

Unweaving the Interrogative Rainbow

The Interplay between Syntax, Semantics, and Prosody in Four Tano Languages

Jason Kandybowicz and Harold Torrence
University of Kansas

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Overview

- ◆ Today we offer a glimpse into our ongoing comparative study of the *wh*-interrogative patterns of Tano languages, focusing on:
 - Krachi
 - Bono
 - Wasa
 - Asante Twi

Why Tano?

- ◆ Tano is wealthy in interrogatives.
- ◆ Nearly every color (variety) of the interrogative rainbow is attested in this language group:

- **INTONATIONAL QUESTIONS**

(1) Bono

Wu hu Kofi

2ND.SG see Kofi

'You saw Kofi.'/'Did you see Kofi?'



- **Q PARTICLES**

(2) Asante Twi

a. Kofi dɔ Ama.

Kofi love Ama

'Kofi loves Ama.'

b. Kofi dɔ Ama **anaa**?

Kofi love Ama q

'Does Kofi love Ama?'

- **WH- IN-SITU**
- **PARTIAL WH- MOVEMENT**
- **FULL WH- MOVEMENT**

(3) Krachi

- a. Kofí ε-dʒɪra [fé Ama ní [fé Kwáme ε-mo **ne**]]?
 Kofi PST-say COMP Ama know COMP Kwame PST-kill what
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’
- b. Kofí ε-dʒɪra [fé Ama ní [fé **ne** jí Kwáme ε-mo ___]]?
 Kofi PST-say COMP Ama know COMP what FOC Kwame PST-kill
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’
- c. Kofí ε-dʒɪra [fé **ne** jí Ama ní [fé ___ Kwáme ε-mo ___]]?
 Kofi PST-say COMP what FOC Ama know COMP Kwame PST-kill
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’
- d. **Ne** jí Kofí ε-dʒɪra [fé ___ Ama ní [fé ___ Kwáme ε-mo ___]]?
 what FOC Kofi PST-say COMP Ama know COMP Kwame PST-kill
 ‘What did Kofi say that Ama knows that Kwame slaughtered?’

The Talk in a Nutshell

- ◆ Understanding or unweaving the Tano interrogative rainbow requires an interface-based approach that recognizes the interplay between the syntactic, semantic, and prosodic components of grammar.



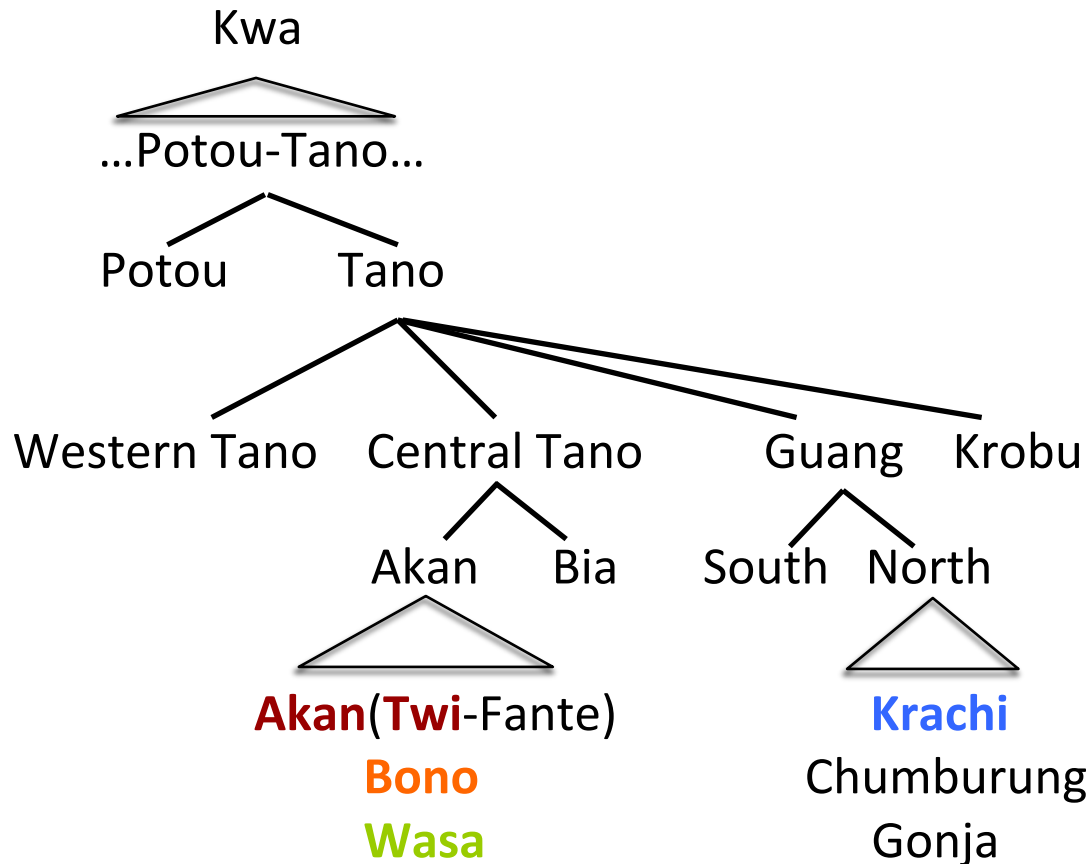
Roadmap



- ◆ **Overview of the Tano languages**
- ◆ Main clause *wh-* in-situ
- ◆ Embedded (complement) clause *wh-* in-situ
- ◆ Island phenomena
- ◆ Intervention effects
- ◆ Wrap up

Overview of the Tano Languages

- ◆ The Tano languages (adapted from Williamson & Blench 2000):



Overview: Krachi

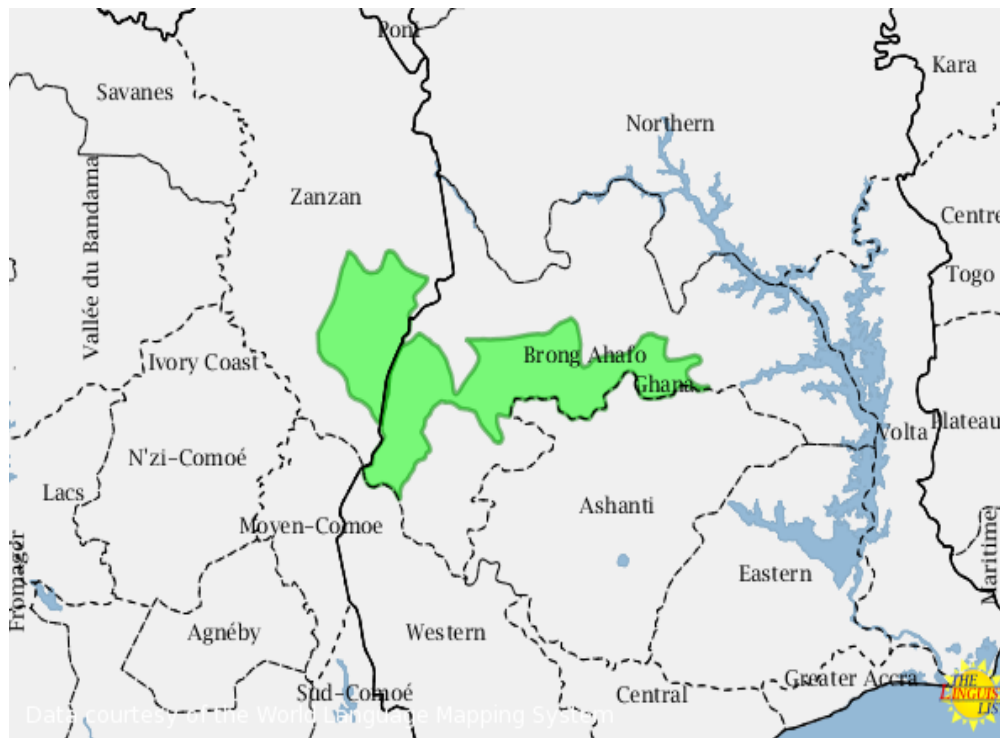
- ◆ Alternate spellings: Kaakyi, Krache, Krakye



- ◆ Approximate population: 58,000
- ◆ Location: Centered in/around the town of Kete Krachi on Lake Volta

Overview: Bono

- ◆ Alternate spellings: Abron, Bron, Brong, Doma, Gyaman



- ◆ Approximate population: 1,050,000 in Ghana. 1,182,700 total.
- ◆ Location: Northwest of the Asante region; Zanzan Region, Côte d'Ivoire.

Overview: Wasa

- ◆ Alternate spellings: Wassa, Wasaw



- ◆ Approximate population: 309,000
- ◆ Location: Southwest Ghana

Overview: Asante Twi

- ◆ Alternate spellings: Asanti, Ashanti, Ashante, Achanti



- ◆ Approximate population: 2,800,000
- ◆ Location: South central Ghana

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Krachi Main Clause *Wh*- In-Situ

- ◆ *Wh*- expressions in Krachi (and across Tano more generally) may appear either in-situ or in left peripheral focus positions, with no interpretative difference.
- (4) a. ɔʔíw ε-mo **bwatéó momo**?
woman PST-kill chicken which
'Which chicken did the woman slaughter?'
- b. **Bwatéó momo** jí ɔʔíw ε-mo?
chicken which FOC woman PST-kill
'Which chicken did the woman slaughter?'

- (5) a. **Nse** ε-mo bwatéo?
 who PST-kill chicken
 ‘Who slaughtered the chicken?’
- b. ɔtʃíw ε-mo **ne**?
 woman PST-kill what
 ‘What did the woman slaughter?’
- c. ɔtʃíw ε-mo bwatéo **ɲfré/kemeké/nεε**?
 woman PST-kill chicken where/when/how
 ‘Where/when/how did the woman slaughter the chicken?’
- d. *ɔtʃíw ε-mo bwatéo **nání**?
 woman PST-kill chicken why
- e. **Nání** jí ɔtʃíw ε-mo bwatéo?
 why FOC woman PST-kill chicken
 ‘Why (for what reason) did the woman slaughter the chicken?’

- 
- ◆ Similar asymmetries involving *why* have been documented in other languages (both related and unrelated):
 - Kiitharaka (Muriungi 2005)
 - Bakweri (Marlo & Odden 2007)
 - Zulu (Buell 2011)
 - Lubukusu (Wasike 2007)
 - Persian (Karimi 2005)
 - Italian (Rizzi 2001)
 - Romanian (Shlonsky & Soare 2011)
 - New Testament Greek (Kirk 2010)
 - Korean & Japanese (Ko 2005)
 - Chinese (Lin 1992)
 - Bono, Wasa & Asante Twi

Bono Main Clause *Wh*- In-Situ

- ◆ Most *wh*- expressions in Bono may appear in-situ in main clauses.
- (6) a. Bema kě kum **abe**?
man the kill.PST what
'What did the man slaughter?'
- b. Bema kě kum akoko kě **ahĩ/dabe/sɛ**?
man the kill.PST chicken the where/when/how
'Where/when/how did the man slaughter the chicken?'



◆ Subject *wh*- items and ‘why’ may not appear in-situ in Bono.

■ (7) a. ***Hwae** sae?

who dance.PST

b. **Hwae** ne sae?

who FOC dance.PST

‘Who danced?’


■ (8) a. *Bema kẽ kum akoko kẽ **senti**?

man the kill.PST chicken the why

b. **Senti** ne bema kẽ kum akoko kẽ?

why FOC man the kill.PST chicken the

‘Why did the man slaughter the chicken?’

- 
- ◆ Similar restrictions on in-situ subject interrogatives have been documented in a variety of related and unrelated *wh*- in-situ languages:
 - Hausa (Green & Jaggar 2003)
 - Zulu (Sabel & Zeller 2006)
 - Kitharaka (Muriungi 2005)
 - Kinyarwanda (Maxwell 1981)
 - Dzamba (Bokamba 1976)
 - Malagasy (Potsdam 2006)
 - Wasa & Asante Twi

Wasa Main Clause *Wh*- In-Situ

- ◆ Most *wh*- expressions in Wasa may appear in-situ in main clauses.
- (9) a. Berema no kum **den**?
man the kill.PST what
'What did the man slaughter?'
- b. Berema no kum akoko no **ehifa/mmere ben/sen**?
man the kill.PST chicken the where/time which/how
'Where/when/how did the man slaughter the chicken?'



◆ Subject *wh*- items and ‘why’ may not appear in-situ in Wasa.

■ (10) a. ***Hwae** saaye?

who dance.PST

b. **Hwae** ne saaye?

who FOC dance.PST

‘Who danced?’

■ (11) a. *Berema no kum akoko no **adienti**?

man the kill.PST chicken the why

b. **Adienti** ne berema no kum akoko no?

why FOC man the kill.PST chicken the

‘Why did the man slaughter the chicken?’

Asante Main Clause *Wh*- In-Situ

- ◆ Most Asante *wh*- expressions may appear in-situ in main clauses.

- (12) a. Ama bɔɔ **hwan**?

Ama hit.PST who

‘Who did Ama hit?’

- b. Kofi bɔɔ Ama **ɛhĩfa/(ɛ)berɛ bɛn/sɛn**?

Kofi hit.PST Ama where/time which/how

‘Where/when/how did Kofi hit Ama?’



◆ Subject *wh*- items and ‘why’ may not appear in-situ in Asante.

■ (13) a. ***Hwan** bɔɔ Ama?
who hit.PST Ama

b. **Hwan** na ɔ-bɔɔ Ama?
who FOC 3rd.SG-hit.PST Ama
‘Who hit Ama?’

■ (14) a. *Kwadwo bɔɔ Ama **adɛn nti**? (Saah 1988:20)
Kwadwo hit.PST Ama reason why

b. **Adɛn nti** na Kwadwo bɔɔ Ama?
reason why FOC Kwadwo hit.PST Ama
‘Why did Kwadwo hit Ama?’

(Saah 1988:20)

Summary: *Wh*- In-Situ (Main Clauses)

	KRACHI	BONO	WASA	ASANTE TWI
<i>Wh</i> - in-situ (main clauses)	✓ (except 'why')	✓ (except <i>wh</i> -SUBJ & 'why')	✓ (except <i>wh</i> -SUBJ & 'why')	✓ (except <i>wh</i> -SUBJ & 'why')

Analysis: *Wh*- In-Situ (Main Clauses)

- ◆ Two constraints on main clause *wh*- in-situ in Tano:
 - ◆ (i) *‘why’ in-situ
 - ◆ (ii) **wh*-_{SUBJ} in-situ
- ◆ The constraint on ‘why’ in-situ appears to be semantic in nature.
- ◆ The restriction on subject *wh*- items in-situ remains a mystery.

Analysis: **Why* In-Situ

- ◆ Reinhart (1998):
 - ◆ Interpretation of *wh*- in-situ via CHOICE FUNCTIONS (CFs).
 - ◆ CFs apply to non-empty sets and output members of those sets.
 - ◆ In order for a CF to apply, Dom(CF) must include a set of individuals.
 - ◆ *Wh*- adverbials like ‘why’ range over propositions, not individuals.
 - ◆ Therefore, CFs cannot apply to the denotations of *wh*- items like ‘why’.
 - ◆ In order to be semantically interpretable, then, ‘why’ must be generated peripherally, so as to merge directly with a proposition-denoting constituent.
- ◆ The cartographic approach to ‘why’ (Rizzi 2001, Shlonksy & Soare 2011) is consistent with this analysis.

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Krachi Embedded *Wh*- In-Situ

- ◆ Apart from ‘why’, Krachi *wh*- expressions may appear in-situ in embedded (complement) clauses.
- (15) a. Kofí ni [fé **nse** ε-mo bwatéo]?
Kofi know COMP who PST-kill chicken
‘Who does Kofi know slaughtered the chicken?’
- b. Kofí ε-dʒɪra [fé ɔtʃíw ε-mo **ne**]?
Kofi PST-say COMP woman PST-kill what
‘What did Kofi say that the woman slaughtered?’
- c. Kofí ε-dʒɪra [fé ɔtʃíw ε-mo bwatéo **ɲfré/kɛmeké/nɛnɛ**]?
Kofi PST-say COMP woman PST-kill chicken where/when/how
‘Where/when/how did Kofi say it was that the woman slaughtered the chicken?’

Bono Embedded *Wh*- In-Situ

- ◆ Apart from *wh*-_{SUBJ} and ‘why’, Bono *wh*- expressions may also appear in-situ in embedded (complement) clauses.
- (16) a. Wo dwene [sɛ bema kɛ̃ kum **abe**]?
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 **ahĩ(fa)/dabe/sɛ**]?
2ND.SG think COMP man the kill.PST chicken the where/when/how
‘Where/when/how do you think it was that the man slaughtered the chicken?’

Wasa Embedded *Wh*- In-Situ

- ◆ In addition to *wh*-_{SUBJ} and ‘why’, which are independently unavailable clause-internally, *wh*- items are restricted from appearing in-situ in embedded (complement) clauses in non-echo questions.
- (17) a. *Wo dwene [sɛ bɛɾɛma no kum **ɛdiɛn**]?
2ND.SG think COMP man the kill.PST what
- b. *Wo dwene [sɛ bɛɾɛma no kum akoko no **ɛhĩfa/mmɛɾɛ bɛn**]?
2ND.SG think COMP man the kill.PST chicken the where/time which
‘Where/when do you think it was that the man killed the chicken?’

Asante Embedded *Wh*- In-Situ

- ◆ In addition to independently unavailable *wh*-_{SUBJ} and ‘why’, *wh*-items may not appear in-situ within embedded (complement) clauses in non-echo questions.
- (18) a. *Wo dwene [sε Kofi bɔɔ **hwan**]?
2ND.SG think COMP Kofi hit.PST who
- b. *Wo kaa [sε Kofi dii **dɛn**]?
2ND.SG say.PST COMP Kofi eat.PST what
- c. *Wo nim [sε Kofi saa **ɛhĩfa/(ɛ)berɛ bɛn**]?
2ND.SG know COMP Kofi dance.PST where/time which

Interim Summary: *Wh*- In-Situ (Embedded (Complement) Clauses)

	KRACHI	BONO	WASA	ASANTE TWI
<i>Wh</i> - in-situ (embedded (complement) clauses)	✓ (except 'why')	✓ (except <i>wh</i> -SUBJ & 'why')	✗	✗

Analysis: *Wh*- In-Situ (Embedded (Complement) Clauses)

- ◆ One possible approach:
 - ◆ Q operator must enter into an Agree/Binding relationship with *wh*-.
(Cheng 1991; Beck 1996; Hagstrom 1998; Pesetsky 2000; Cable 2007)
 - ◆ In Krachi and Bono, this relationship is achievable non-locally.
 - ◆ Matrix Q binds/agrees with embedded *wh*-. Embedded *wh*- in-situ possible.
 - ◆ In Wasa and Asante, this relationship is not achievable non-locally.
 - ◆ Embedded *wh*- inaccessible to matrix Q. Embedded *wh*- in-situ unavailable.
- ◆ Prediction:
 - ◆ Wasa & Asante-type languages should not allow partial *wh*- movement to a position below embedded C (i.e. to a non phase edge position).

Asante Partial *Wh*- Movement

- ◆ The prediction is borne out in Asante. Partial *wh*- movement is unavailable.
 - (19) a. *Wo dwene [sɛ **hwan** na ɔ-bɔɔ Ama]?
2ND.SG think COMP who FOC 3ND.SG-hit.PST Ama
 - b. *Wo kaa [sɛ **dɛn** na Kofi diiyɛ]?
2ND.SG say.PST COMP what FOC Kofi eat.PST
 - c. *Wo nim [sɛ **ɛhĩfa/(ɛ)berɛ bɛn** na Kofi saayɛ]?
2ND.SG know COMP where/time which FOC Kofi dance.PST
-
- ◆ Note that *wh*- movement to an embedded position above C is also unavailable: *Wo kaa [**dɛn** na sɛ Kofi diiyɛ]?

Asante Embedded Focus

- ◆ Non-interrogative focus is not constrained in this way. Short focus movement is possible in the language.
- (20) a. Wo dwene [sɛ **Kofi** na ɔ-bɔɔ Ama].
2ND.SG think COMP Kofi FOC 3ND.SG-hit.PST Ama
'You think that its KOFI who hit Ama.'
- b. Wo kaa [sɛ **nkonya no** na Kofi diiyɛ].
2ND.SG say.PST COMP cake the FOC Kofi eat.PST
'You said that it's the CAKE that Kofi ate.'
- c. Wo nim [sɛ **ɛnora** na Kofi saayɛ].
2ND.SG know COMP yesterday FOC Kofi dance.PST
'You know that its YESTERDAY that Kofi danced.'

Wasa Partial *Wh*- Movement

- ◆ The prediction fails to hold, however, in Wasa. Partial *wh*- movement is robust.
- ◆ All Wasa *wh*- items may undergo partial movement regardless of thematic status.
- (21) a. Wo dwene [sɛ **bɛɾɛma bɛn** na o-kum akoko no]?
2ND.SG think COMP man which FOC 3RD.SG-kill.PST chicken the
'Which man do you think slaughtered the chicken?'
- b. Wo dwene [sɛ **ɛdien(ti)** na bɛɾɛma no kumiye]?
2ND.SG think COMP what FOC man the kill.PST
'What do you think that the man slaughtered?'
- c. Wo dwene [sɛ **ɛhĩfa/adienti** na bɛɾɛma no kum akoko no]?
2ND.SG think COMP where/why FOC man the kill.PST chicken the
'Where/why do you think that the man slaughtered the chicken?'

Partial *Wh*- Movement in Tano (an Aside)

- ◆ In addition to Wasa, partial *wh*- movement is attested in Krachi.
- (22) a. Fe nu [fé **nse** jí ε-mò bwatéó]?
2ND.SG know COMP who FOC PST-kill chicken
'Who do you know slaughtered the chicken?'
- b. Fe nu [fé **ne** jí Kofí ε-mò]?
2ND.SG know COMP what FOC Kofi PST-kill
'What do you know Kofi slaughtered?'
- c. Fe nu [fé **nfrε/kεmeke** jí Kofí ε-mò bwatéó]?
2ND.SG know COMP where/when FOC Kofi PST-kill chicken
'Where/when is it that you know Kofi slaughtered the chicken?'

Partial *Wh*- Movement in Tano (an Aside)

- ◆ Bono joins Wasa and Krachi as another Tano partial *wh*- movement language.
- (23) a. Wo dwene [sɛ **mmema benie** ne be-kum akoko kɛ̃]?
2ND.SG think COMP man which FOC 3ND.SG-kill.PST chicken the
'Which men do you think slaughtered the chicken?'
- b. Wo dwene [sɛ **abe** ne mmema kɛ̃ kumye]?
2ND.SG think COMP what FOC men the kill.PST
'What do you think the men slaughtered?'
- c. Wo dwene [sɛ **sen/dabe** ne Kofí kum akoko kɛ̃]?
2ND.SG think COMP how/when FOC Kofi kill.PST chicken the
'How/when do you think Kofi slaughtered the chicken?'

Partial *Wh*- Movement in Tano (an Aside)

- ◆ The partial movement facts previously discussed are typologically significant. To the best of our knowledge, this is the first report of the existence of partial *wh*- movement in any Kwa language.
- ◆ Situating this breed of *wh*- movement typologically:
 - ◆ Tano partial movement is **NAKED PARTIAL WH- MOVEMENT** (Fanselow 2006).
 - ◆ The partially-moved interrogative is unaccompanied by an overt Q-particle in the clause where it takes scope (i.e. the main clause).
 - ◆ Tano partial movement (at least the case of Wasa) is typologically odd.

Partial *Wh*- Movement in Tano (an Aside)

- ◆ Fanselow's (2006) Generalizations:
 - ◆ **Generalization S1:** If a language tolerates naked partial movement, it also tolerates *wh*- elements in-situ and allows full *wh*- movement.
 - ◆ Krachi: [✓ naked partial movement; ✓ *wh*- in-situ (main & embedded clauses)]
 - ◆ Bono: [✓ naked partial movement; ✓ *wh*- in-situ (main & embedded clauses)]
 - ◆ Asante: [N/A: ✗ naked partial movement]
 - ◆ Wasa: [✓ naked partial movement; ✓ *wh*- in-situ (main clauses)]
 - ◆ **Generalization S2:** If a construction is grammatical with naked partial movement, it can also be constructed with a *wh*- phrase in-situ.
 - ◆ Krachi: [✓ naked partial movement; ✓ embedded *wh*- in-situ]
 - ◆ Bono: [✓ naked partial movement; ✓ embedded *wh*- in-situ]
 - ◆ Asante: [✗ naked partial movement; ✗ embedded *wh*- in-situ]
 - ◆ **Wasa: [✓ naked partial movement; ✗ embedded *wh*- in-situ]**

Summary: Partial *Wh*- Movement

	KRACHI	BONO	WASA	ASANTE TWI
Partial <i>wh</i> -movement	✓	✓	✓	✗
	KRACHI	BONO	WASA	ASANTE TWI
<i>Wh</i> - in-situ (embedded (complement) clauses)	✓ (except 'why')	✓ (except <i>wh</i> -SUBJ & 'why')	✗	✗

Back to the Analysis...

- ◆ To recap:
 - ◆ Krachi & Bono allow *wh*- in-situ in embedded (complement) clauses.
 - ◆ Wasa & Asante do not.
 - ◆ An analysis that appeals to Q-*wh*- dependency formation to license *wh*- in-situ cannot explain all relevant interrogative patterns.
 - ◆ ✓ Krachi & Bono *wh*- items may be licensed non-locally; both allow embedded *wh*- in-situ and partial *wh*- movement to a sub-C position.
 - ◆ ✓ Asante *wh*- items may not be licensed non-locally; neither embedded *wh*- in-situ nor partial *wh*- movement to a sub-C position is possible.
 - ◆ **X Wasa in-situ *wh*- items may not be licensed non-locally; nonetheless, partial movement to a sub-C position is available.**

Wh-In-Situ in Embedded (Complement) Clauses: A Prosodic Analysis

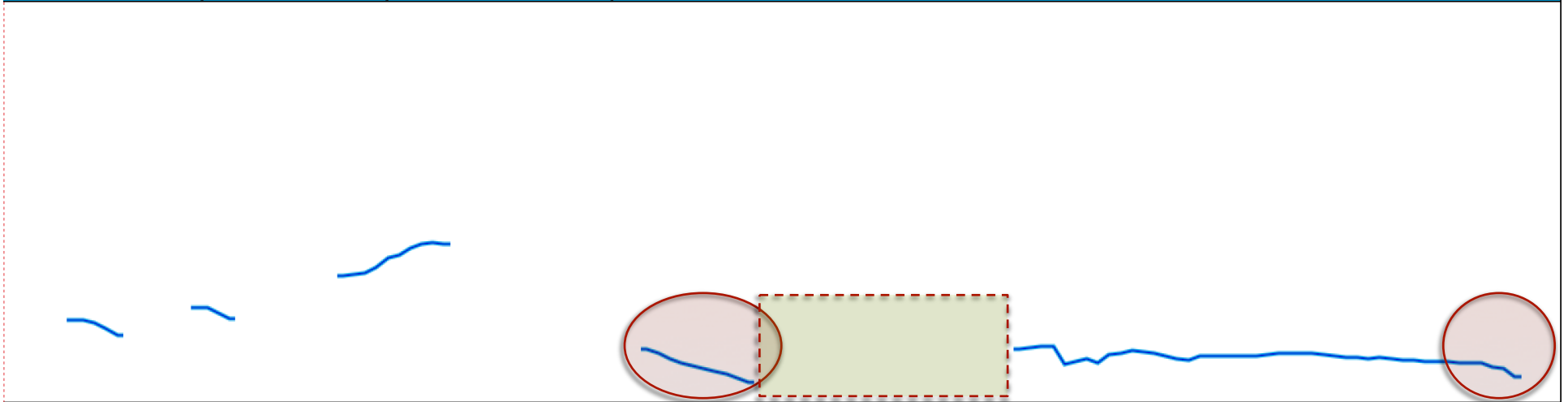
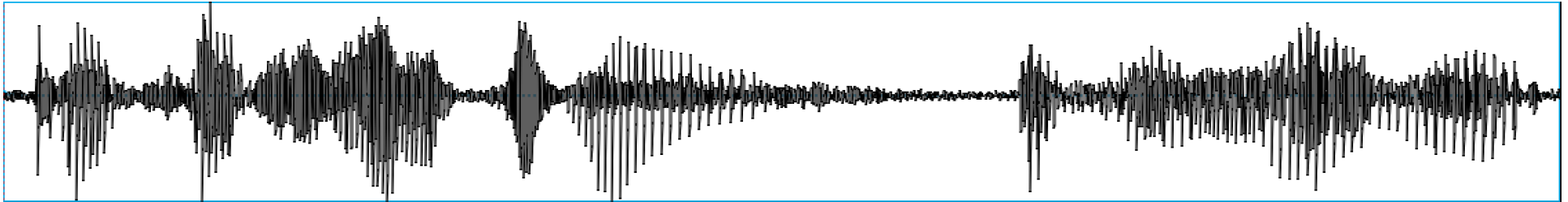
- ◆ Framework of assumptions:
 - ◆ ***The Prosodic Hierarchy*** (Selkirk 1984, Nespor & Vogel 1986):
Prosodic constituents are hierarchically structured:
Intonational Phrase (ι) > Phonological Phrase (φ) > Prosodic Word (ω)
 - ◆ ***Prosodic Mapping*** (Selkirk 2011):
Prosodic structures are built from & largely correspond to syntactic structures.
 - ◆ ***(Prosodic) Derivation by Phase*** (Chomsky 2000, Kratzer & Selkirk 2007):
Syntactic structures are built bottom-up in phases. The introduction of a phase head (v^0 , C^0) triggers the spell-out of its complement. Spell-out domains (SODs) are prosodic constituents: $SOD(v^0) = \varphi$; $SOD(C^0) = \iota$.

Wh-In-Situ in Embedded (Complement) Clauses: A Prosodic Analysis

- ◆ The proposal:
 - ◆ Prosodic licensing of *wh*: In Tano, *wh*- items must be ι -internal at Spell-Out.
- ◆ The analysis:
 - ◆ Which syntactic constituents are mapped onto ι -phrases?
 - ◆ Only root clauses (Downing 1970)
 - ◆ Root clauses and in some languages, embedded clauses (Truckenbrodt 2005)
 - ◆ Embedded (complement) clauses are parsed as ι -phrases in some, but not all Tano languages.
 - ◆ In Krachi & Bono, $SOD(\text{embedded } C^0) = \iota$. ✓ *wh*- in-situ licensed
 - ◆ In Wasa & Asante, $SOD(\text{embedded } C^0) \neq \iota$. ✗ *wh*- in-situ licensed

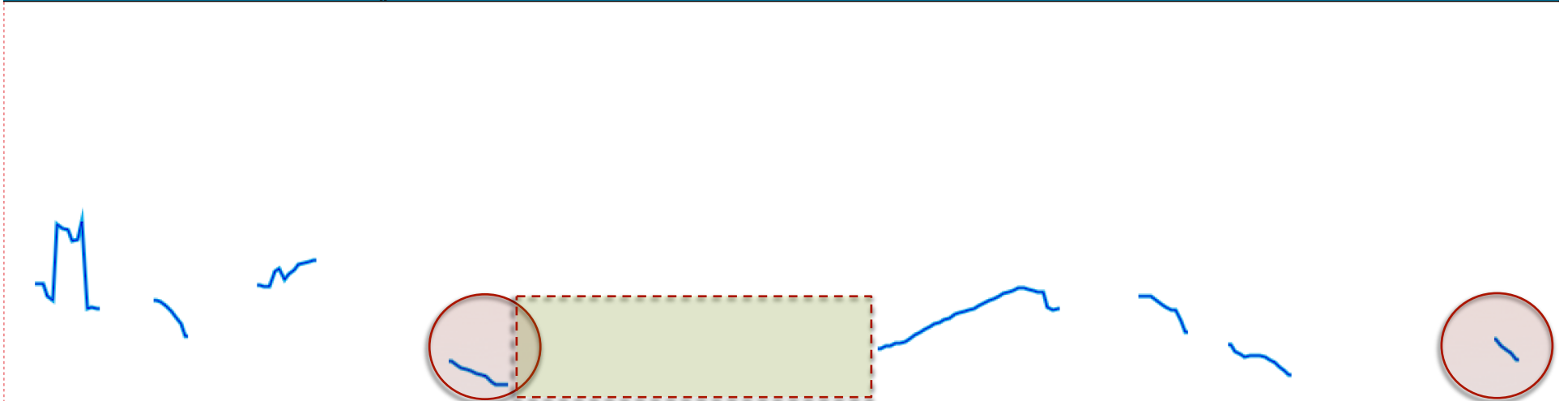
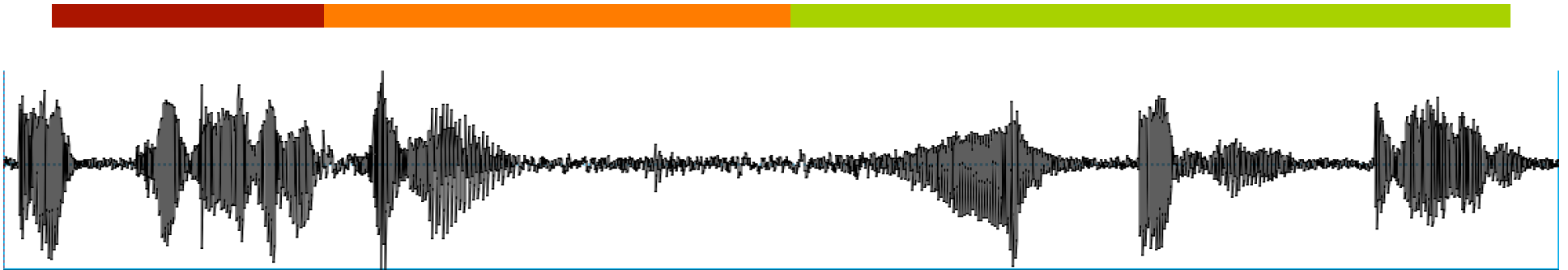
The Prosodic Status of Embedded (Complement) Clauses in Krachi

- ◆ Phonetic correlates of right edge ι -phrase boundaries in Krachi:
 - ◆ L% (also a right edge φ -marker in Krachi (Kandybowicz & Torrence 2012))
 - ◆ Pause
 - ◆ Pitch reset
- ◆ Prosodic behavior of Krachi embedded (complement) clauses:
 - ◆ Lexically H-bearing C^0 *fé* surfaces with an L/falling tone.
 - ◆ Pause separates C^0 from embedded subject.
 - ◆ Pitch reset affects f_0 range of tones in embedded clause.



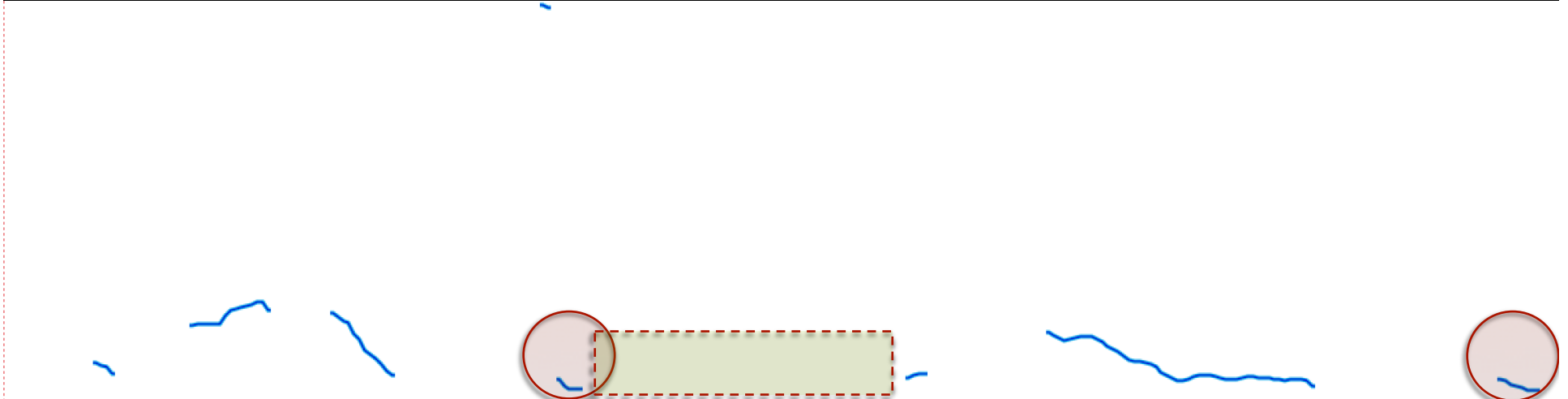
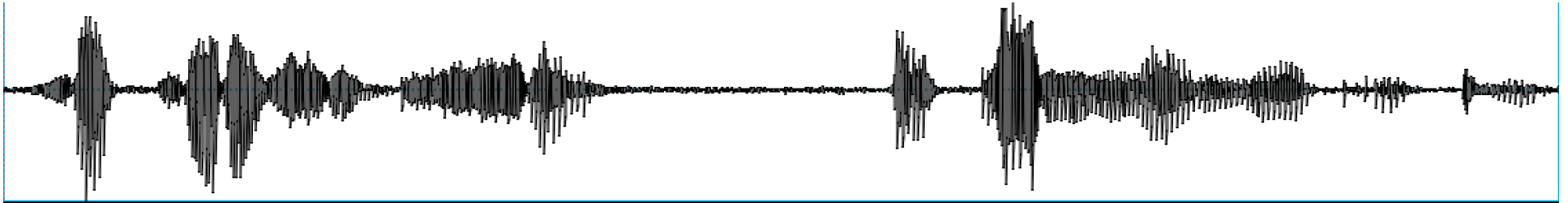
(24) _i(Ke Kofi é- tʃa-o)_i _i(ebo ŋwanɔwa)_i
COMP Kofi PST- dance-CL DET COP strange
'That Kofi danced is strange.'





(25) _l(Ke Kofí é- tʃa-o)_l _l(mé ódum é-fwi)_l
 COMP Kofi PST- dance-CL DET 1ST.SG heart PST-boil
 ‘That Kofi danced angered me (i.e. made my heart boil).’



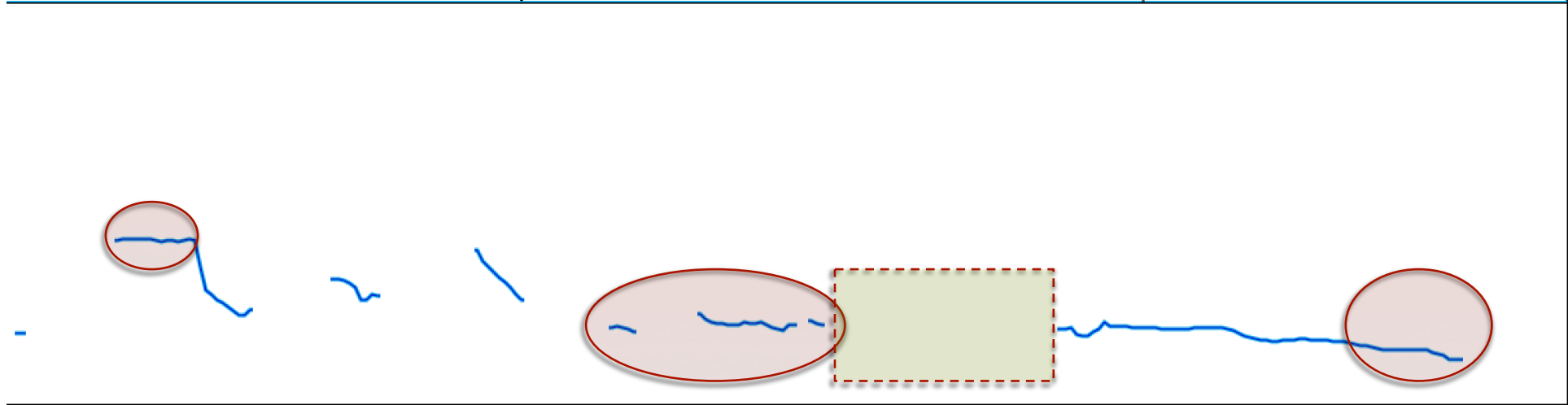
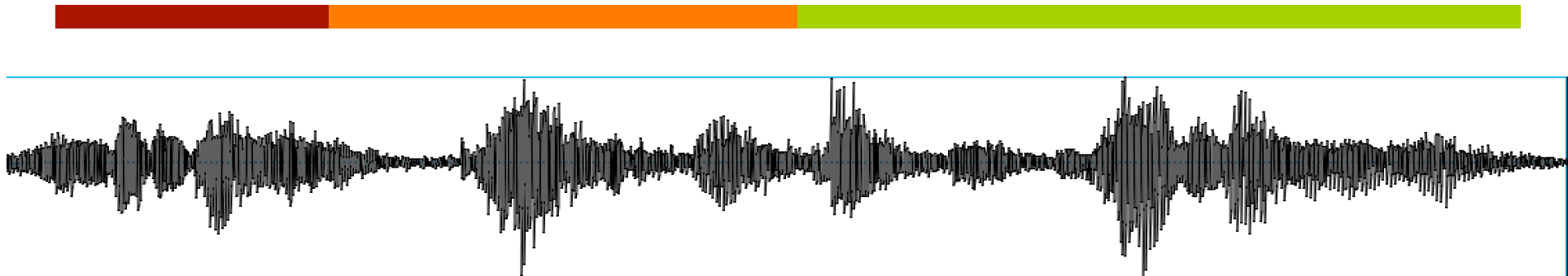


(26) _l(Fε kwáré fí-dʒɪ fé)_l _l(ɔtʃíw ɔ-mo bwatéo)_l
2ND.SG think 2ND.SG-think COMP woman PST-kill chicken
'You think that the woman slaughtered the chicken.'



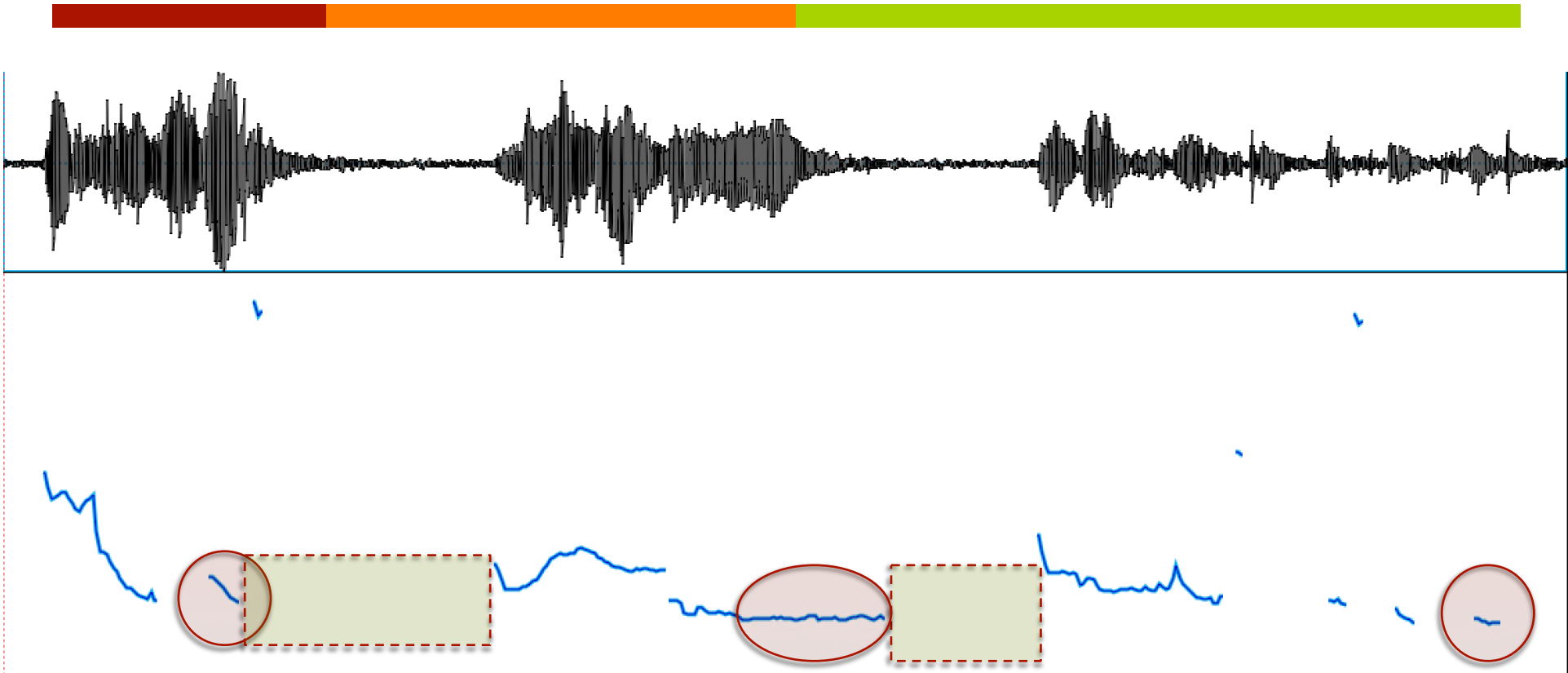
The Prosodic Status of Embedded (Complement) Clauses in Bono

- ◆ Phonetic correlates of right edge ι -phrase boundaries in Bono:
 - ◆ L% (also a right edge φ -marker in Bono)
 - ◆ Pause
 - ◆ Pitch reset
- ◆ Prosodic behavior of Bono embedded (complement) clauses:
 - ◆ Lexically H-bearing C^0 $s\epsilon$ surfaces with a sharp falling tone.
 - ◆ Pause separates C^0 from embedded subject.
 - ◆ Pitch reset affects f_0 range of tones in embedded clause.



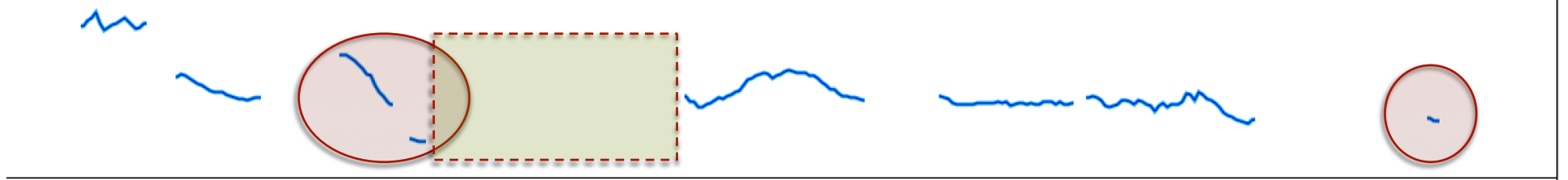
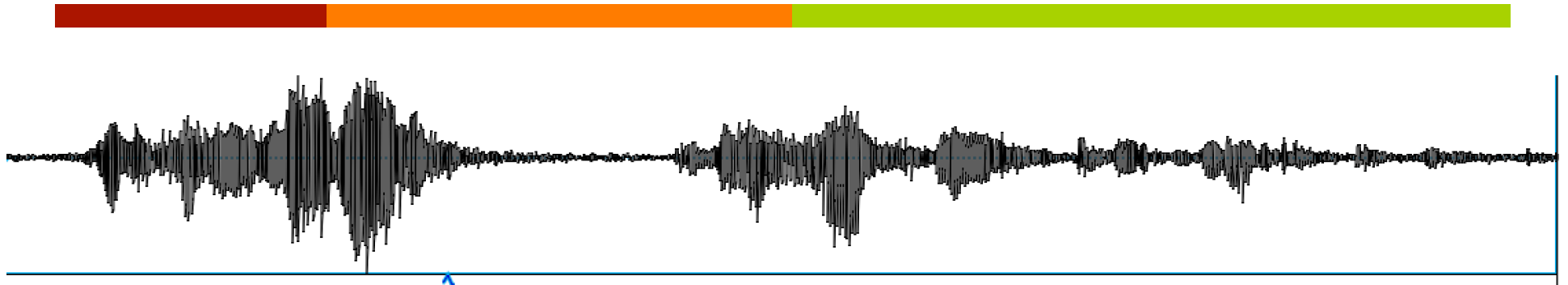
(27) $_{\text{t}}$ (Sε Kofi kum akoko kē) $_{\text{t}}$ $_{\text{t}}$ (yε Ama nwanwa) $_{\text{t}}$
 COMP Kofi kill.PST chicken the do Ama strange/surprise
 'That Kofi slaughtered the chicken surprised Ama.'





(28) $_{\iota}$ (Wo dwene sɛ) $_{\iota}$ $_{\iota}$ (mmema benie) $_{\iota}$ $_{\iota}$ (ne be-kum akoko kɛ̃) $_{\iota}$
 2ND.SG think COMP men which FOC 3RD.PL-kill.PST chicken the
 ‘Which men do you think slaughtered the chicken?’



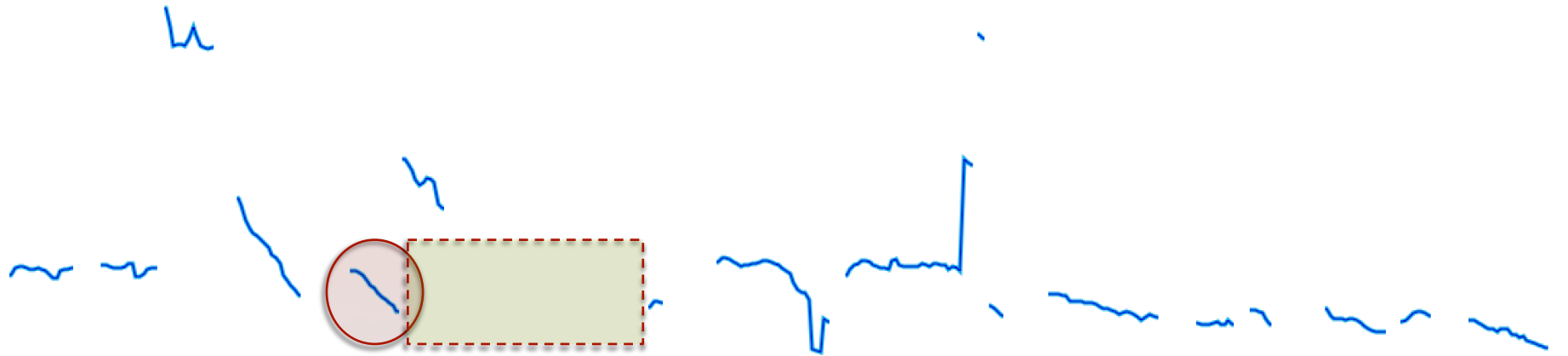
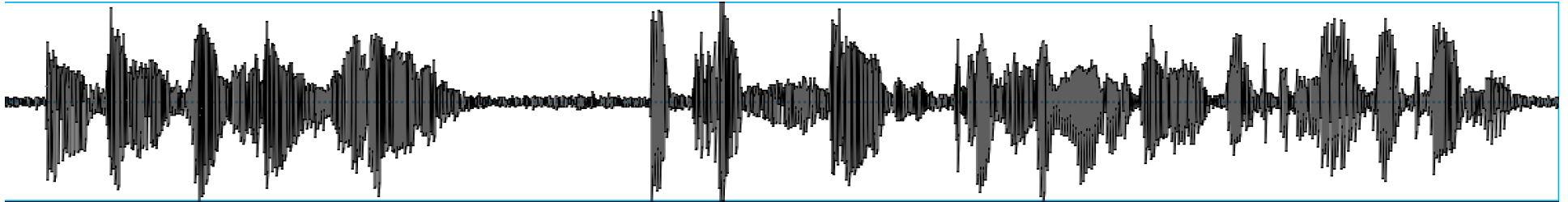


(29) _l(Wo dwene sɛ)_l (mmema kɛ be-kum akoko kɛ)_l
 2ND.SG think COMP men the 3RD.PL-kill.PST chicken the
 'You think that the men killed the chicken.'



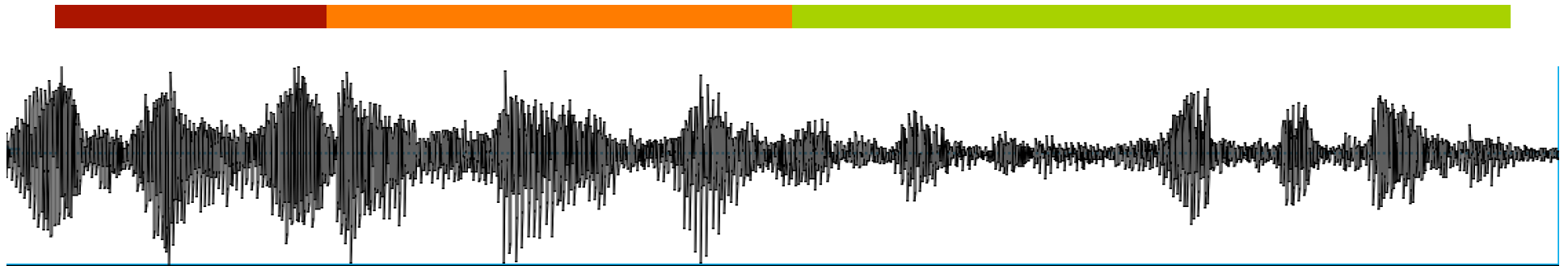
The Prosodic Status of Embedded (Complement) Clauses in Wasa

- ◆ Wasa embedded (complement) clauses do not have the prosodic status of ι -phrases, assuming the existence of comparable phonetic correlates of right edge ι -phrase boundaries (see next slide):
 - ◆ L%
 - ◆ Pause
 - ◆ Pitch reset
- ◆ Prosodic behavior of Wasa embedded (complement) clauses:
 - ◆ Lexically H-bearing C^0 $s\varepsilon$ surfaces with an H tone.
 - ◆ No significant pause separates C^0 from embedded subject.
 - ◆ No pitch reset in embedded clause.



(30) $_{\iota}$ (Nti εsan sε) $_{\iota}$ $_{\iota}$ (εkwan de Kofi ninti o-kum akoko no) $_{\iota}$
because COMP hunger take Kofi therefore 3rd.sg-kill.pst chicken the
'Because he was hungry, Kofi slaughtered the chicken.'



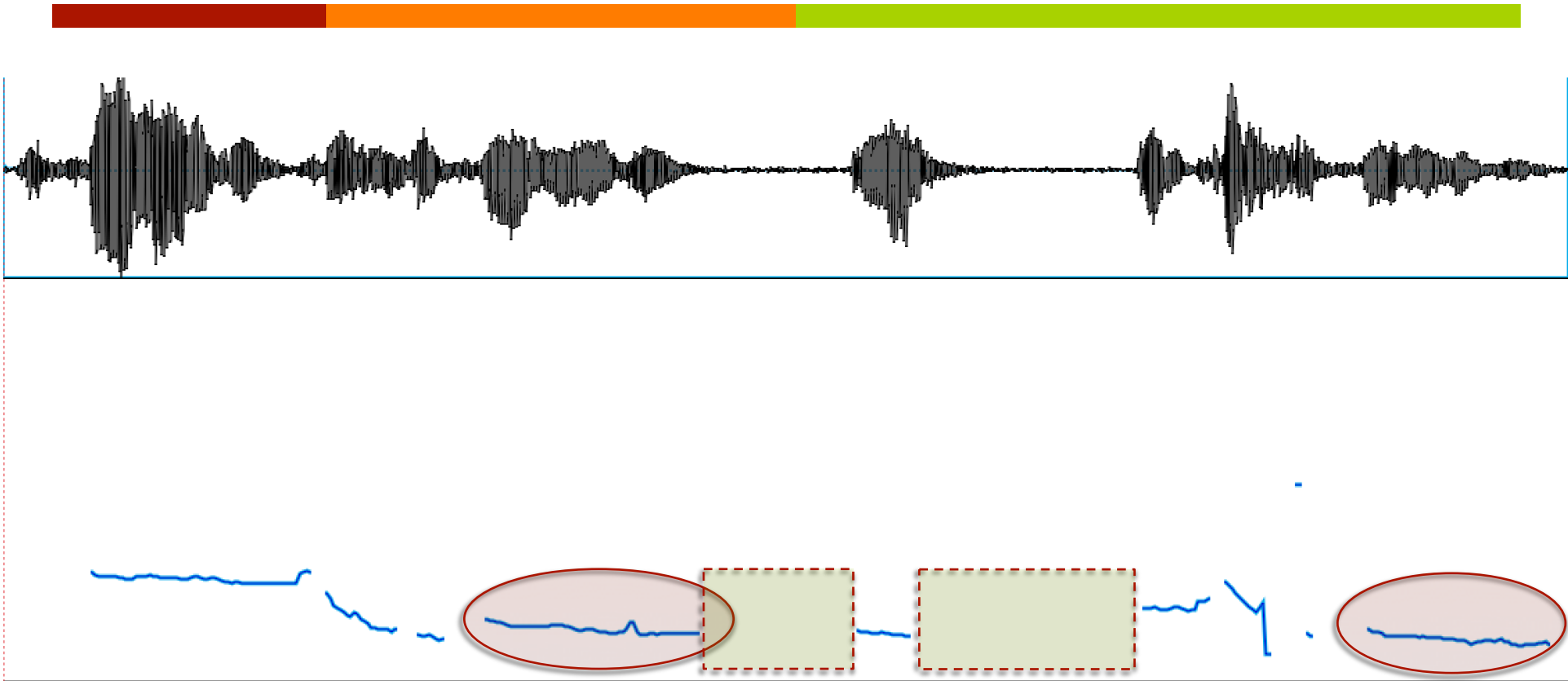


(31) (Wo dwene se berema no be-kum akoko no)
 2ND.SG think COMP man the 3RD.SG-kill.PST chicken the
 'You think that the man killed the chicken.'



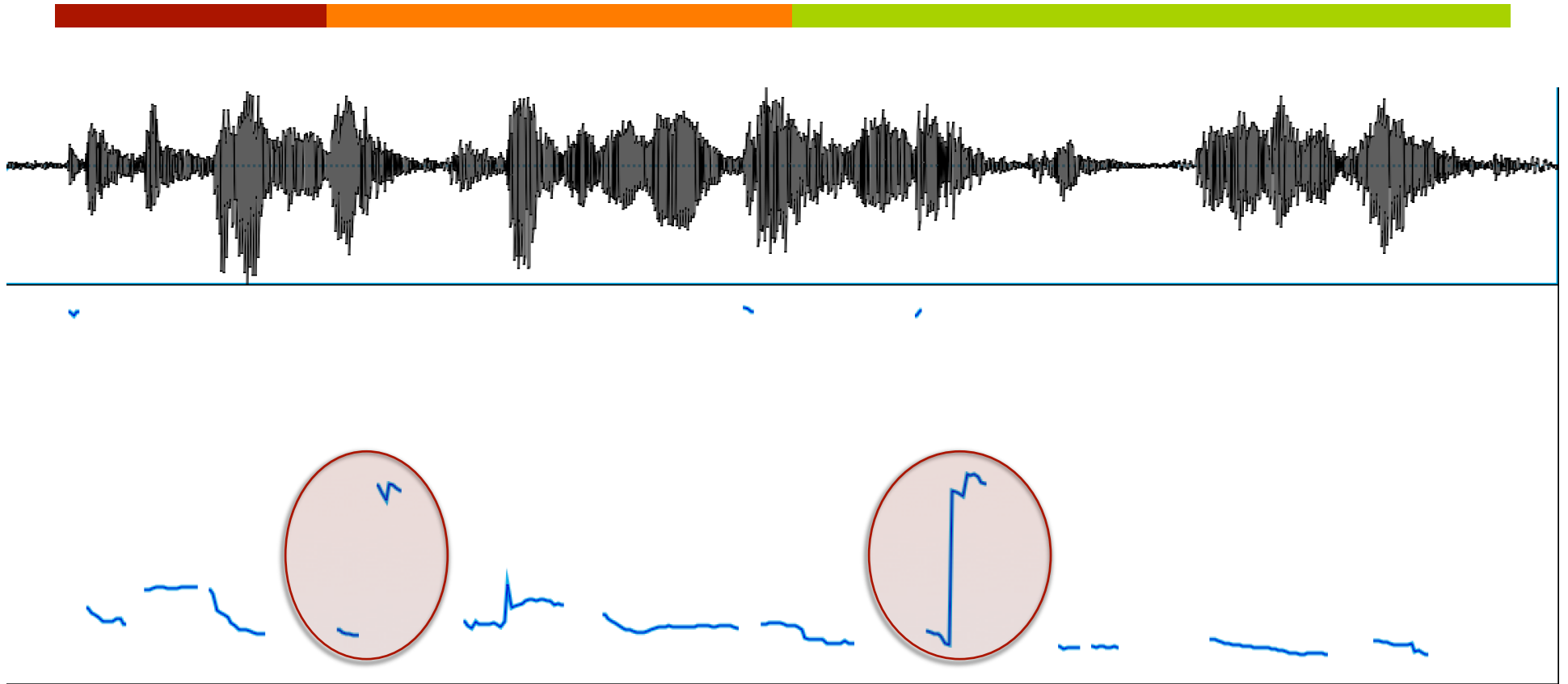
The Prosodic Status of Embedded (Complement) Clauses in Asante

- ◆ Like Wasa, Asante embedded (complement) clauses do not have the prosodic status of ι -phrases, assuming the existence of comparable phonetic correlates of right edge ι -phrase boundaries (see next slide):
 - ◆ L%
 - ◆ Pause
 - ◆ Pitch reset
- ◆ Prosodic behavior of Asante embedded (complement) clauses:
 - ◆ Lexically H-bearing C^0 $s\varepsilon$ surfaces with an H tone.
 - ◆ No significant pause separates C^0 from embedded subject.
 - ◆ No pitch reset in embedded clause.



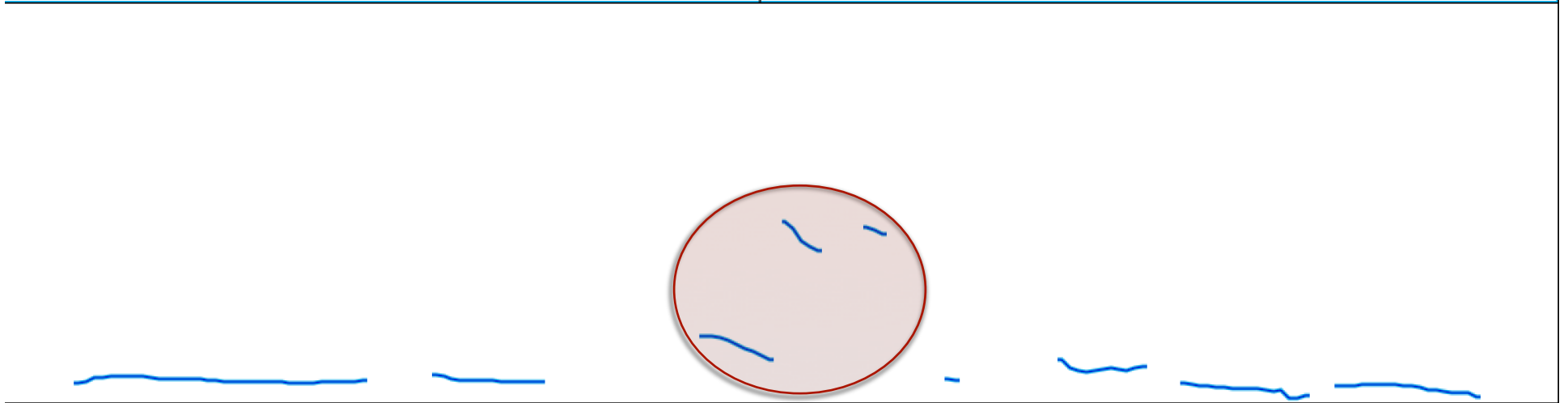
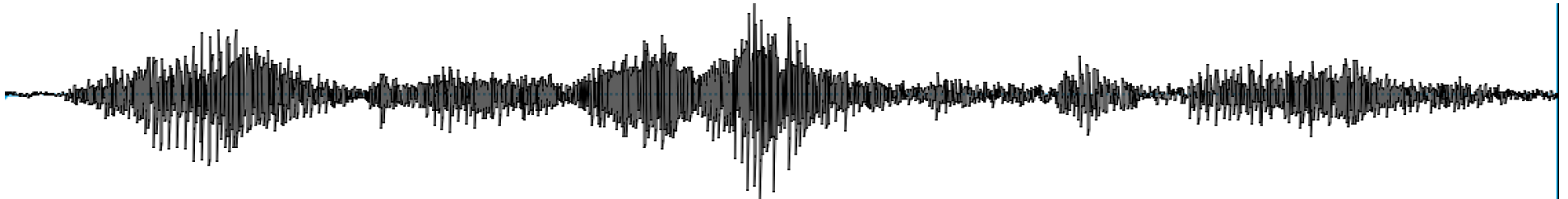
(32) $_{\iota}$ (ɔkraman bi kuu ɔkraman bi) $_{\iota}$ na $_{\iota}$ (o- kuu ɔkraman bi) $_{\iota}$
 dog some kill.PST dog some and 3RD.SG-kill.PST dog some
 'A dog killed a dog and he killed a dog.'





(33) (Kofi kaa sɛ ɛ be tumi a-yɛ sɛ me dɔɔ Ama)_t
 Kofi say.PST COMP 3RD.SG FUT be.able ASP-COP COMP 3RD.SG love.PST Ama
 'Kofi said that it was possible that I loved Ama.'





(34) _t(Yaw kaa sɛ Kofi bɔɔ Ama)_t
 Yaw say.PST COMP Kofi hit.PST Ama
 'Yaw said that Kofi hit Ama.'



Summary: *Wh*- In-Situ (Embedded (Complement) Clauses)

	KRACHI	BONO	WASA	ASANTE TWI
Embedded (complement) clause = ι	✓	✓	✗	✗
	KRACHI	BONO	WASA	ASANTE TWI
<i>Wh</i> - in-situ (embedded (complement) clauses)	✓ (except 'why')	✓ (except <i>wh</i> -SUBJ & 'why')	✗	✗

Roadmap



- ◆ Overview of the Tano languages
- ◆ Main clause *wh-* in-situ
- ◆ Embedded (complement) clause *wh-* in-situ
- ◆ **Island Phenomena**
- ◆ Intervention Effects
- ◆ Wrap Up

Islands

The four languages differ not only in whether they allow for wh-in-situ in embedded clauses. In what follows, we show that they differ in whether they allow wh-in-situ inside of islands.

An island is an environment out of which a wh-expression cannot move:

- (35) a. You talked to the man [that read **the book**]
b. ***What** did you talk to the man [that read ____] Relative Clause Island
- c. [that Bill read **the book**] surprised Mary
d. ***What** did [that Bill read ____] surprise Mary Sentential Subject Island

Krachi Sentential Subject Islands

In Krachi, wh-items cannot be moved out of sentential subjects:

(36) a. [Ke Kofi ε-mò bwatéó] ε-wa ηwanwa.
COMP Kofi PST-kill chicken PST-be strange/surprising
'That Kofi slaughtered the fowl is surprising.'

b. *Ne jí [ke Kofi ε-mò ___] ε-wa ηwanwa?
what FOC COMP Kofi PST-kill PST-be strange/surprising

However, a wh-item in-situ inside of a sentential subject is fine:

c. [Ke Kofi ε-mò ne] ε-wa ηwanwa?
COMP Kofi PST-kill what PST-be strange/surprising
'That Kofi slaughtered WHAT is surprising?'

Krachi Relative Clause Islands

In Krachi, a wh-item cannot be moved out of a relative clause:

(37) a. [ɔtʃiw ke ɔ-mò bwatéó] bò ɲfi.
woman COMP PST-kill chicken LOC here
'The woman who slaughtered the fowl is here.'

b. ***Ne** jí [ɔtʃiw ke ɔ-mò __] bò ɲfi?
what FOC woman COMP PST-kill LOC here

However, a wh-expression can remain in-situ in a relative clause:

c. [ɔtʃiw ke ɔ-mò **ne**] bò ɲfi?
woman COMP PST-kill what LOC here
'The woman who killed WHAT is here?'

Bono Relative Clause Islands

Relative clauses are islands for movement in Bono:

- (38) #**Dabe** ne Kofi hu bema [kẽ o-kum akoko kẽ]?
when FOC K. see.PST man the 3SG-kill.PST chicken the
'What time x is such that at x Kofi saw the man who killed the chicken?'
*'What time x is such that Kofi saw the man who, at x , killed the chicken?'

Bono Sentential Subject Islands

Unlike Krachi, wh-items in Bono cannot surface inside of a sentential subject:

(39) a. *[Sε Kofi kum **abe**] yεε Ama nwonwa?
COMP Kofi kill.PST what make.PST A. surprise
Intended: ‘That Kofi killed WHAT surprised Ama?’

b. *[Sε Kofi kum akoko kē **ahĩfa/dabe/sε/senti**] yεε Ama nwonwa?
COMP K. kill.PST chicken the where/when/how/why make.PST A. surprise
‘That Kofi killed the chicken where/when/how/why surprised Ama?’

Bono Relative Clause Islands

Wh-expressions are also banned from surfacing inside of relative clauses in Bono:

(40) a. Kofi hu [bema kɛ̃ (o-)kum akoko kɛ̃].

K. see.PST man the 3RD.SG-kill.PST chicken the
'Kofi saw the man who killed the chicken.'

b. *Kofi hu [bema kɛ̃ (o-)kum **abe**]?

K. see.PST man the 3RD.SG-kill.PST what

c. *Kofi hu [bema kɛ̃ (o-)kum akoko kɛ̃ **ahĩfa/dabe/sɛ/senti**]?

K. see.PST man the 3RD.SG-kill.PST chicken the where/when/how/why
(OK with matrix construal of *where* (e.g. 'Where did Kofi see...?'))

Wasa Relative Clause Islands

In Wasa, relative clauses are islands for movement:

(41) a. Wɔ̃ bɔ̃ɔ̃ [bɛrɛma na o-kum akoko no]
2SG hit.PST man REL 3SG-kill.PST chicken the
'You hit the man who killed the chicken.'

b. ***Ediɛn** na wɔ̃ bɔ̃ɔ̃ [bɛrɛma na o-kum ____]
what FOC 2SG hit.PST man REL 3SG-kill.PST
Intended: 'What did you hit the man that killed?'

Wasa Relative Clause Islands

However, wh-items cannot surface in-situ in relative clauses either in Wasa:

(42) a. *Wɔ bɔɔ bεɛma [na o-kum **ɛdiɛn**] (no)
2SG hit.PST man REL 3SG-kill.PST what the
Intended: ‘You hit the man who killed what?’

b. *Wɔ bɔɔ bεɛma [na o-kum akoko no **mmerɛ ben/ɛhĩfa/ kwae ben so**]
2SG hit.PST man REL 3SG-kill.PST chicken the time which/where/road which on
Intended: ‘You hit the man who killed the chicken when/where/how?’

Wasa Sentential Subject Islands

Wh-items cannot surface inside of sentential subjects in Wasa:

(43) a. *[Sε **hwae** na o-kum akoko no] γεε Ama hum?
COMP who FOC 3SG-kill.PST chicken the do.PST A. body

b. *[Sε Kofi kum akoko no **εhĩ/mmεε ben/kwae ben so**] γεε Ama hum?
COMP K. kill.PST chicken the where/time which/road which on do.PST A. body

Asante Adjunct Clause Islands

In Asante Twi, *wh*-items cannot surface inside of a temporal adjunct clause island, which has the form of a relative clause:

(44) a. *Na mee sua ade [abere aa **hena** bɔɔ Ama no]
PST 1ST.SG study.PROG thing time REL who hit.PST A. the
Intended: 'I was studying when WHO hit Ama?'

b. *Na mee sua ade [abere aa Kofi bɔɔ **hena** no]
PST 1ST.SG study.PROG thing time REL K. hit.PST who the
Intended: 'I was studying when Kofi hit WHO?'

Krachi Islands-in-Islands

•While Krachi allows for wh-items to surface inside of islands (45a), wh-in-situ is not completely immune to island effects.

•Surprisingly, if the island is embedded within another island (45b), the result is ungrammatical (45c):

(45) a. [Ke {ɔtʃiw ke ɔ-mò bwatéó} bò nfi] ε-wa ηwanwa.
COMP woman COMP PST-kill chicken LOC here PST-be surprising
'[That the {woman that killed the fowl}] is here was surprising.'

b. [Sentential Subject {Relative Clause}]

c. *[Ke {ɔtʃiw ke ɔ-mò ne} bò nfi] ε-wa ηwanwa?
COMP woman COMP PST-kill what LOC here PST-be surprising
Intended: '[That the {woman that killed what} is here] is surprising?'
(‘Which x is such that the fact that the woman that killed x is here is surprising?’)

French Islands-in-Islands

The *islands-in-islands* facts from Krachi are similar to those in French, as reported in Obenauer 1994.

Wh-movement and wh-in-situ are possible in French:

- (46) a. **Où** as-tu trouvé cela/ça? (Obenauer 1994, p. 291: 19c)
where have-you found it
'Where did you find it?'
- b. Tu as trouvé ça **où** (Obenauer 1994, p. 291: 20c)
you have found it where
'Where did you find it?'

NB: All glossing and translations from Obenauer are ours.

French Islands-in-Islands

Similar facts obtain for wh-adjuncts:

(47) a. **Combien** as-tu payé ce livre
how.much have-you paid this book
'How much did you pay for this book?'

(Obenauer 1994, p. 291: 19f)

b. Tu as payé ce livre **combien**?
you have paid this book how.much
'How much did you pay for this book?'

(Obenauer 1994, p291: 20f)

French Islands-in-Islands

It is possible to have wh-in-situ in embedded clauses in French:

- (48) a. Il pense qu'il serait plus prudent de [passer par Arvieux et le col d'Izoard]
he thinks that-it would.be more prudent *de* pass.INF through A. and the pass of'Izoard
'He thinks that it would be more prudent [to go through Arvieux and the Izoard pass]'
(Obenauer: 25a', p. 295)
- b. Tu pense qu'il serait plus prudent de [passer par où]?
you think that-it would.be more prudent *de* pass.INF through where
'Where do you think that it would be more prudent to pass through?'
(Obenauer: 26a', p. 295)

French Islands-in-Islands

It is also possible for a *wh*-item to surface in-situ inside of an islands, such as an adverbial clause:

(49) a. ***Qui**_i s'est-il dèfendu [en accusant **e**_i]? (Obenauer: 28a, p. 296)
who self'is-he defended by accusing

b. Il s'est dèfendu [en accusant **qui**]? (Obenauer: 28b, p. 296)
he self'is defended by accusing who
'He defended himself by accusing who?'

French Islands-in-Islands

However, when a wh-item is in an island inside of an island , the result is ungrammatical:

(50) a. Contexte: Max a failli désespérer, mais finalement il est tombé sur la solution par hasard
Context M. has almost despair but finally he is fallen on the solution by chance
'Context: Max almost fell into despair, but finally he came upon the solution by chance.'

b. Il est tombé sur la solution [_α en faisant quoi]?
he is fallen on the solution by doing what
'He came upon the solution by doing what?'

c. *Il a failli désespérer [_β avant de tomber sur la solution [_α en faisant quoi]]?
he has almost despair.INF before *de* fall.INF on the solution [by doing what

NB: These examples correspond to Obenauer's (29), p. 296

French Islands-in-Islands

Similar facts obtain with complex NPs. Consider the context in (51a):

- (51) a. Contexte: Je connais des gens qui ont de la place chez eux
context I know some people who have *de* the space home their
'I know people who have space in their home.'

If the *wh* is embedded in one island, the result is grammatical:

- b. Vous connaissez [_{NP} des gens qui pourraient héberger **combien de personnes**]?
you know some people who could host how.many *de* people
'You know people who could host how many people?'
- c. *Vous connaissez [_{NP} des gens qui ont [_{NP} une maison où héberger **combien de personnes**]]?
you know some people who have a house where accomodates how.many *de* people

Summary: Wh-in-situ in Islands

	Krachi	Bono	Wasa	Asante
<i>Wh</i> -in-situ (embedded clauses)	✓	✓	✗	✗
<i>Wh</i> -in-situ (Islands)	✓	✗	✗	✗

Roadmap



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Intervention Effects

Bono allows for embedded in-situ *wh*, but not in islands!

Why this effect?

- The effect cannot be blamed on the prosody: Bono allows *wh* in-situ in embedded clauses, but not in islands.
- The Bono, Wasa, and Asante, facts represent a type of *intervention* effect: the *wh*-item cannot be in the c-command domain of particular operators (Beck 1996).
 - Relative clauses involve a relative operator in SpecCP (Op_{REL}).
 - Sentential subjects are typically factive and involve a factive operator in SpecCP (Kiparsky and Kiparsky 1970, Melvold 1991, Collins 1991, Aboh 2005).

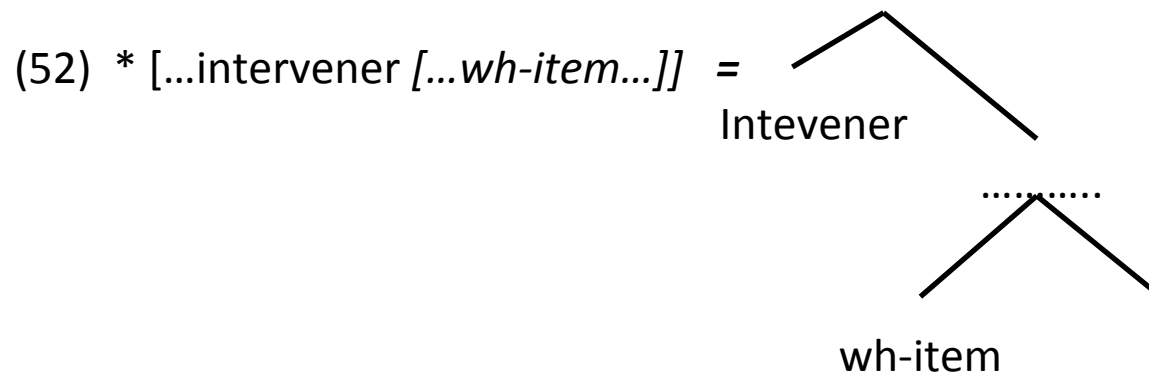
In the cases of Bono, Wasa, and Asante Twi, *wh*-in-situ is constrained by syntactic/semantic properties.

Intervention Effects

We might therefore look for other operators/elements that constrain wh-in-situ.

- Generally, an intervention effect arises when one of a certain class of items, an intervener, c-commands a wh-expression on the surface.

Intervention Configuration:



Common cross-linguistic interveners: negation, *only*, *even*, *every/all*, *always*, *often*

Intervention Effects

An intervention effect in German:

(53) a. Wen hat **wo** **niemand** gesehen? (Beck 1996: 1a)
who.ACC has where nobody.NOM seen
'Who did nobody see where?'

b. *Wen hat **niemand** **wo** gesehen? (Beck 1996: 1b)
who.ACC has nobody.NOM where seen
Intended: 'Who did nobody see where?'

- Wh- item *wo* 'where' c-commands the negative expression (53a): **Grammatical**
- Negative expression c-commands the wh- item (53b): **Ungrammatical**

Intervention Effects

Two major classes of analysis:

- **Intervention effects are syntactic:** Beck 1996, Hagstrom 1998, Pesetsky 2000
 - A wh-expression must move/agree with a +Q complementizer. Interveners disrupt the movement/agreement relation between the [+Q]C° and wh-item.
- **Intervention effects are semantic:** Beck 2006, Cable 2007
 - When an intervener c-commands the wh-item, the result is a semantically uninterpretable string and the derivation crashes.

Intervention Effects

In what follows, we show that:

- All four languages exhibit intervention effects
- The set of interveners varies across the languages

French: Negation as an Intervener

French (like Krachi, Bono, Wasa, and Asante Twi) allows for *wh*- in-situ and *wh*- movement:

(54) a. Jean mange **quoi**?
J. eat.3SG what
'What does Jean eat?'

Wh- in-situ

b. **Qu'**est-ce que Jean mange?
what'is-it that J. eat.3SG
'What does Jean eat?'

Wh- movement

French: Negation as an Intervener

Bošković 1997 observes that when negation c-commands a wh-expression in French, the result is highly marginal or ungrammatical ((55)a) and wh-movement becomes obligatory (55)b):

- (55) a. ?*Jean **ne** mange **pas** **quoi**? (Adapted, Bošković 1997: 8a)
J. NEG eat.3SG NEG what
'What does Jean not eat?'
- b. **Qu**'est-ce que Jean **ne** mange **pas**? (Adapted, Bošković 1997: 8b)
what'is-it that J. NEG eat.3SG NEG
'What does Jean not eat?'

Krachi: Negation as an Intervener

In Krachi, like French, negation cannot c-command a wh-item:

- (56) a. *ɔʈɪw ε-n-dìkè ne?
 woman PST-NEG-cook what
- b. Ne jí ɔʈɪw ε-n-dìkè?
 what FOC woman PST-NEG-cook
 ‘What didn’t the woman cook?’
- c. *ɔʈɪw ε-n-dìkè kudzɔ́ nɛnɛ?
 woman PST-NEG-cook yam how
- d. Nɛnɛ jí ɔʈɪw ε-n-dìkè kudzɔ́?
 how FOC woman PST-NEG-cook yam
 ‘How didn’t the woman cook yam?’

Bono: Negation as an Intervener

In Bono, a wh-expression cannot be c-commanded by negation:

- (57) a. *Bema kě en-kum abe?
man the NEG-kill.PST what
- b. Abe ne bema kě en-kum?
what FOC man the NEG-kill.PST
'What did the man not kill?'
- c. *Bema kě en-kum akoko kě ahĩ(fa)/dabe/sɛ?
man the NEG-kill.PST chicken the where/when/how
- d. Ahĩ(fa)/dabe/sɛ ne bema kě en-kum akoko kě?
where/when/how FOC man the NEG-kill.PST chicken the
'Where/when/how did the man not kill the chicken?'

Wasa: Negation as an Intervener

In Wasa, a wh-item cannot be c-commanded by negation:

- (58) a. *Berema no n-kum den/ɛdien?
man the NEG-kill.PST what
- b. Den ne berema no n-kum?
what FOC man the NEG-kill.PST
'What didn't the man kill?'
- c. *Berema no n-kum akoko no shifa/mmere ben/sen?
man the NEG-kill.PST chicken the where/when/how
- d. Shifa/mmere ben/sen ne berema no n-kum akoko no?
where/when/how FOC man the NEG-kill.PST chicken the
'Where/when/how didn't the man kill the chicken?'

Wasa: A Wrinkle in the Paradigm

Surprisingly, the wh-item *who* can occur in the scope of negation in Wasa:

- (59) Bεrεma no n-hu hwae?
man the NEG-see who
'Who did the man not see?'

Asante: Negation as an Intervener

In Asante Twi, wh-items cannot be c-commanded by negation:

(60) a. *Kofi a-m-bɔ hena?

K. PST-NEG-hit who

b. Hena na Kofi a-m-bɔ (no)?

who FOC K. PST-NEG-hit 3RD.SG

‘Who didn’t Kofi hit?’

c. *Kofi a-n-kɔ he/(ɛ)berɛ ben/sɛn?

K. PST-NEG-go where/when/how

d. He/(ɛ)berɛ ben/sɛn na Kofi a-n-kɔ?

where/time which/how FOC K. PST-NEG-go

Korean & French: 'Only' as an Intervener

In both Korean and French, a wh-item cannot be c-commanded by an *only*-phrase:

Korean

- (61) a. *?Minsu-**man** **nuku-lûl** manna-ss-ni? *only...wh
Minsu-only who-acc meet-past-Q
'Who did only Minsu meet?'
- b. **Nuku-lûl** minsu-**man** manna-ss-ni? ✓wh...only
who-acc minsu-only meet-past-Q
'Who did only Minsu meet?'

French

- (62) a. ***Seulement** Jean arrive à faire **quoi**? *only...wh
only Jean arrives to do what
'What does only Jean manage to do?'
- b. **Qu'**est-ce que **seulement** Jean arrive à faire? ✓wh...only
what is-it that only Jean arrives to do
'What does only Jean manage to do?'

Krachi: ‘Only’ as an Intervener

Next, we consider ‘only’ phrases in Krachi:

(63) ɔɲínó d̀̀òò jí ɔ-m̀̀ò bwatéó.
man only FOC PST-kill chicken
‘Only the man killed the chicken.’

In Krachi, ‘only’ phrases can c-command wh-items:

(64) a. **Ne** jí ɔɲínó **d̀̀òò** ɔ-m̀̀ò?
what FOC man only PST-kill
‘What did only the man kill?’

b. ɔɲínó **d̀̀òò** jí ɔ-m̀̀ò **ne**?
man only FOC PST-kill what
‘What did only the man kill?’

Krachi: ‘Only’ as an Intervener

Adjuncts too can appear under ‘only’ phrases:

- (65) a. **Ƙemeké/nɛɛ** jí ɔ́nínó **dòò** ɔ-mò bwatéó?
when/how FOC man only PST-kill chicken
‘When/how did only the man kill the chicken?’
- b. ɔ́nínó **dòò** ɔ-mò bwatéó **ƙemeké/nɛɛ**?
man only PST-kill chicken when/how
‘When/how did only the man kill the chicken?’

Bono: ‘Only’ as an Intervener

In Bono, a *wh*- expression can be c-commanded by an *only*-phrase:

(66) a. Bɛma kɛ̃ nkwaan kum akoko kɛ̃.
man the only kill.PST chicken the
‘Only the man killed the chicken’

(67) a. **Abe** ne bɛma kɛ̃ nkwaan kumiye?
what FOC man the only kill.PST
‘What did only the man kill?’

b. Bɛma kɛ̃ nkwaan kum **abe**?
man the only kill.PST what
‘What did only the man kill?’

Bono: ‘Only’ as an Intervener

‘Only’ phrases have no effect on adjunct wh-items either:

- (68) a. **Sen/ahĩ/dabe** ne bɛma kɛ̃ nkwaan kum akoko kɛ̃?
how/where/when FOC man the only kill.PST chicken the
‘How/where/when did only the man kill the chicken?’
- b. Bɛma kɛ̃ nkwaan kum akoko kɛ̃ **sɛ/ahĩ/dabe**?
man the only kill.PST chicken the how/where/when
‘How/where/when did only the man kill the chicken?’

Wasa: ‘Only’ as an Intervener

Wasa too shows no intervention effect with ‘only’:

(69) a. Bεrεma no nkwaan kum akoko no.
man the only kill.PST chicken the
‘Only the man killed the chicken.’

b. **ɛdien** na bεrεma no **nkwaa** kumie?
what FOC man the only kill.PST
‘What did only the man kill?’

c. Bεrεma no **nkwaan** kum **den**?
man the only kill.PST what
‘What did only the man kill?’

Wasa: ‘Only’ as an Intervener

In Wasa, adjuncts are immune to intervention by ‘only’:

- (70) a. **Kwae bɛn so/ɛhifa** na bɛɛma no **nkwa** kum akoko no?
road which on/where FOC man the only kill.PST chicken the
‘How/where did only the man kill the chicken?’
- b. Bɛɛma no **nkwa** kum akoko no **kwa** **bɛn so/ɛhifa**?
man the only kill.PST chicken the road which on/where
‘How/where did only the man kill the chicken?’

Asante: ‘Only’ as an Intervener

Unlike Krachi, Bono, and Wasa, Asante Twi wh-items **cannot** surface in the c-command domain of an *only*-phrase:

(71) a. **Hena** na Kofi **nkoara** bɔɔ (no)?
who *na* Kofi only hit.PST 3sg
‘Who is it that Kofi didn’t hit?’

b. *Kofi **nkoara** bɔɔ **hena**?
Kofi only hit.PST who
‘Who did only Kofi hit?’

Japanese: ‘Every’ as an Intervener

In Japanese, a universal quantifier acts as an intervener:

- (72) a. ?* Dono hito-mo **nani-o** yonda no? (Pesetsky 2000: 164a)
every person what-ACC read Q
‘What did every person read?’
- b. **Nani-o** dono hito-mo yonda no? (Pesetsky 2000: 165b)
what-ACC every person read Q
‘What did every person read?’

Krachi: ‘Every’ and Intervention

Unlike Japanese, Krachi wh-items can surface in the c-command domain of a universal quantifier:

- (73) a. **Ne** jí **ɔtʃi** **biàà** é-ďíké?
what FOC woman every PST-cook
‘What did every woman cook?’
- b. **ɔtʃi** **biàà** é-ďíké **ne**?
woman every PST-cook what
‘What did every woman cook?’
- c. **Frɛ/kɛmeké** jí **ɔtʃi** **biàà** é-ďíké kudzó?
where/when FOC woman every PST-cook yam
‘Where/when did every woman cook yam?’
- d. **ɔtʃi** **biàà** é-ďíké kudzó **nfrɛ/kɛmeké**?
woman every PST-cook yam where/when
‘Where/when did every woman cook yam?’

Bono: ‘Every’ and Intervention

In Bono, ‘every’ is not an intervener:

- (74) a. Bɛma **biaa** huu **hwan**?
man every see.PST who
‘Who did every man see?’
- b. **Hwan** ne bɛma **biaa** huye?
who FOC man every see.PST
‘Who did every man see?’
- c. **Dabe/ahĩfa** ne bɛma **biaa** kane nwoma kɛ?
when/where FOC man every read.PST book the
‘When/where did every man read the book?’
- d. Bɛma **biaa** kane nwoma kɛ **dabe/ahĩfa**?
man every read.PST book the when/where
‘When/where did every man read the book?’

Wasa: ‘Every’ and Intervention

In Wasa, ‘every’ does not count as an intervener:

(75) a. Mmɛɛɛma no nyinaa kae krataa no.
men the all read.PST book the
‘All the men/every man read the book.’

b. **Den** na mmɛɛɛma no **nyinaa** kaeyɛ?
what FOC men the all read.PST
‘What did all the men read?’

c. Mmɛɛɛma no **nyinaa** kae **den**?
men the all read.PST what
‘What did all the men read?’

Wasa: ‘Every’ and Intervention

Wasa adjuncts are unaffected by being commanded by ‘every’:

- (76) a. **Ehifa/mmere ben** na mmerema no **nyinaa** kae krataa no
where/time which FOC men the all read.PST book the
‘Where/when did all the men read the book?’
- b. Mmerema no **nyinaa** kae krataa no **ehifa/mmere ben**?
men the all read.PST book the where/time which
‘Where/when did all the men read the book?’

Asante: ‘Every’ and Intervention

In Asante Twi, universal quantifiers do not act as interveners:

- (77) a. **Osuani biara** bɔɔ **hena**?
student every hit.PST who
‘Who did every student hit?’
- b. **Hena** na **osuani biara** bɔɔɛ?
who FOC student every hit.PST
‘Who did every student hit?’

French: 'Even' as an Intervener

In French, wh-items cannot be c-commanded by a focused phrase with *even*:

(78) a. ***Même** JEAN arrive à faire **quoi**?
even J. arrives to do what

b. **Qu'**est-ce que **même** JEAN arrive à faire?
what'is-it that even J. arrive to do
'What does even JEAN manage to do?'

NB: Adapted from Mathieu 1999, (13a)-(13b).

Krachi: ‘Even’ as an Intervener

In Krachi, a *wh*-expression *can* be c-commanded by a focus phrase with *even*:

- (79) a. ɔ́nínó kóráá ε-mò bwatéó.
man even PST-kill chicken
‘Even the man killed a chicken.’
- b. **Ne** jí ɔ́nínó kóráá ε-mò?
what FOC man even PST-kill
‘What did even the man kill?’
- c. ɔ́nínó kóráá ε-mò **ne**?
man even PST-kill what
‘What did even the man kill?’

Krachi: ‘Even’ as an Intervener

‘Even’ phrases have no effect on adjuncts in Krachi:

- (80) a. **Nενε/κεμεκέ** ĵi **ɔɲínó kóráá** ε-mò bwatéó?
how/when FOC man even PST-kill chicken
‘How/when did even the man kill the chicken?’
- b. **ɔɲínó kóráá** ε-mò bwatéó **nενε/κεμεκε**?
man even PST-kill chicken how/when
‘How/when did even the man kill the chicken?’

Asante: ‘Even’ as an Intervener

In Asante, *wh*-items *cannot* surface in the c-command domain of an *even*-phrase:

- (81) a. *Kofi mpo bɔɔ hena?
Kofi even hit.PST who
‘Who did even Kofi hit?’
- b. Hena na Kofi mpo bɔɔ (no)?
who FOC Kofi even hit.PST 3sg
‘Who is it that even Kofi hit?’

A Krachi-specific Intervener

In Krachi, the modal *fɪŋki* “might” acts as an intervener:

(82) a. *ɔʈɪw *fɪŋki* kɛ-mo *ne*?
 woman might FUT-kill what

Might c-commands what

b. *Ne* ʝi ɔʈɪw *fɪŋki* kɛ-mo?
 what FOC woman might FUT-kill
 ‘What might the woman kill?’

What c-commands might

Summary: Intervention in Tano

	Krachi	Bono	Wasa	Asante Twi
Negation	Yes	Yes	Yes	Yes
Op _{REL}	No	Yes	Yes	Yes
Op _{FACTIVE}	No	Yes	Yes	Yes
<i>Only</i>	No	No	No	Yes
<i>Even</i>	No	N/A	N/A	Yes
<i>Every/all</i>	No	No	No	No
<i>Modal</i>	Yes	N/A	N/A	N/A

Overall Summary

- The Tano interrogative rainbow:
 - Full Movement
 - Wh-in-situ (in matrix and embedded clauses)
 - Partial wh-movement
- We've argued that unweaving these patterns requires a holistic interface-oriented approach to language documentation and analysis:
 - Wh- in-situ in embedded clauses implicates syntax/phonology interface.
 - Intervention effects implicate the syntax/semantics interface.



Ye daa se!