Comparative Tano Interrogative Syntax: The View from Krachi and Bono

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1. Overview

This paper describes *wh*- question formation in two Volta-Comoe languages (Westermann and Bryan 1952, Greenberg 1963) of the Tano phylum. Specifically, we compare Bono, a Central Tano Akan language with Krachi, a North Guang language. Based on original fieldwork, we focus on four phenomena: (1) main clause *wh*- in-situ; (2) embedded clause *wh*- in-situ; (3) partial *wh*- movement; and (4) island-internal *wh*- in-situ. Comparing *wh*- question formation in these languages, we find that in most respects Bono patterns similarly to Krachi, yet in others it behaves more like Asante Twi. Given the genetic relationship between the Akan and North Guang branches, this raises the possibility that Bono has preserved interrogative constructions that have been lost in other Akan varieties, supporting a deeper genetic affiliation between the two branches.

The paper is organized as follows. Section 2 provides a brief background on the two languages. Sections 3 and 4 focus on *wh*- in-situ in main and embedded clauses respectively. Section 5 investigates partial *wh*- movement, while Section 6 explores constraints on *wh*- movement by way of island-internal *wh*- in-situ and intervention effects. Section 7 summarizes and concludes the article.

2. Background on Krachi and Bono

Speakers of Krachi (alternatively spelled "Kaakyi" or "Krache", among other variants) are concentrated in central Ghana in proximity to the Togo border, principally in the urban center Kete Krachi on Lake Volta. Bono (also known as "Abron" or "Bron[g]") is spoken principally in southwestern Ghana, but there are also speakers in Côte d'Ivoire in the border region of Ghana. Both Krachi and Bono[1] have basic SVO word order:

(1) a. ɔʧíw ɛ-mò bwatéo.[2] Krachi
woman AGR-kill.PST chicken
'The woman slaughtered the chicken.'

b. Bema kɛ̃ kum akoko kɛ̃. Bono
man the kill.PST chicken the
'The man slaughtered the chicken.'

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[1] Like the so-called "Togo-Remnant" or "Togo Mountain" Kwa languages, Krachi has several noun classes and a concordial agreement system. See Korboe 2002 for details of the noun class system. Bono, like the other Akan languages, has only the remnants of a noun class system (Osam 1994).

[2] We use IPA to write our Krachi examples and use accents to represent surface tones (acute for High, grave for Low and unmarked for Mid). Our three-tone schema contrasts with that of Snider (1990), who argues that Krachi has two contrastive pitch levels underlyingly. For Bono, we use a modified version of the Akan script, as we have been unable to locate materials written in Bono.

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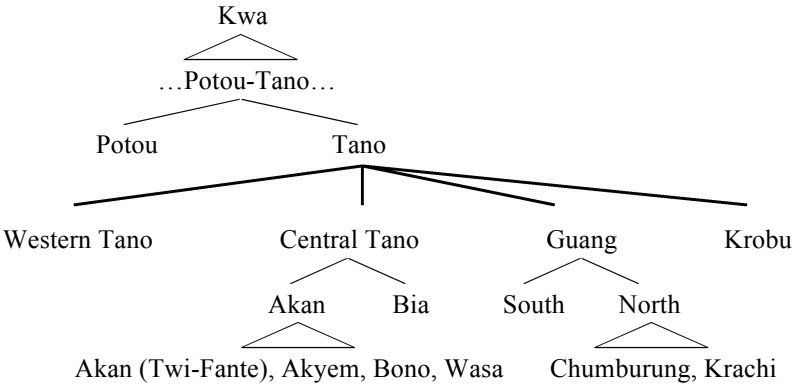
Taxonomically, both languages belong to the Tano group of Kwa, ultimately a sub-branch of Niger-Congo. Within Tano, Krachi is a member of the North Guang subgroup of Guang and its closest relative is Chumburung. Bono is a member of the Akan cluster (or closely related to it), a subgroup of the Central Tano stock of Tano languages which includes Akyem, Asante Twi and Wasa, among others. These genetic affiliations are illustrated in (2):

(2) The Tano languages (adapted from Williamson and Blench 2000)



3. Main clause *wh*- in-situ patterns

Both Krachi and Bono freely allow *wh*- in-situ for non-subjects in main clauses. This differentiates these Tano languages from better-studied Kwa languages like those of the Gbe cluster, which do not allow *wh*- in-situ in non-echo questions (Aboh 2007). Additionally, both Krachi and Bono show a 'why'/non-'why' asymmetry. Non-'why' expressions may either appear peripherally or in-situ, but 'why' is barred from occurring clause-internally, obligatorily surfacing in the left periphery. The languages differ, though, in whether they tolerate in-situ *wh*- subjects in main clauses.

3.1. Main clause wh- in-situ in Krachi

Wh- expressions in Krachi may appear either in-situ (3a) or in left peripheral positions (3b), with no interpretative difference. Notice that in (3b) the *wh*- phrase, *bwatéo momo* 'which chicken', is immediately followed by the focus marker *jí*, indicating that this left peripheral position is a focus position.

(3) a. ɔʧíw ɛ-mò bwatéo momo?
woman AGR-kill.PST chicken which
'Which chicken did the woman slaughter?'

b. Bwatéo momo jí ɔʧíw ɛ-mò?
chicken which FOC woman AGR-kill.PST
'Which chicken did the woman slaughter?'

This dual distribution characterizes nearly all Krachi interrogative expressions (subjects and non-subjects, arguments and adjuncts). The data below illustrate the ability of a variety of grammatically distinct interrogatives to appear in-situ clause-internally in the language.

(4) a. Ṇse ɛ-mò bwatéo? Subject *wh*- in-situ
who AGR-kill.PST chicken
'Who slaughtered the chicken?'

b. ɔʧíw ɛ-mò ne? Direct object *wh*- in-situ
woman AGR-kill.PST what
'What did the woman slaughter?'

c. ɔʧíw ɛ-mò bwatéo ɳfré/kɛmeke/nɛnɛ? *Wh*- adjuncts in-situ
woman AGR-kill.PST chicken where/when/how
'Where/when/how did the woman slaughter the chicken?'

Despite this trend, there is an asymmetry. Unlike every other *wh*- item in the language (4a-c), 'why' may not appear clause-internally (5a). Instead, it must surface in the left periphery (5b), where it is interpreted as a reason operator (Kandybowicz and Torrence 2011, 2012).

(5) a. *ɔʧíw ɛ-mò bwatéo nání?
woman AGR-kill.PST chicken why

b. Nání jí ɔʧíw ɛ-mò bwatéo?
why FOC woman AGR-kill.PST chicken
'Why (for what reason) did the woman slaughter the chicken?'

3.2. Main clause wh- in-situ in Bono

The first difference between Bono and Krachi is that, unlike the latter, Bono matrix subject *wh*- items may not appear in-situ/clause-internally (6a). Instead, the subject must appear in the left periphery, where it is immediately followed by the focus marker *ne* (6b), structurally analogous to focus in Krachi.

(6) a. *Hwae sae?
who dance.PST

b. Hwae ne sae?
who FOC dance.PST
'Who danced?'

However, like Krachi, all (non-subject) *wh*- expressions (7a-b) apart from 'why' (7c) may occur in-situ. As in Krachi, 'why' must surface in a left peripheral position (7d).

(7) a. Bema kɛ̃ kum abe? Direct object *wh*- in-situ
man the kill.PST what
'What did the man slaughter?'

b. Bema kɛ̃ kum akoko kɛ̃ ahĩfa/dabe/sɛ? *Wh*- adjuncts in-situ
man the kill.PST chicken the where/when/how
'Where/when/how did the man slaughter the chicken?'

c. *Bema kɛ̃ kum akoko kɛ̃ senti[3]? *'Why' in-situ
man the kill.PST chicken the why

d. Senti ne bema kɛ̃ kum akoko kɛ̃? 'Why' focused
why FOC man the kill.PST chicken the
'Why did the man slaughter the chicken?'

[3] If *senti* is set off from the rest of the sentence by a pause/intonation break, this string (and strings like it) are judged grammatical, suggesting that constructions such as these are actually biclausal and elliptical. As such, they do not involve clause-internal occurrences of 'why' (e.g. 'The man killed the chicken. Why ~~did he kill the chicken~~?').

3.3. Interim summary

Krachi and Bono pattern together with respect to their general tolerance for *wh*- in-situ in root clauses, but diverge as far as the status of subjects is concerned. Unlike Bono, Krachi interrogative subjects may appear in-situ. 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, Asante Twi and Wasa have been shown to pattern like Bono in constraining subject interrogative expressions from appearing in-situ (Torrence and Kandybowicz 2012). Cross-linguistically, as well, this pattern is widely attested. 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.

The languages pattern together in a second notable way – both afford 'why' a special status. We have characterized this behavior as a 'why' – non-'why' asymmetry. In both Krachi and Bono, non-'why' interrogatives show a flexibility in their ability to appear either clause-internally or peripherally. 'Why', on the other hand, obligatorily surfaces in a left peripheral focus position. This asymmetry has been documented in other languages both distantly related and unrelated: Kitharaka (Muriungi 2005); Italian (Rizzi 2001); Bakweri (Marlo and Odden 2007); Romanian (Shlonsky and Soare 2011); Zulu (Buell 2011); New Testament Greek (Kirk 2010); Lubukusu (Wasike 2007); Korean and Japanese (Ko 2005); Persian (Karimi 2005); Chinese (Lin 1992) and English (Hornstein 1995, Thornton 2008, Stepanov and Tsai 2008). Closer to home, Saah (1988) has pointed out that all *wh*- expressions apart from 'why' can appear in-situ in Akan (8).

(8) a. *Kwadwo bɔɔ Ama dɛn ade nti? — Akan (Saah 1988:20)
Kwadwo hit.PST Ama what thing why/because

b. Dɛn ade nti na Kwadwo bɔɔ Ama? — Akan (Saah 1988:20)
what thing why/because FOC Kwadwo hit.PST Ama
'Why did Kwadwo hit Ama?'

c. *Wobaa ha adɛn nti? — Akan (Saah 1988:20)
2ND.SG-come.PST here reason why

d. Adɛn nti na wobaa ha? — Akan (Saah 1988:20)
reason why FOC 2ND.SG-come.PST here
'Why did you come here?'

The lack of in-situ 'why' in Krachi and Bono provides support for the idea, going back to Reinhart (1998), that 'why' is different from other *wh*-expressions in the sense that it does not originate in a low adjunct position in the clause. The facts presented here also support cartographic approaches to 'why' like those in Rizzi (2001) and Shlonsky and Soare (2011), both of which posit a left peripheral base position for the expression.

4. Embedded clause *wh*- in-situ patterns

In addition to root clauses, Krachi and Bono allow *wh*- in-situ (of appropriate items) in embedded domains. In this respect, then, both languages have consistent policies for handling in-situ interrogatives across syntactic contexts.

4.1. Embedded clause wh- in-situ in Krachi

Apart from the item 'why', all Krachi *wh*- expressions may appear in-situ in embedded clauses, as attested by the data below.

(9) a. Kofí ɛ-ʤıra [fé ṇse ɛ-mò bwatéo]? Embedded subject *wh*- in-situ
Kofi AGR-say.PST COMP who AGR-kill.PST chicken
'Who did Kofi say slaughtered the chicken?'

b. Kofí ɛ-ʤıra [fé ɔʧíw ɛ-mò ne]? Embedded object *wh*- in-situ
Kofi AGR-say.PST COMP woman AGR-kill.PST what
'What did Kofi say that the woman slaughtered?'

c. Kofí ɛ-ʤıra [fé ɔʧíw ɛ-mò bwatéo ṇfrɛ́/kɛmeké/nɛnɛ]? Embedded
Kofi AGR-say.PST COMP woman AGR-kill.PST chicken where/when/how *wh*- adjuncts
'Where/when/how did Kofi say that the woman slaughtered the chicken?' in-situ

d. *Kofí ɛ-ʤıra [fé ɔʧíw ɛ-mò bwatéo nání]? *Embedded 'why' in-situ
Kofi AGR-say.PST COMP woman AGR-kill.PST chicken why

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 section 6.1 below, when islands are taken into consideration.

4.2. Embedded clause wh- in-situ in Bono

As with Krachi, interrogatives of the appropriate type may appear clause-internally in Bono embedded domains. The data below illustrate the occurrence of non-subjects and non-'why' interrogative expressions in embedded in-situ positions.

(10) a. Wo dwene [sɛ bema kɛ̃ kum abe]? Embedded object *wh*- in-situ
2ND.SG think COMP man the kill.PST what'
'What do you think that the man slaughtered?'

b. Wo dwene [sɛ bema kɛ̃ kum akoko kɛ̃ ahĩfa/dabe/sɛ]? Embedded *wh*-
2ND.SG think COMP man the kill.PST chicken the where/when/how adjuncts in-situ
'Where/when/how do you think that the man slaughtered the chicken?'

c. *Wo dwene [sɛ hwae kum akoko kɛ̃]? *Embedded subject *wh*- in-situ
2ND.SG think COMP who kill.PST chicken the

d. *Wo dwene [sɛ bema kɛ̃ kum akoko kɛ̃ senti]? *Embedded 'why' in-situ
2ND.SG think COMP man the kill.PST chicken the why

The only difference between Krachi and Bono in-situ interrogative distribution, then, concerns the status of subjects. *Wh*- in-situ is available in main and embedded clauses in both languages, but only Bono subjects are constrained from appearing clause-internally.

4.3. Interim summary

We have brought to light another dimension uniting the grammars of Krachi and Bono. Mirroring the availability of *wh*- in-situ in root clauses, both languages freely allow interrogatives of appropriate categories (e.g. non-'why' expressions in both languages and non-subjects in Bono) to surface in non-root contexts. In addition to the considerations discussed thus far, this property may also be utilized to grammatically taxonomize the Tano languages, as Asante Twi and Wasa, for example, tolerate *wh*- in-situ in matrix clauses, but not in embedded contexts (Torrence and Kandybowicz 2012). In other words, whereas Asante Twi and Wasa manifest a root/embedded clause asymmetry with respect to *wh*- in-situ, Krachi and Bono pattern together in their liberal tolerance of *wh*- in-situ across syntactic domains. This may prove to be a fruitful dimension for future comparative work on the Tano languages.

5. Partial *wh*- movement patterns

We have shown that, like many other Kwa languages (Aboh 2007), Krachi and Bono allow *wh*-movement to the left periphery. This section demonstrates that Krachi and Bono also tolerate partial *wh*- movement. Based on Fanselow's (2006) typology, we show that these two Tano languages exhibit "naked partial movement", in which the moved interrogative is unaccompanied by an overt question particle in the clause where it takes scope. To our knowledge, this is the first report of partial *wh*- movement in any Kwa language.

5.1. Partial wh- movement in Krachi

Regardless of their thematic status, all *wh*- expressions in Krachi may undergo partial movement. The data in (11a,c,e,g) below show full *wh*- movement from the embedded clause to the main clause left periphery. (11b,d,f,h) exemplify the options for partial movement. In each case, a *wh*- expression from the embedded clause (in parentheses) takes matrix scope, despite surfacing lower in an embedded position. For example, (11b) demonstrates that a *wh*- expression can partially move to either the most embedded focus position or to the focus position in the intermediate clause.

(11) a. Ṇse jí Kofí ɛ-ʤıra [fé ___ Áma ɲí [fé ___ ɔ-mò bwatéó]]?
who FOC Kofi AGR-say COMP Ama know COMP 3RD.SG-kill.PST chicken
'Who did Kofi say that Ama knows slaughtered the chicken?'

b. Kofí ɛ-ʤıra [fé (ṇse jí) Áma ɲí [fé (ṇse jí) ___ ɔ-mò bwatéó]?
Kofi AGR-say COMP who FOC Ama know COMP who FOC 3RD.SG-kill.PST chicken
'Who did Kofi say that Ama knows slaughtered the chicken?'

c. Ne jí Kofí ɛ-ʤıra [fé ___ Áma ɲí [fé ___ Kwáme ɛ-mò ___]]?
what FOC Kofi AGR-say COMP Ama know COMP Kwame AGR-kill.PST
'What did Kofi say that Ama knows that Kwame slaughtered?'

d. Kofí ɛ-ʤıra [fé (ne jí) Áma ɲí [fé (ne jí) Kwáme ɛ-mò ___]]?
Kofi AGR-say COMP what FOC Ama know COMP what FOC Kwame AGR-kill.PST
'What did Kofi say that Ama knows that Kwame slaughtered?'

e. Ṇfré/ʞɛmekɛ́/nɛnɛ jí fe nu [fé ___ ɔʧíw ɛ-mò bwatéó ___]?
where/when/how FOC 2ND.SG hear COMP woman AGR-kill.PST chicken
'Where/when/how did you hear that the woman slaughtered the chicken?'

f. Fe nu [fé ṇfré/ʞɛmekɛ́/nɛnɛ jí ɔʧíw ɛ-mò bwatéó ___]?
2ND.SG hear COMP where/when/how FOC woman AGR-kill.PST chicken
'Where/when/how did you hear that the woman slaughtered the chicken?'

g. Nání jí fe nu [fé ___ ɔʧíw ɛ-mò bwatéó]?
why FOC 2ND.SG hear COMP woman AGR-kill.PST chicken
'Why did the woman slaughter the chicken, according to what you heard?'

h. Fe nu [fé nání jí ɔʧíw ɛ-mò bwatéó]?
2ND.SG hear COMP why FOC woman AGR-kill.PST chicken
'Why did the woman slaughter the chicken, according to what you heard?'

5.2. Partial wh- movement in Bono

Any *wh*- expression may undergo partial movement in Bono, including 'why'. (12a,c,e,g) show full movement of the *wh*- expression from the embedded clause to the left periphery of the main

clause. (12b,d,f,h) demonstrate that *wh-* items with matrix scope may surface on the left edge of embedded clauses as well.

(12) a. Mmema benie wo dwene [sɛ ___ be-kum akoko kɛ̃]?
men which 2ND.SG think COMP 3RD.PL-kill.PST chicken the
'Which men do you think slaughtered the chicken?'

b. Wo dwene [sɛ mmema benie ne (be-)kum akoko kɛ̃]?
2ND.SG think COMP men which FOC 3RD.PL-kill.PST chicken the
'Which men do you think slaughtered the chicken?

c. Abe ne wo dwene [sɛ ___ bema kɛ̃ kumye ___]?
what FOC 2ND.SG think COMP man the kill.PST
'What do you think that the man slaughtered?'

d. Wo dwene [sɛ abe ne bema kɛ̃ kuye ___]?
2ND.SG think COMP what FOC man the kill.PST
'What do you think that the man slaughtered?'

e. Ahĩfa/dabe/sen ne wo dwene [sɛ ___ bema kɛ̃ kum akoko kɛ̃ ___]?
where/when/how FOC 2ND.SG think COMP man the kill.PST chicken the
'Where/when/how do you think that the man slaughtered the chicken?'

f. Wo dwene [sɛ ahĩfa/dabe/sen ne bema kɛ̃ kum akoko kɛ̃ ___]?
2ND.SG think COMP where/when/how FOC man the kill.PST chicken the
'Where/when/how do you think that the man slaughtered the chicken?'

g. Senti ne wo dwene [sɛ ___ mmema kɛ̃ kum akoko kɛ̃]?
why FOC 2ND.SG think COMP men the kill.PST chicken the
'Why do you think that the men slaughtered the chicken?'

h. Wo dwene [sɛ senti ne mmema kɛ̃ kum akoko kɛ̃]?
2ND.SG think COMP why FOC men the kill.PST chicken the
'Why do you think that the men slaughtered the chicken?'

Broadening the comparative perspective, the Bono facts are particularly interesting because in the closely related Akan language Asante Twi, partial movement is not possible, regardless of the thematic status of the interrogative. Example (13a) below shows that long movement of the object of an embedded clause into the root clause focus position is attested. However, it is not possible for that object to undergo a shorter movement to the embedded clause focus position, marked by *na* (13b). Note too that the presence or absence of the complementizer *sɛ* has no effect on the grammaticality of partial movement in Asante Twi.

(13) a. Hena na wo dwene [sɛ ___ Kofi bɔɔyɛ ___]? Asante Twi
who FOC 2ND.SG think COMP Kofi hit.PST
'Who is it that you think that Kofi hit?'

b. *Wo dwene [(sɛ) hena na Kofi bɔɔyɛ ___]? Asante Twi
2ND.SG think COMP who FOC Kofi hit.PST
Intended: 'Who do you think that it is that Kofi hit?'

Torrence and Kandybowicz (2012) document the existence of partial *wh-* movement in Wasa (14a), a related Central Tano language, and note that the species of movement also seems to be allowed in Akyem (14b), an Akan language closely related to Asante Twi. These facts suggest that although

absent in Asante Twi, partial *wh-* movement may in fact be a fairly widespread feature in the Tano languages.

(14) a. Wo dwene [sɛ bɛrɛma bɛn na ___ o-kum akoko no]? Wasa
2ND.SG think COMP man which FOC 3RD.SG-kill.PST chicken the
'Which man do you think slaughtered the chicken?'

b. Kwasí bias-è [sɛ háe nà ___ ɔ bá-è]? Akyem (Boadi 2005:39)
Kwasi ask.PST COMP who FOC 3RD.SG come.PST
'Who was it that Kwasi inquired about whether or not he came?'

5.3. Interim summary

We have shown that despite constraints on 'why' in both languages and subject interrogatives in Bono, any *wh-* item of any thematic persuasion may undergo partial movement in both Krachi and Bono. Furthermore, partial *wh-* movement in Tano appears to take the form of the "naked" variety in Fanselow's (2006) typology, as suggested by the fact that displaced interrogatives in not only Krachi and Bono, but also Wasa and Akyem, appear without an overt question particle in the clauses where they take scope. Of additional significance is our finding that partial movement appears to be a prevalent, but not universal feature across Tano. Although a grammatical possibility in Krachi, Bono, Wasa and Akyem, partial *wh-* movement is systematically unavailable in Asante Twi. We are aware of no other account of the existence of partial *wh-* movement among the Kwa languages. As such, the Tano data discussed in this section constitute the first documentation of Kwa partial movement.

6. Constraints on *wh-* movement: islands and intervention effects

There are a number of languages in which in-situ *wh-* expressions are immune to (strong) island effects. For example, certain *wh-* items in French (Obenauer 1994, Starke 2001), Mandarin Chinese and Japanese (Lasnik and Saito 1984), among others, though unable to be extracted out of islands, may appear in-situ island-internally. Although both Krachi and Bono permit *wh-* in-situ in embedded domains, only Krachi tolerates island-internal in-situ interrogatives. That is, all Bono interrogatives (in- and ex-situ) are constrained by islandhood, while only Krachi's displaced interrogatives are island-sensitive.

In spite of this difference, we show that Krachi and Bono pattern alike regarding so-called "intervention effects": both languages disallow *wh-* in-situ under the scope of interveners such as negation. This finding complements Kobele and Torrence's (2006) discovery of similar intervention effects in Asante Twi, suggesting the possibility that negative intervention might be another prevalent feature of Tano grammar.

6.1. Island-internal wh- in-situ and intervention effects in Krachi

Sentential subjects (15a) are islands for movement in Krachi, as (15b) shows. However, they can host in-situ *wh-* items and be interpreted as genuine (i.e. non-echo) *wh-* questions (15c).

(15) a. [Ke Kofí ɛ-mò bwatéó] ɛ-wa ŋwaŋwa.
COMP Kofi AGR-kill.PST chicken AGR-be strange/surprising
'That Kofi slaughtered the chicken is surprising.'

b. *Ne jí [ke Kofí ɛ-mò ___] ɛ-wa ŋwaŋwa?
what FOC COMP Kofi AGR-kill.PST AGR-be strange/surprising

c. [Ke Kofí ɛ-mò ne] ɛ-wa ŋwaŋwa?
COMP Kofi AGR-kill.PST what AGR-be strange/surprising
'That Kofi slaughtered WHAT is surprising?'
(i.e. 'What is the X such that Kofi's slaughtering of X was surprising?')

Krachi relative clauses are comparable to sentential subjects. The data below show that although subject relatives (16a) are barriers to movement (16b), they do not limit the availability of *wh*- in-situ (16c):[4]

(16) a. [ɔʧíw ke ɔ-mò bwatéó] bò n̩fɪ.
woman COMP 3RD.SG-kill.PST chicken LOC here
'The woman who slaughtered the chicken is here.'

b. *Ne jí [ɔʧíw ke ɔ-mò ___] bò n̩fɪ?
what FOC woman COMP 3RD.SG-kill.PST LOC here

c. [ɔʧíw ke ɔ-mò ne] bò n̩fɪ?
woman COMP 3RD.sg-kill.PST what LOC here
'The woman who slaughtered WHAT is here?'

An interesting twist on the distribution of island-internal *wh*- in-situ in Krachi (one that we are unaware obtains in any other language, whether related or not) is that despite occurring in islands, *wh*-in-situ is barred from occurring in doubly embedded islands (that is, islands nested inside other inlands). Example (17a) below presents just such an environment – a subject relative clause is embedded within a sentential subject. In such a context, *wh*- in-situ now becomes unavailable (17b), despite the independent availability of *wh*- in-situ in either domain when unembedded (15c, 16c). Example (17f) furnishes an additional example of the phenomenon, showcasing the systematicity of the effect in the language. In this case, a coordinate structure, which is shown in (17c) to be an island for movement and yet a host for *wh*- in-situ (cf. (17d)), is embedded within a subject relative clause island (17e), blocking *wh*- in-situ (17f).

(17) a. [Ke [ɔʧíw ke ɔ-mò bwatéó] bò n̩fɪ] ɛ-wa ŋwaŋwa.
COMP woman COMP 3RD.SG-kill.PST chicken LOC here AGR-be surprising
'That the woman who killed the chicken is here is surprising.'

b. *[Ke [ɔʧíw ke ɔ-mò ne] bò n̩fɪ] ɛ-wa ŋwaŋwa?
COMP woman COMP 3RD.SG-kill.PST what LOC here AGR-be surprising

c. *Ne jí [ɔʧíw ɛ-mò [bwatéó jɛ̀ ___]?
what FOC woman AGR-kill.PST chicken and

d. ɔʧíw ɛ-mò [bwatéó jɛ̀ ne]?
woman AGR-kill.PST chicken and what
'The woman killed the chicken and what else?'

e. [ɔʧíw ke ɔ-mò [bwatéó jɛ̀ dʒoró]] bò n̩fɪ.
woman COMP 3RD.SG-kill.PST chicken and dog LOC here
'The woman who slaughtered (both) the chicken and the dog is here.'

f. *[ɔʧíw ke ɔ-mò [bwatéó jɛ̀ ne]] bò n̩fɪ.
woman COMP 3RD.SG-kill.PST chicken and what LOC here

It is tempting to respond to these data by hypothesizing that the problem lies not with islandhood, but rather with degree of embeddedness more generally. We have reason to believe that this is not the case. The datum in (18) below illustrates that *wh*- items may occur in deeply embedded domains in the language, provided that none of them are syntactic islands.

[4] Other islands in Krachi that restrict extraction, but not *wh*- in-situ include temporal adverbial ('before'/'after') clauses and coordinate structures. Space limitations preclude a demonstration of these other island types.

(18) Kofi ɛ-ʤɪra [fé Áma ɲí [fé Kwáme ɛ-mò ne]]?
Kofi AGR-say COMP Ama know COMP Kwame AGR-kill.PST what
'Kofi said that Ama knows that Kwame slaughtered WHAT?'

The distribution of *wh-* items in Krachi is also constrained by intervention effects (Beck 1996). The data below illustrate that *wh-* expressions must take surface scope over negation, limiting the possibility of *wh-* in-situ under clause-mate negation.[5] Examples (19a,c) show that a *wh-* expression cannot surface in the c-command domain of negation, marked by *n-*. However, if the *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, as illustrated by (19b,d). Since subjects always c-command negation, they need not be fronted into the left periphery in the presence of verbal negation, as demonstrated by (19e). And assuming that clause-internal temporal interrogatives adjoin to TP and thus scope over negation, we can account for the fact that in-situ items like 'when' fail to be constrained by intervention effects (19f).

(19) a. *ɔʧíw ɛ-n-dìkɛ̀ ne? 👎 NEG c-commands 'what'
woman AGR-NEG-cook.PST what

b. Ne jí ɔʧíw ɛ-n-dìkɛ̀? 👍 'What' c-commands NEG
what FOC woman AGR-NEG-cook.PST
'What didn't the woman cook?'

c. *ɔʧíw ɛ-n-dìkɛ̀ kudʒó nɛnɛ? 👎 NEG c-commands 'how'
woman AGR-NEG-cook.PST yam how

d. Nɛnɛ jí ɔʧíw ɛ-n-dìkɛ̀ kudʒó? 👍 'How' c-commands NEG
how FOC woman AGR-NEG-cook.PST yam
'How didn't the woman cook yam?'

e. Ṇse wɔ-n-dìkɛ̀ kudʒó? 👍 'Who' c-commands NEG
who AGR-NEG-cook.PST yam
'Who didn't cook yam?'

f. ɔʧíw ɛ-n-dìkɛ̀ kudʒó kɛmeké? 👍 'When' c-commands NEG
woman AGR-NEG-cook.PST yam when
'When didn't the woman cook yam?'

6.2. Island-internal wh- in-situ and intervention effects in Bono

Unlike Krachi, Bono disallows *wh-* in-situ island-internally. As (20b,c,e,f) show, it is impossible for a *wh-* item to occur inside a sentential subject or subject relative clause, two strong islands. This is clearly an island effect, as we have already shown in (10) that Bono allows *wh-* in-situ (of appropriate items) in embedded clauses.

(20) a. [Sɛ Kofi kum akoko kɛ̃] yɛɛ Ama nwonwa.
COMP Kofi kill.PST chicken the make.PST Ama surprise
'That Kofi slaughtered the chicken surprised Ama.'

b. *[Sɛ Kofi kum abe] yɛɛ Ama nwonwa?
COMP Kofi kill.PST what make.PST Ama surprise
Intended: 'That Kofi slaughtered WHAT surprised Ama?'

[5] Kandybowicz and Torrence (2012) demonstrate that in addition to negation, modals are also interveners in Krachi. Space limitations prevent us from demonstrating this fact here.

c. *[Sɛ Kofi kum akoko kɛ̃ ahĩfa/dabe/sɛ] yɛɛ Ama nwonwa?
COMP Kofi kill.PST chicken the where/when/how make.PST Ama surprise
Intended: 'That Kofi slaughtered the chicken WHERE/WHEN/HOW surprised Ama?'

d. Kofi hu [bema kɛ̃ (o-)kum akoko kɛ̃].
Kofi see.PST man the 3RD.SG-kill.PST chicken the
'Kofi saw the man who slaughtered the chicken.'

e. *Kofi hu [bema kɛ̃ (o-)kum abe]?
Kofi see.PST man the 3RD.SG-kill.PST what
Intended: 'Kofi saw the man who slaughtered WHAT?'

f. *Kofi hu [bema kɛ̃ (o-)kum akoko kɛ̃ ahĩfa/dabe/sɛ]?
Kofi see.PST man the 3RD.SG-kill.PST chicken the where/when/how
Intended: 'Kofi saw the man who slaughtered the chicken WHERE/WHEN/HOW?'

In spite of this limitation, Bono mirrors Krachi in that comparable intervention effects constrain the distribution of interrogatives. (21a,c) show that Bono *wh*- expressions cannot surface in the c-command domain of negation. As with Krachi, movement of the interrogative to a left peripheral focus position yields a grammatical result (21b,d), because in this position the item now c-commands negation.

(21) a. *Bema kɛ̃ en-kum abe? 👎 NEG c-commands 'what'
man the NEG-kill.PST what

b. Abe ne bema kɛ̃ en-kum? 👍 'What' c-commands NEG
what FOC man the NEG-kill.PST
'What did the man not slaughter?

c. *Bema kɛ̃ en-kum akoko kɛ̃ ahĩfa/dabe/sɛ? 👎 NEG c-commands adjunct *wh*-
man the NEG-kill.PST chicken the where/when/how

d. Ahĩfa/dabe/sɛ ne bema kɛ̃ en-kum akoko kɛ̃? 👍 Adjunct *wh*- c-commands NEG
where/when/how FOC man the NEG-kill.PST chicken the
'Where/when/how did the man not slaughter the chicken?'

6.3. Interim summary

This section has identified the second respect in which the grammar of Krachi interrogatives differs from that of Bono. Unlike the former, Bono does not tolerate in-situ interrogatives island-internally. Preliminary research suggests that Bono's limitation in this regard is fairly typical of the Central Tano languages, at least those languages of the Akan branch, as revealed by the fact that island-internal *wh*- in-situ is also restricted in Asante Twi and Wasa (Torrence and Kandybowicz 2012). Despite this difference, the languages pattern together with respect to the fact that *wh*- in-situ is constrained by intervention effects. In both Krachi and Bono, negation acts as an intervener, forcing interrogatives to take surface scope over negative morphemes by way of *wh*- movement. Intervention effects such as those discussed in this section may well prove to be another defining feature of Tano interrogative syntax, as Torrence and Kandybowicz (2012) point out that negation also constrains the distribution of *wh*- in-situ in Wasa and Asante Twi in the same way.

7. Summary and conclusions

In this paper, we have presented a comparison of interrogative syntax in Krachi and Bono, two Tano languages belonging to distinct stocks, focusing attention primarily on in-situ distribution and

partial movement. The results, which reveal a close affinity in the grammars of the languages, are summarized in the table below.

Table 1. Properties of *wh*- questions in Krachi and Bono

	KRACHI	BONO
SUBJECT *wh*- IN-SITU (MAIN CLAUSES)	✓	✗
NON-SUBJECT *wh*- IN-SITU (MAIN CLAUSES)	✓	✓
'why' IN-SITU	✗	✗
wh- IN-SITU (EMBEDDED CLAUSES)	✓	✓
wh- IN-SITU (ISLANDS)	✓	✗
PARTIAL *wh*- MOVEMENT	✓	✓
wh- DISTRIBUTION CONSTRAINED BY INTERVENTION EFFECTS	✓	✓

The detailed investigation of just a subset of Tano languages reveals a wealth of systematic micro-parametric variation. We have shown that Krachi and Bono allow for both *wh*- movement and *wh*- in-situ in matrix and embedded clauses. However, the in-situ construction in both languages is subject to several constraints. As Table 1 shows, Bono does not permit in-situ *wh*- subjects, unlike Krachi. Within the *wh*- paradigm, 'why' patterns differently and in neither language can occur clause-internally. These facts provide further empirical support for analyses that treat 'why' as fundamentally different from all other *wh*- expressions, owing to its origination in the left periphery. Using negation, it was shown that *wh*- in-situ in both languages is susceptible to intervention effects. Thus, Krachi and Bono pattern together with a number of related (Asante Twi) and unrelated (German) languages in which intervention effects have been documented to constrain interrogative distribution. The *wh*- movement construction was also shown to be island-sensitive in both languages, an expected result. However, *wh*- in-situ was shown to distribute differently in island configurations. Krachi tolerates appropriate (i.e. non-'why') in-situ *wh*- expressions inside islands, while Bono does not. This constituted only the second systematic difference in the interrogative systems of Krachi and Bono. Finally, we have documented the existence of partial *wh*- movement in two Kwa languages, specifically, partial movement of the "naked" variety. The existence of partial movement in both the Central Tano (as manifested by Bono) and Guang (as exemplified by Krachi) language groups suggests that it may be present in other branches of Tano or Kwa as well. This is significant because documentation of partial *wh*- movement in Kwa has thus far been noticeably absent from the literature. The phenomenon of partial movement also highlights variation within the Akan cluster, as it exists in Bono (as well as Akyem and Wasa), but not in Asante Twi.

Stepping back to consider *wh*- question formation in these languages, we discovered that in most respects Bono and Krachi pattern together. However, in others (e.g. the distribution of in-situ subject interrogatives and availability of island-internal *wh*- in-situ) Bono behaves more like Asante Twi. Given the genetic relationship between the Akan and North Guang branches of Tano, this raises the possibility that Bono has preserved interrogative constructions that have been lost in other Akan varieties, supporting a deeper genetic affiliation between the two branches than is commonly assumed.

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