the chicken quickly?’
- e. ɔ-kyɪ wu ɛ-mɔ bwatɛ wu nɛnɛ kɛ-nyɛsɔ?
 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. Nɛ yɪ ɔ-kyɪ wu ɛ-mɔ ndiye?
 what FOC CL-woman the PST-kill yesterday
 ‘What did the woman slaughter yesterday?’
- b. Bwatɛ wu mumu yɪ ɔ-kyɪ wu ɛ-mɔ ndiye?
 chicken the which FOC CL-woman the PST-kill yesterday
 ‘Which chicken did the woman slaughter yesterday?’
- c. Nfɪrɛ yɪ ɔ-kyɪ wu ɛ-mɔ bwatɛ wu bireŋ?
 where FOC CL-woman the PST-kill chicken the quickly
 ‘Where did the woman slaughter the chicken quickly?’
- d. Kemɪkɛ yɪ ɔ-kyɪ wu ɛ-mɔ bwatɛ wu bireŋ?
 when FOC CL-woman the PST-kill chicken the quickly
 ‘When did the woman slaughter the chicken quickly?’
- e. Nɛnɛ yɪ ɔ-kyɪ wu ɛ-mɔ bwatɛ wu kɛ-nyɛsɔ?
 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 *wh*- in-situ in non-echo questions (Aboh 2007).

Krachi *wh*- subjects can also occur either in-situ or in focus, as illustrated below.

- (8) a. Nɛ ɛ-kya?
 who PST-dance
 ‘Who danced?’
- b. Nɛ yɪ ɔ-kya?
 who FOC 3RD.SG-dance.PST
 ‘Who danced?’

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

- (9) Asante Twi
- a. *Hena bɔɔ Ama?
 who hit.PST Ama
- b. Hena na ɔ-bɔɔ Ama?
 who FOC 3RD.SG-hit.PST Ama
 ‘Who hit Ama?’

Thus, for Krachi, there is no subject/non-subject asymmetry with respect to *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 Jaggard 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-kyɛ wu ɛ-mɔ bwatɛ wu nani ndiye?
 CL-woman the PST-kill chicken the why yesterday
- b. Nani yɛ ɔ-kyɛ wu ɛ-mɔ bwatɛ 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.⁹ Non-‘why’ interrogatives are highly flexible and can surface either clause-internally or

⁹ 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 *nɛnɛ* ‘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).

- (i) a. Q: Nɛnɛ yɛ ɔ-kyɛ wu ɛ-mɔ bwatɛ wu?
 how FOC CL-woman the PST-kill chicken the
 ‘How did the woman slaughter the chicken?’

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 Kiitharaka (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

b. A: ✓ ɔ-kyɛ wu ɛ-mɔ bwatɛ wu bireŋ. (Manner ‘how’ reading)
 CL-woman the PST-kill chicken the quickly
 ‘The woman slaughtered the chicken quickly.’

c. A: ✓ ɔ-kyɛ wu ɛ-mɔ bwatɛ wu yɛ ɔ-sikan. (Instrumental ‘how’ reading)
 CL-woman the PST-kill chicken the with CL-knife
 ‘The woman slaughtered the chicken with a knife.’

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 *wh-* adjuncts like *nani* ‘why’, *nene* is able to appear in-situ, regardless of its argument/adjunct status.

(ii) a. Q: ɔ-kyɛ wu ɛ-mɔ bwatɛ wu nene?
 CL-woman the PST-kill chicken the how
 ‘How did the woman slaughter the chicken?’

b. A: ✓ ɔ-kyɛ wu ɛ-mɔ bwatɛ wu bireŋ.
 CL-woman the PST-kill chicken the quickly
 ‘The woman slaughtered the chicken quickly.’

c. A: ✓ ɔ-kyɛ wu ɛ-mɔ bwatɛ wu yɛ ɔstkan.
 CL-woman the PST-kill chicken the with knife
 ‘The woman slaughtered the chicken with a knife.’

These considerations reinforce the generalization that with regard to the distribution of *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.

(Lin 1992). Closer to home, Saah (1988) has pointed out that unlike other non-subject *wh*- expressions in the language, ‘why’ cannot appear in-situ in Akan.

(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 ε-gyɪɾɪ fɛɛ nɛɛ ε-mɔ bwatɛ wɯ?
Kofi PST-say COMP who PST-kill chicken the
‘Who did Kofi say slaughtered the chicken?’
- b. Kofi ε-gyɪɾɪ fɛɛ ɔ-kyɪ wɯ ε-mɔ nɛ ndiye?
Kofi PST-say COMP CL-woman the PST-kill what yesterday
‘What did Kofi say that the woman slaughtered yesterday?’
- c. Kofi ε-gyɪɾɪ fɛɛ ɔ-kyɪ wɯ ε-mɔ bwatɛ wɯ nfiɾɛ biriŋ?
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 ε-gyɪɾɪ fɛɛ ɔ-kyɪ wu ε-mɔ bwatɛ wu kemɪkɛ bireŋ?
 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 ε-gyɪɾɪ fɛɛ ɔ-kyɪ wu ε-mɔ bwatɛ wu nɛnɛ kɛ-nyɛsɔ?
 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 ε-gyɪɾɪ fɛɛ ɔ-kyɪ wu ε-mɔ bwatɛ wu nanɪ 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 ε-gyɛnt fɛɛ Ama nyi nɛ?
 Kofi PRS-think COMP Ama know what
 ‘What does Kofi think that Ama knows?’
- b. Kofi ε-gyɛnt fɛɛ Ama nyi fɛɛ Kwame ε-mɔ nɛ?
 Kofi PRS-think COMP Ama know COMP Kwame PST-kill what
 ‘What does Kofi think that Ama knows that Kwame slaughtered?’
- c. Kofi ε-gyɛnt fɛɛ Ama nyi fɛɛ Kwame ε-mɔ bwatɛ wu nɛnɛ?
 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. Nɛ yɪ Kofi ɛ-kwareɔgyɪ fɛɛ ɔ-mɔ bwatɛ wʊ?
 who FOC Kofi PST-believe COMP 3RD.SG-kill.PST chicken the
 ‘Who did Kofi believe slaughtered the chicken?’
- b. Nɛ yɪ Kofi ɛ-kwareɔgyɪ fɛɛ ɔ-kyɪ wʊ ɛ-mɔ?
 what FOC Kofi PST-believe COMP CL-woman the PST-kill
 ‘What did Kofi believe that the woman slaughtered?’
- c. Nfɪrɛ yɪ fe e-nu fɛɛ ɔ-kyɪ wʊ ɛ-mɔ bwatɛ wʊ?
 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. Kɛmɪkɛ yɪ fe e-nu fɛɛ ɔ-kyɪ wʊ ɛ-mɔ bwatɛ wʊ?
 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. Nɛnɛ yɪ fe e-nu fɛɛ ɔ-kyɪ wʊ ɛ-mɔ bwatɛ wʊ ?
 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. Nantɪ yɪ fe e-nu fɛɛ ɔ-kyɪ wʊ ɛ-mɔ bwatɛ wʊ?
 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.

(15) Asante Twi

- a. *Wo dwene sɛ Ama bɔɔ hwan?
 2ND.SG think COMP Ama hit.PST who
- b. *Wo nim sɛ Ama saa ɛhifa?
 2ND.SG know COMP Ama dance.PST where
- c. *Wo nim sɛ Ama saa (ɛ)berɛ ben?
 2ND.SG know COMP Ama dance.PST time which
- d. *Wo nim sɛ Ama saa sen?
 2ND.SG know COMP Ama dance.PST how

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 (*bisɛ* ‘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).

- (16) a. *Mɛ nyi fɛɛ nɛ yɪ ɔ-mɔ bwatɛ wɔ.
 1ST.SG know COMP who FOC 3RD.SG-kill.PST chicken the
 Intended: ‘I know who slaughtered the chicken.’
- b. *Mɛ nyi fɛɛ nɛ ɛ-mɔ bwatɛ wɔ.
 1ST.SG know COMP who PST-kill chicken the
 Intended: ‘I know who slaughtered the chicken.’
- c. *Mɛ nyi fɛɛ nɛ yɪ Ama ɛ-mɔ.
 1ST.SG know COMP what FOC Ama PST-kill
 Intended: ‘I know what Ama slaughtered.’
- d. *Mɛ nyi fɛɛ Ama ɛ-mɔ nɛ.
 1ST.SG know COMP Ama PST-kill what
 Intended: ‘I know what Ama slaughtered.’
- e. *Mɛ nyi fɛɛ kɛmɪkɛ yɪ Ama ɛ-mɔ bwatɛ wɔ.
 1ST.SG know COMP when FOC Ama PST-kill chicken the
 Intended: ‘I know when Ama slaughtered the chicken.’
- f. *Mɛ nyi fɛɛ Ama ɛ-mɔ bwatɛ wɔ kɛmɪkɛ.
 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. Mɛ nyi ɔ-sɔ wɔ kɛ ɔ-mɔ bwatɛ wɔ.
 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. Mɛ nyi atɔ wɔ 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. Mɛ nyi kɛ-kɔ wɔ kɛ Ama ɛ-mɔ bwatɛ wɔ.
 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. *Yε ε-bɔ wɪ ɲwaɲwa fεε nse (yɪ) ε-mɔ bwatε wɪ.
 it PST-do 1ST.SG surprise COMP who FOC PST-kill chicken the
 Intended: 'I wondered who slaughtered the chicken.'
- b. Yε ε-bɔ wɪ ɲwaɲwa ɔ-sɔ kε ɔ-mɔ bwatε wɪ.
 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. *Mɪ ε-ɲwɪ fεε (nε yɪ) Ama ε-mɔ (nε).
 1ST.SG PST-learn COMP what FOC Ama PST-kill what
 Intended: 'I learned what Ama slaughtered.'
- d. Mɪ ε-ɲwɪ atɔ kε Ama ε-mɔ.
 1ST.SG PST-learn thing REL Ama PST-kill
 'I learned what Ama slaughtered.'
 Literally: 'I learned about the thing that Ama slaughtered.'
- e. *Mɪ ε-tɪɲsɔ fεε (kεmukε yɪ) Ama ε-mɔ bwatε wɪ (kεmukε).
 1ST.SG PST-forget COMP when FOC Ama PST-kill chicken the when
 Intended: 'I forgot when Ama slaughtered the chicken.'
- f. Mɪ ε-tɪɲsɔ kε-kɔ kε Ama ε-mɔ bwatε wɪ.
 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 *bisε* '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, *bisε* 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.

- (19) a. Mɪ e-bisɛ ɔ-sɔ kɛ ɔ-mɔ bwatɛ wu.
 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. Mɪ e-bisɛ fɛɛ nɛ yɪ ɔ-mɔ bwatɛ wu.
 1ST.SG PST-ask COMP who FOC 3RD.SG-kill.PST chicken the
 ‘I asked who slaughtered the chicken.’
- c. Mɪ e-bisɛ atɔ kɛ Ama ɛ-mɔ.
 1ST.SG PST-ask thing REL Ama PST-kill
 ‘I asked what Ama slaughtered.’
 Literally: ‘I asked about the thing that Ama slaughtered.’
- d. Mɪ e-bisɛ fɛɛ nɛ yɪ Ama ɛ-mɔ.
 1ST.SG PST-ask COMP what FOC Ama PST-kill
 ‘I asked what Ama slaughtered.’
- e. Mɪ e-bisɛ kɛ-kɔ kɛ Ama ɛ-mɔ bwatɛ 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. Mɪ e-bisɛ fɛɛ kɛmukɛ yɪ Ama ɛ-mɔ bwatɛ 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 *bisɛ*. 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-bisε fεε nse ε-mɔ bwatε wu.*
 1ST.SG PST-ask COMP who PST-kill chicken the
 ‘I asked who slaughtered the chicken.’
- b. *Mt e-bisε fεε Ama ε-mɔ nε.*
 1ST.SG PST-ask COMP Ama PST-kill what
 ‘I asked what Ama slaughtered.’
- c. *Mt e-bisε fεε Ama ε-mɔ bwatε wu nfuε.*
 1ST.SG PST-ask COMP Ama PST-kill chicken the where
 ‘I asked where Ama slaughtered the chicken.’
- d. *Mt e-bisε fεε Ama ε-mɔ bwatε wu kεmtkε.*
 1ST.SG PST-ask COMP Ama PST-kill chicken the when
 ‘I asked when Ama slaughtered the chicken.’
- e. *Mt e-bisε fεε Ama ε-mɔ bwatε wu nεnε.*
 1ST.SG PST-ask COMP Ama PST-kill chicken the how
 ‘I asked how Ama slaughtered the chicken.’
- f. **Mt e-bisε fεε Ama ε-mɔ bwatε wu nanu.*
 1ST.SG PST-ask COMP Ama PST-kill chicken the why
 Intended: ‘I asked why Ama slaughtered the chicken.’
- g. *Mt e-bisε fεε nanu yu Ama ε-mɔ bwatε wu.*
 1ST.SG PST-ask COMP why FOC Ama PST-kill chicken the
 ‘I asked why Ama slaughtered the chicken.’
- h. *Mt e-bisε ku-musυ kε Ama ε-mɔ bwatε wu.*
 1ST.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,

¹⁰ 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.

- (i) a. ɔ-gyuru fɛɛ Ama e-ŋu Kofi. (Neutral)
 3RD.SG-say.PST COMP Ama PST-see Kofi
 'He/she said that Ama saw Kofi.'
- b. ɔ-gyuru fɛɛ Ama yu o-ŋu Kofi. (Embedded subject focus)
 3RD.SG-say.PST COMP Ama FOC 3RD.SG-see.PST Kofi
 'He/she said that it was Ama who saw Kofi.'
- c. ɔ-gyuru fɛɛ Kofi yu Ama e-ŋu. (Embedded object focus)
 3RD.SG-say.PST COMP Kofi FOC Ama PST-see
 '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.

- (ii) a. ɔ_{i/ŋj}-gyuru fɛɛ Ama_j yu o-ŋu Kofi_k.
 3RD.SG-say.PST COMP Ama FOC 3RD.SG-see.PST Kofi
 'He/she said that it was Ama who saw Kofi.'
- b. ɔ_{i/ŋk}-gyuru fɛɛ Kofi_k yu Ama_j e-ŋu.
 3RD.SG-say.PST COMP Kofi FOC Ama PST-see
 '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.

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 ε-gyuru fεε Ama nyi fεε **nse** yu ɔ-mɔ 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 ε-gyuru fεε **nse** yu Ama nyi fεε ɔ-mɔ 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 ε-gyuru fεε Ama nyi fεε **ne** yu Kwame ε-mɔ?
 Kofi PST-say COMP Ama know COMP what FOC Kwame PST-kill
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’
- d. Kofi ε-gyuru fεε **ne** yu Ama nyi fεε Kwame ε-mɔ?
 Kofi PST-say COMP what FOC Ama know COMP Kwame PST-kill
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’
- e. Kofi e-nu fεε **nfire** yu Ama ε-mɔ 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 fεε **kemike** yu Ama ε-mɔ 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 fεε **nene** yu Ama ε-mɔ 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 fεε **nani** yu Ama ε-mɔ 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 bɔɔyɛ?
 who FOC 2ND.SG think COMP Kofi hit.PST
 ‘Who do you think Kofi hit?’

b. *Wo dwene (se) hena na Kofi bɔɔyɛ?
 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.

(23) Akyem (Boadi 2005: 39)

Kwasí bias-è se háe ná ɔ bá-è?

Kwasi ask-PST COMP who FOC 3RD.SG come-PST

‘Who was it that Kwasi inquired about whether or not he came?’

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 *nε* ‘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

- (24) a. [Kε Kofi ε-mɔ bwatε wu] yε wa wɛ ŋwanɔwa.
REL Kofi PST-kill chicken the it do 1ST.SG surprise
‘That Kofi slaughtered the chicken is surprising (to me).’
- b. *Nε yɛ [kε Kofi ε-mɔ] yε wa wɛ ŋwanɔwa?
what FOC REL Kofi PST-kill it do 1ST.SG surprise
- c. [Kε Kofi ε-mɔ nε] yε wa wɛ ŋwanɔwa?
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

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.

- (25) a. Kofi nyi [ɔ-kyɪ wu kɛ ɔ-mɔ bwatɛ wu].
 Kofi know CL-woman the REL 3RD.SG-kill.PST chicken the
 'Kofi knows the woman who slaughtered the chicken.'
- b. *Nɛ yɪ Kofi nyi [ɔ-kyɪ wu kɛ ɔ-mɔ]?
 what FOC Kofi know CL-woman the REL 3RD.SG-kill.PST
- c. Kofi nyi [ɔ-kyɪ wu kɛ ɔ-mɔ nɛ]?
 Kofi know CL-woman the REL 3RD.sg-kill.PST what
 'Kofi knows the woman who slaughtered what?'
 ('What is the x, such that Kofi knows the woman who slaughtered x?')

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 ɛ-mɔ [bwatɛ wu yɛ gyoro wu].
 CL-woman the PST-kill chicken the and dog the
 'The woman slaughtered the chicken and the dog.'

- b. *Nε yɪ [ɔ-kyɪ wɔ ɛ-mɔ [___ yɛ gyoro wɔ]?
 what FOC CL-woman the PST-kill and dog the
- c. *Nε yɪ [ɔ-kyɪ wɔ ɛ-mɔ [bwate wɔ yɛ ___]?
 what FOC CL-woman the PST-kill chicken the and
- d. ɔ-kyɪ wɔ ɛ-mɔ [nɛ yɛ gyoro wɔ]?
 CL-woman the PST-kill what and dog the
 ‘The woman slaughtered what and the dog?’
 (‘What is the x, such that the woman slaughtered x and the dog?’)
- e. ɔ-kyɪ wɔ ɛ-mɔ [bwate wɔ yɛ nɛ]?
 CL-woman the PST-kill chicken the and what
 ‘The woman slaughtered the chicken and what else?’
 (‘What is the x, such that the woman slaughtered the chicken and x?’)

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 wɔ* ‘the chicken’. (27b) shows the ungrammatical result of moving the object *wh*- expression *nɛ* 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 ɛ-kya [aɲsaɲ ɔ-kyɪ wɔ ɛ-mɔ bwate wɔ].
 Kofi PST-dance before CL-woman the PST-kill chicken the
 ‘Kofi danced before the woman slaughtered the chicken.’
- b. *Nε yɪ Kofi ɛ-kya [aɲsaɲ ɔ-kyɪ wɔ ɛ-mɔ]?
 what FOC Kofi PST-dance before CL-woman the PST-kill
- c. Kofi ɛ-kya [aɲsaɲ ɔ-kyɪ wɔ ɛ-mɔ nɛ]?
 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 *nfirɛ* ‘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. *Nfirɛ yɪ Kofi ɛ-kya [aɲsaɲ ɔ-kyɪ wɔ ɛ-mɔ bwatɛ wɔ]*?
 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 ɛ-kya [aɲsaɲ ɔ-kyɪ wɔ ɛ-mɔ bwatɛ wɔ nfiɾɛ]*?
 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 Kofi 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 *yɛ*), while (30b) illustrates an adjunct *wh*- expression undergoing partial movement.

- (30) a. Kofi ɛ-kya [aɲsaŋ nɛ yɛ ɔ-kyɛ wɔ ɛ-mɔ]?
 Kofi 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. Kofi ɛ-kya [aɲsaŋ nɛrɛ yɛ ɔ-kyɛ wɔ ɛ-mɔ bwatɛ wɔ]?
 Kofi 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 ε-kya [aŋsaŋ ɔ-kyɛ wɔ ε-mɔ bwatɛ wɔ nanɪ]?
 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 ε-kya [aŋsaŋ nanɪ yɛ ɔ-kyɛ wɔ ε-mɔ bwatɛ wɔ]?
 Kofi PST-dance before why FOC CL-woman the PST-kill chicken the
 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

cross-linguistic intervener (Beck 1996, Beck and Kim 1997, Kobele and Torrence 2006).

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-kyɪ wu ɛ-n-dɪka nɛ?
 CL-woman the PST-NEG-cook what
 (☹ NEG c-commands ‘what’)
- b. Nɛ yɪ ɔ-kyɪ wu ɛ-n-dɪka?
 what FOC CL-woman the PST-NEG-cook
 ‘What didn’t the woman cook?’
 (☺ ‘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.

In addition to negation, certain modals like *fɔŋki* ‘might’ also induce intervention effects in Krachi. That is, the modal *fɔŋki* cannot intervene between a *wh*- expression and the left edge of the clause. This is demonstrated by the ungrammaticality of (37a) and (37c)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 *fɔŋki* 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) *fɔŋki* and therefore, intervention effects fail to obtain when in-situ subject interrogatives appear in ‘might’ clauses in the language.

- (37) a. *ɔ-kyɪ wɔ **fɔŋki** kɛ-mɔ nɛ?
 CL-woman the might FUT-kill what
- b. Nɛ yɪ ɔ-kyɪ wɔ **fɔŋki** kɛ-mɔ?
 what FOC CL-woman the might FUT-kill
 ‘What might the woman slaughter?’
- c. *ɔ-kyɪ wɔ **fɔŋki** kɛ-mɔ bwatɛ wɔ nɛnɛ?
 CL-woman the might FUT-kill chicken the how
- d. Nɛnɛ yɪ ɔ-kyɪ wɔ **fɔŋki** kɛ-mɔ bwatɛ wɔ?
 how FOC CL-woman the might FUT-kill chicken the
 ‘How might the woman slaughter the chicken?’
- e. Nsɛ **fɔŋki** kɛ-mɔ bwatɛ wɔ?
 who might FUT-kill chicken the
 ‘Who might slaughter the chicken?’

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 *kemke* ‘when’ can occur to the right of *fɔŋki* (cf. (38)), but we assume that this is because it is adjoined higher than the modal, as in (36).

- (38) ɔ-kyɪ wɔ **fɔŋki** kɛ-mɔ bwatɛ wɔ kemke?
 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. ɔ-kyɛ wu doo ɛ-mɔ nɛ?
 CL-woman the only PST-kill what
 ‘What did only the woman slaughter?’
- b. ɔ-kyɛ wu doo ɛ-mɔ bwate wu kɛmukɛ?
 CL-woman the only PST-kill chicken the when
 ‘When did only the woman slaughter the chicken?’
- c. ɔ-kyɛ wu doo ɛ-mɔ bwate wu nɛnɛ?
 CL-woman the only PST-kill chicken the how
 ‘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. *Kofi **mpo** bɔɔ hɛna?
 Kofi even hit.PST who
- b. Hɛna na Kofi **mpo** bɔɔ (no)?
 who FOC Kofi even hit.PST 3RD.SG
 ‘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-kyɛ wɔ kuraa ɛ-mɔ nɛ?
 CL-woman the even PST-kill what
 ‘What did even the woman slaughter?’
- b. ɔ-kyɛ wɔ kuraa ɛ-mɔ bwatɛ wɔ kɛmukɛ?
 CL-woman the even PST-kill chicken the when
 ‘When did even the woman slaughter the chicken?’
- c. ɔ-kyɛ wɔ kuraa ɛ-mɔ bwatɛ wɔ 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. Nε yɪ nɛ ε-mɔ?
what FOC who PST-kill
'What is it that who slaughtered?'
- b. Nɛ ε-mɔ nε?
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. Den na hena hui?
what FOC who see.PST
'What did who see?'

- b. Hena na o-huu den?
 who FOC 3RD.SG-see.PST what
 ‘Who saw what?’

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 taní rà?
 what FOC 2ND.SG think that who buy
 ‘What do you think that who bought?’
 b. Ta ni o rò pé ó 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

	KRACHI	AKAN
SUBJECT <i>wh</i> - IN-SITU (MAIN CLAUSES)	✓	✗
NON-SUBJECT <i>wh</i> - IN-SITU (MAIN CLAUSES)	✓	✓
‘why’ IN-SITU	✗	✗
<i>wh</i> - IN-SITU (EMBEDDED CLAUSES)	✓	✗
<i>wh</i> - IN-SITU (ISLANDS)	✓	✗
PARTIAL <i>wh</i> - FOCUS MOVEMENT	✓	✗
NEGATION = INTERVENER	✓	✓
‘MIGHT’ = INTERVENER	✓	✗
‘ONLY’ = INTERVENER	✗	✓
‘EVEN’ = INTERVENER	✗	✓
SUPERIORITY EFFECTS	✗	✗

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-internally, 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

- Aboh, Enoch Oladé. 2007. Leftward Focus Versus Rightward Focus: the Kwa-Bantu Conspiracy. *SOAS Working Papers in Linguistics* 15: 81-104.
- Adesola, Oluseye. 2005. *Pronouns and Null Operators: A-bar Dependencies and Relations in Yoruba*. New Brunswick, NJ: Rutgers University dissertation.

- Adesola, Oluseye. 2006. On the Absence of Superiority and Weak Crossover Effects in Yoruba. *Linguistic Inquiry* 37: 309-318.
- Adonae, Daniels Ananey. 2005. *Aspects of Kaakyi Tonology*. Accra, Ghana: University of Ghana, Legon M.Phil. dissertation.
- Agbedor, Paul and Daniels A. Adonae. 2005. Pronouns in Kaakyi and Ewe: A Comparison. In M.E. Kropp Dakubu and E. Kwaku Osam (eds.), *Studies in the Languages of the Volta Basin 3: 96-103*. Legon, Ghana: University of Ghana, Department of Linguistics.
- Beck, Sigrid. 1996. Quantified Structures as Barriers for LF Movement. *Natural Language Semantics* 4: 1-56.
- Beck, Sigrid. 2006. Intervention Effects Follow from Focus Interpretation. *Natural Language Semantics* 14: 1-56.
- Beck, Sigrid and Shin-Sook Kim. 1997. On WH and Operator Scope in Korean. *Journal of East Asian Linguistics* 6: 339-384.
- Boadi, L.A. 2005. *Three Major Syntactic Structures in Akan: Interrogatives, Complementation and Relativisation*. Accra: Black Mask Limited.
- Bokamba, Eyamba G. 1976. *Question Formation in Some Bantu Languages*. Bloomington, IN: Indiana University dissertation.
- Buell, Leston. 2011. Zulu *Ngani* 'why': Postverbal and yet in CP. *Lingua* 121: 805-821.
- Cheng, Lisa Lai-Shen. 1997. *On the Typology of Wh- Questions*. New York: Garland Publishing.

- Chomsky, Noam. 1977. On Wh- Movement. In *Formal Syntax*, ed. P. Culicover, T. Wasow, and A. Akmajian, 71-132. New York: Academic Press.
- Cleal, Alizon M. 1973. Krachi. In M.E. Kropp Dakubu (ed.), *West African Language Data Sheets Volume 1*, 366-373. Legon, Ghana: West African Linguistic Society.
- Dundaa, Mark. Nd. Kaakyi Noun Morphology and Noun Phrase Constituents. Ms. Kaakyi Project, GILLBT.
- Dundaa, Mark. 2007. *Transitional Primer: Can you read and write in Kaakyi?* Tamale, Ghana: Ghana Institute of Linguistics, Literacy, and Bible Translation.
- Engdahl, Elisabet. 2006. Information Packaging in Questions. In Olivier Bonami and Patricia Cabredo Hofheer (eds.), *Empirical Issues in Syntax and Semantics 6*, 93-111. Available from: http://www.cssp.cnrs.fr/eiss6/index_en.html
- Fanselow, Gisbert. 2006. Partial Movement. In Martin Everaert, Henk van Riemsdijk, Rob Goedemans and Bart Hollebrandse (eds.), *The Blackwell Companion to Syntax (Volume 3)*, 437-492. London: Blackwell Publishing.
- Green, Melanie and Philip J. Jaggar. 2003. Ex-situ and In-situ Focus in Hausa: Syntax, Semantics and Discourse. In Jacqueline Lecarme (ed.), *Research in Afroasiatic Grammar II* [CILT 241], 187-213. Amsterdam: John Benjamins.
- Greenberg, Joseph. 1963. *The Languages of Africa*. Bloomington: Indiana University.
- Hornstein, Norbert. 1995. *Logical Form*. Oxford: Blackwell Publishing.
- Huang, C.-T. James. 1981. Move Wh in a Language Without Wh-movement. *The Linguistic Review* 1: 369-416.

- Huang, C.-T. James. 1982. *Logical Relations in Chinese and the Theory of Grammar*. Cambridge, MA: MIT dissertation.
- Karimi, Simin. 2005. *A Minimalist Approach to Scrambling: Evidence from Persian*. Berlin: Mouton de Gruyter.
- Kirk, Allison. 2012. Word Order Variation in New Testament Greek *wh*- Questions. In Kemenade, Ans M.C. van and Nynke de Haas (eds.), *Historical Linguistics 2009: Selected Papers from the 19th International Conference on Historical Linguistics*, 293-314. Amsterdam: John Benjamins.
- Ko, Heejeong. 2005. Syntax of *Why-in-situ*: Merge into [spec, CP] in the Overt Syntax. *Natural Language and Linguistic Theory* 23: 867-916.
- Kobele, Gregory and Harold Torrence. 2006. Intervention Effects in Asante Twi. *ZAS Papers in Linguistics* 46: 161-184.
- Korboe, Agyei Joseph. 2001. *Pluralization in Kaakyi*. Accra, Ghana: University of Ghana, Legon BA dissertation.
- Korboe, Agyei Joseph. 2002. *The Study of the Nominal Phrase in Kaakyi*. Accra, Ghana: University of Ghana, Legon Masters dissertation.
- Kuno, Susumu and Jane J. Robinson. 1972. Multiple Wh Questions. *Linguistic Inquiry* 3: 463-487.
- Lasnik, Howard and Mamoru Saito. 1984. On the Nature of Proper Government. *Linguistic Inquiry* 15: 235-289.
- Lin, Jo-Wang. 1992. The Syntax of *Zenmeyang* ‘How’ and *Weishenme* ‘Why’ in Mandarin Chinese. *Journal of East Asian Linguistics* 1: 293-331.

- Marlo, Michael and David Odden. 2007. The Exponence of TAM in Bakweri. *SOAS Working Papers in Linguistics* 15: 19-31.
- Mathieu, Éric. 1999. French WH in situ and the Intervention Effect. *University College London Working Papers in Linguistics* 11: 441-472.
- Maxwell, Edith. 1981. Question Strategies and Hierarchies of Grammatical Relations in Kinyarwanda. In *Proceedings of the 7th Annual Meeting of the Berkeley Linguistics Society*, 166-177. Berkley, CA: University of California.
- Muriungi, Peter Kinyua. 2005. *Wh- Questions in Kiiharaka*. *Studies in African Linguistics* 34: 43-104.
- Obenauer, Hans-Georg. 1994. *Aspects de la Syntaxe A-barre*. Paris: Université de Paris VIII dissertation.
- Osam, Emmanuel Kweku Ahen. 1994. *Aspects of Akan Grammar: a Functional Perspective*. Eugene: University of Oregon dissertation.
- Potsdam, Eric. 2006. More Concealed Pseudoclefts in Malagasy and the Clausal Typing Hypothesis. *Lingua* 116: 2154-2182.
- Reinhart, Tanya. 1998. *Wh-in-situ in the Framework of the Minimalist Program*. *Natural Language Semantics* 6: 29-56.
- Rizzi, Luigi. 2001. On the Position Int(errogative) in the Left Periphery of the Clause. In Guglielmo Cinque and Giampaolo Salvi (eds.), *Current Studies in Italian Syntax: Essays Offered to Lorenzo Renzi*, 287-296. Amsterdam: Elsevier North-Holland.
- Ross, John Robert. 1967. *Constraints on Variables in Syntax*. Cambridge, MA: MIT dissertation.

- Saah, Kofi. 1988. Wh- Questions in Akan. *Journal of West African Languages* 18: 17-28.
- Saah, Kofi. 1994. *Studies in Akan Syntax, Acquisition, and Sentence Processing*. Ottawa: University of Ottawa dissertation.
- Sabel, Joachim and Jochen Zeller. 2006. Wh-Question Formation in Nguni. In John Mugane, John P. Hutchinson and Dee A. Worman (eds.), *Selected Proceedings of the 35th Annual Conference on African Linguistics*, 271-283. Somerville, MA: Cascadilla Press.
- Shlonsky, Ur and Gabriela Soare. 2011. Where's 'why'?. *Linguistic Inquiry* 42: 651-669.
- Snider, Keith. 1988. The Noun Class System of Proto-Guang and its Implications for Internal Classification. *Journal of African Languages and Linguistics* 10: 137-164.
- Snider, Keith. 1989. *North Guang Comparative Word List, Chuburung, Krachi, Nawuri, Gichode, Gonja*. Legon, Ghana: Institute of African studies.
- Snider, Keith. 1990. Tonal Upstep in Krachi: Evidence for Register Tier. *Language* 66: 453-474.
- Starke, Michal. 2001. *Move Dissolves into Merge: a Theory of Locality*. Geneva: Université de Genève dissertation.
- Stepanov, Arthur. 1998. On Wh- Fronting in Russian. In Pius Tamanji and Kiyomi Kusumoto (eds.), *Proceedings of the North East Linguistics Society* 28, 453-467. GLSA Publications. University of Massachusetts, Amherst.
- Stepanov, Arthur and Wei-Tien Dylan Tsai. 2008. Cartography and Licensing of

- wh-* Adjuncts: A Cross-linguistic Perspective. *Natural Language and Linguistic Theory* 26: 589-638.
- Thornton, Rosalind. 2008. Why Continuity. *Natural Language and Linguistic Theory* 26: 107-146.
- Torrence, Harold and Jason Kandybowicz. 2012. Comparative Tano Interrogative Syntax: Typological and Genetic Implications. Paper presented at the 43rd Annual Conference on African Linguistics, Tulane University.
- Torrence, Harold and Jason Kandybowicz. 2013. Comparative Tano Interrogative Syntax: The View from Krachi and Bono. In Olanike Ola Orié and Karen W. Sanders (eds.), *Selected Proceedings of the 43rd Annual Conference on African Linguistics*, 222-234. Somerville, MA: Cascadilla Press.
- Tsai, Wei-Tien Dylan. 1994. On Nominal Islands and LF Extraction in Chinese. *Natural Language and Linguistic Theory* 12: 121-175.
- Wasike, Aggrey. 2007. *The Left Periphery, Wh-in-situ, and A-bar Movement in Lubukusu and other Bantu Languages*. Ithaca: Cornell University dissertation.
- Westermann, Diedrich and M.A. Bryan. 1952. *The Languages of West Africa*. London: Oxford University Press.