



The Prosody of Multiclausal Constructions in Cayuga *

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1 Nutshell

1.1 Empirical

- investigate the prosody and intonation of content questions in Cayuga (Iroquoian).
- single clause questions → also examine (i) long-distance (multi-clausal) content questions and (ii) embedded questions (aka indirect questions).
- requires a revision of intonation pattern for single-clause content questions proposed by Williams (2013).
- embedded questions have a similar prosody to main questions
- contrasts with the standardly accepted generalization that embedded questions have the same intonation as declaratives.

1.2 Theoretical

- will sketch out a tentative analysis under Match Theory that captures the generalizations here
- prosodic domains are read off of spell out domains (Kahnemuyipour, 2009; Ishihara, 2007)
- This includes ι , ϕ , and ω
- ω usu thought to be a syntactic head
- proposal:
 - ω corresponds to Marantzian xP (not examined here)
 - ϕ corresponds to VoiceP, CP, and KP (and perhaps an intermediate phase between KP and nP)
 - ι corresponds to SaP (speech act projection - joint work with Sihun Jung)
- multiclausal structures will require restructuring of prosodic structure

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2 Background

- Cayuga (Northern Iroquoian) - spoken in Southern Ontario (Six Nations) and to a small extent in New York State (Cattaraugus Reserve)
- vigorous revitalization activities underway in response to massive language shift to English

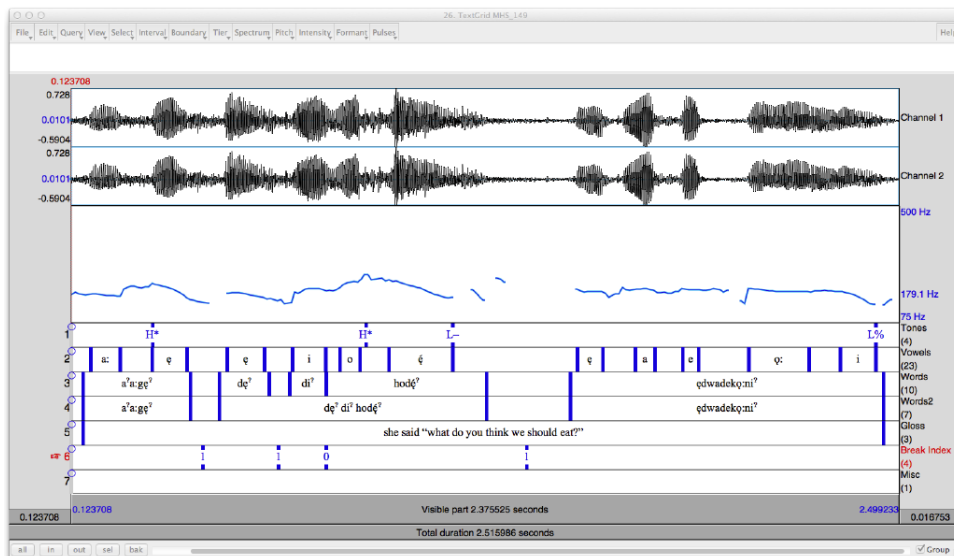
2.1 Prosody in Questions

- Few studies address prosody and intonation in Cayuga (Mithun and Henry, 1984; Williams, 2013)
- Mithun and Henry (1984) - yes/no questions no distinct prosody - obligatory question particle, *gɛh*
- Williams (2013) analyzes the prosody of content questions in Cayuga
- content questions: a high pitch accent, followed by a low phrase accent, followed by a low boundary tone
- H* L- L% (Williams, 2013, p. 127)

(1) aʔa:gɛʔ dɛʔ diʔ hodɛʔ ɛdwadɛkɔ:niʔ

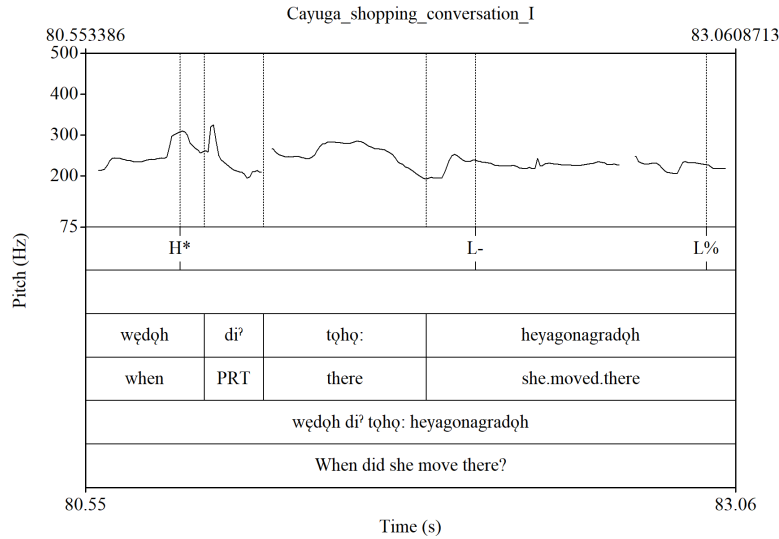
aʔa:gɛʔ dɛʔ diʔ hodɛʔ ɛdwadɛkɔ:niʔ
 she.said what PRT what we.should.eat.it

'She said, "What do you think we should eat?''



- gives rise to high pitch on the wh-word followed by a low plateau to the end of the sentence.
- confirmed here

(2) wɛdɔh diʔ tɔhɔ: heyagonagrɔdɔh
 when PRT there she.moved.there
 'When did she move there?'



- clear pitch compression on verb
- pitch excursions on particles
- one possibility: particle group forms a prosodic word Michelson (1988)
- H* appears on stressed syllable of prosodic word
- L- L% appears at beginning of following prosodic word
- extend Williams’ analysis to include long-distance and embedded questions.

2.2 Long Distance Questions

- obligatory *wh*-movement in Cayuga, including in long-distance questions (Barrie et al., 2014)

(3) Deʔhoʔdeʔ aheʔ hyaʔnih aʔehni:nəʔ neʔ sanə:haʔ
 what he.said your.father she.bought.it NE your.mother
 ‘What did your father say your mother bought?’

2.3 Embedded Questions

- obligatory *wh*-movement to scope position (Barrie et al., 2014)

(4) John honəhdənyəh səh aʔek neʔ swahyowaʔ.
 John wonders who ate NE apple
 ‘John wonders who ate the apple.’

- *wh*-movement to left edge of clause where *wh*-phrase takes scope

3 Methodology

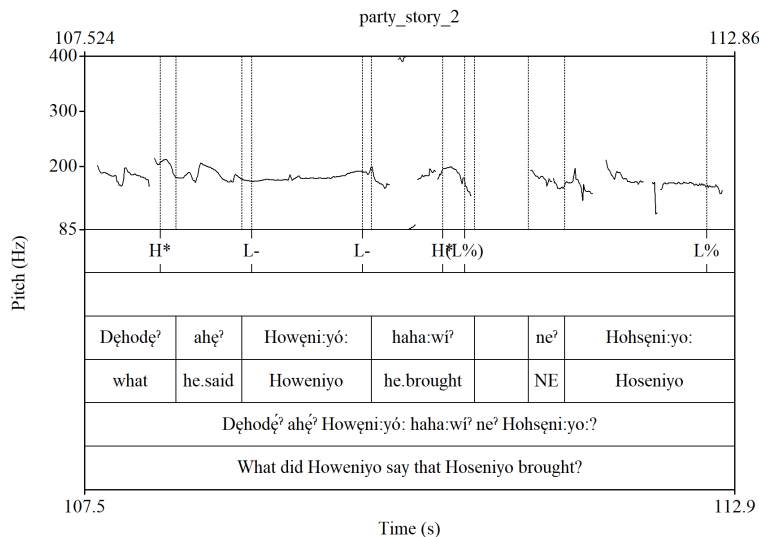
- storyboard method to elicit content questions (Matthewson and Burton, 2015).

- A story was created to elicit questions about what one person reported another person's actions to be.
- The scenario consisted of a conversation between two people. One participant asked what the person in the story reported and the other participant answered what they reported.
- The story was created in such a way that the participant had to distinguish between false reports and reality within the context of the story.
- The story was rehearsed several times and then recorded. The pitch tracks were produced with Praat (Boersma and Weenink, 2018).

4 Results

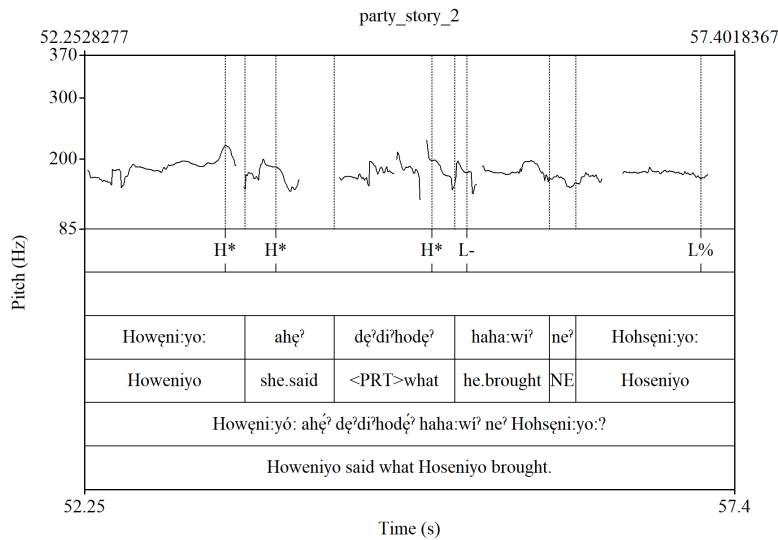
- results generally conform to Williams' description
- H* on question word
- conforms to Haida (2007) - *wh*-words are typically focussed
- Long-distance content questions produced interesting results.
- the *wh*-phrase has a high pitch accent (H*, boldface in (5)) followed by a low plateau (underlining), as per Williams (2013)
- low plateau does not extend to the end of the sentence
- only as far as the next clause edge
- may spill over to next clause
- remainder of the sentence has fairly typical intonation

- (5) **Dəhodé?** ahé? Howəni:yó: haha:wí? ne? Hohsəni:yo:?
 what he.said Howeniyo he.brought NE Hoseniyo
 'What did Howeniyo say that Hoseniyo brought?'



- clear compression or *erradication* (Ladd, 1996; Ishihara, 2007) visible until the start of the embedded verb
- Consider next embedded questions.
- Again, the *wh*-phrase bears a high pitch accent (**H***, boldface) followed by a low plateau to the end of the sentence (underlining).

(6) Howeni:yó: ahé? dɛ́diʔhodé? **haha:wíʔ** neʔ Hohsɛni:yo:
 Howeniyo he.said what he.brought NE Hoseniyo
 'Howeniyo said what Hoseniyo brought.'



- compression visible again to the right of the *wh*-word
- small excursion on verb...possibly due to laryngeal consonants
- Taken together with the results of Williams (2013), these results suggest that Cayuga generally employs the intonation pattern H* L- L% for content questions
- however: low plateau runs to the end of the *clause* rather than to the end of the sentence.

5 Discussion

- compression associated with *wh*-questions seems to go to the end of the clause
- does not differ between matrix and embedded clauses
- prosodic hierarchy of Cayuga
- Dyck (2009) - the "word" (verbal complex) is a phonological phrase, ϕ
- Match Theory (Selkirk, 2009)

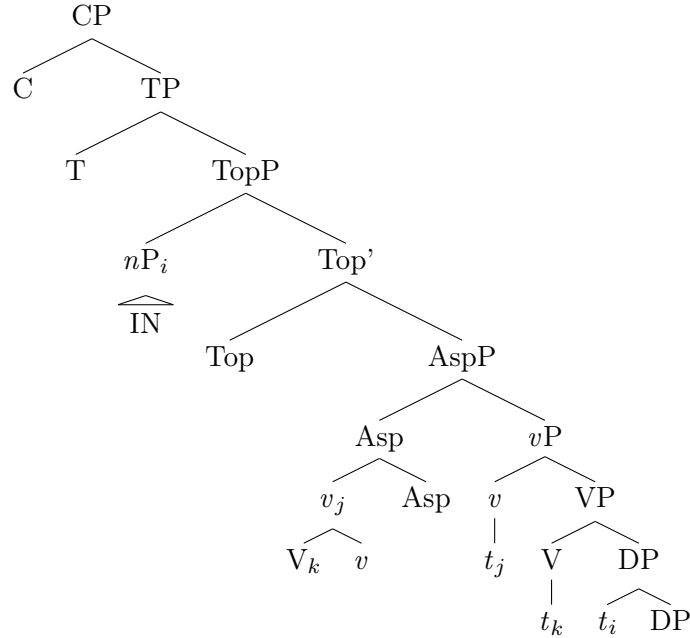
- ω - X^0
- ϕ - XP

- ι - clause/domain of illocutionary force
- take seriously the idea that prosodic domains are read off of spell-out domains
- a head is not a spell-out domain
- propose the following amendment
 - ω - xP : nP , aP , and vP
 - ϕ - VoiceP, CP, and KP (and perhaps an intermediate phase between KP and nP)
 - ι - SaP (speech act projection - joint work with Sihun Jung)

5.1 The Phonological Word

- tentative proposal: Phonological Word can correspond to low phase: nP , vP , aP
- structure of even very small words has gotten progressively larger and larger (Marantz, 1997; Starke, 2009)
- Prosodic hierarchy correlates in Cayuga
 - Intonational Phrase - Alternative stress assignment (Oneida, ι final devoicing) - multi-word clause
 - Phonological Phrase - domain of stress assignment, may include neighbouring particles
 - Phonological Word - domain of footing, extrametrical consonants (Dyck, 2009), possibly secondary 'stress' ???
- Words in many languages may arise by HM, forming an xP .
- Proposal here: amounts to saying that phonological word is an xP , regardless of whether it is formed by HM or some other way.
- Consider the following example.

- (7) waʔkhɔdayɛthwaʔ
 waʔ-k-hɔt-a-yɛthw-aʔ
 FACT-1SG.AG-wood-JOIN-plant-PUNC
 'I planted a tree.'



- We now have the correct order for the morphemes in the verbal complex:

(8) C-T-IN-V-*v*-Asp = MOOD-AGR-IN-V-CAUS-ASP

- nP is a ω
- Phase sliding due to HM: Asp is new phase head as v has undergone HM up to Asp - AspP is a ω
- Prefixes are spelled out after as a ω (to be clarified in future research)

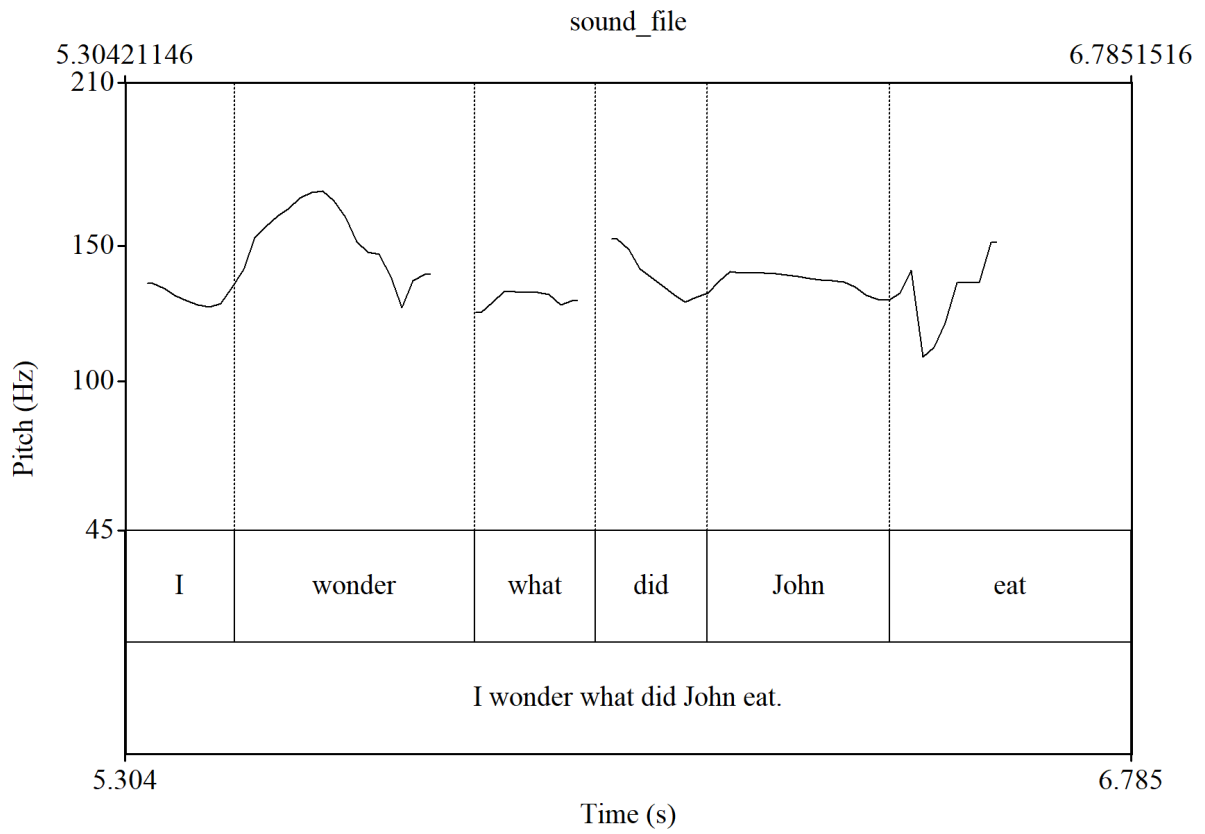
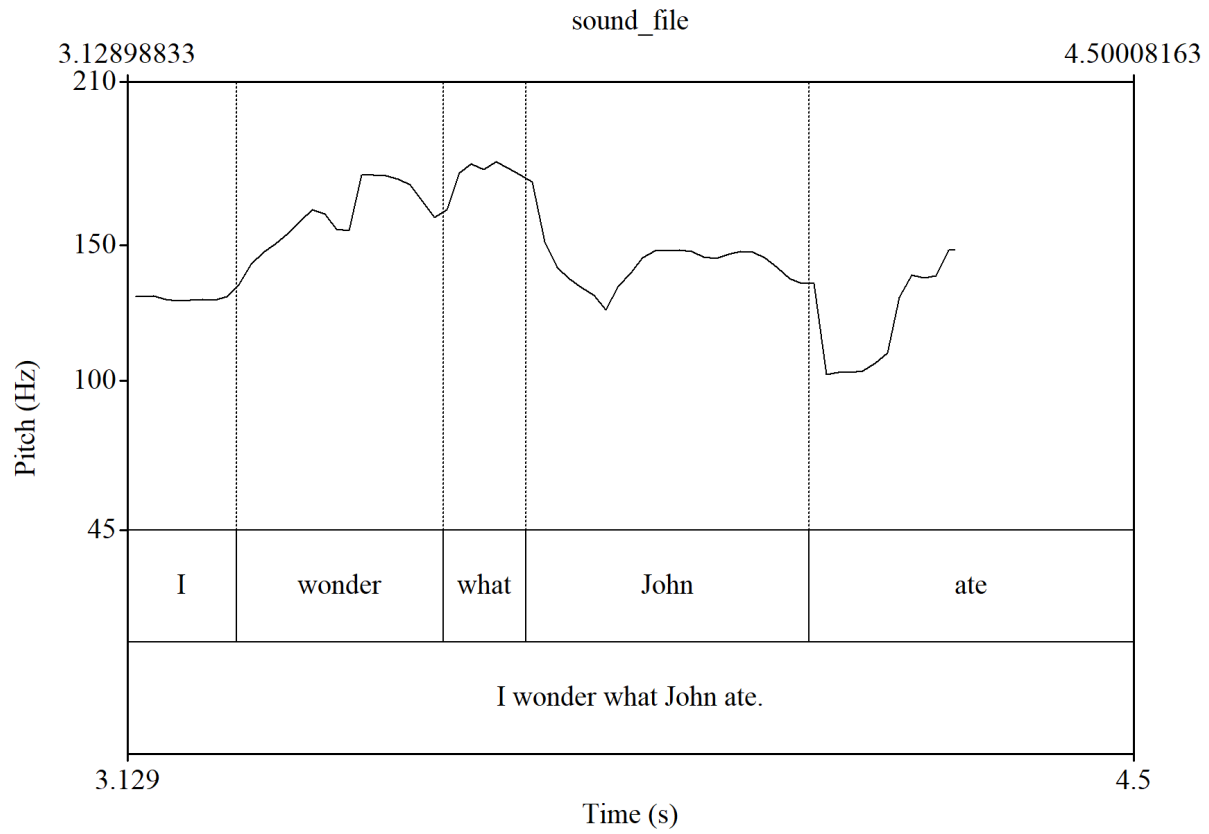
5.2 Multi-clausal Utterances

- consider multi-clausal utterances

(9) a. John thinks that Mary won the race.
 b. John said that never again would he enter that race.

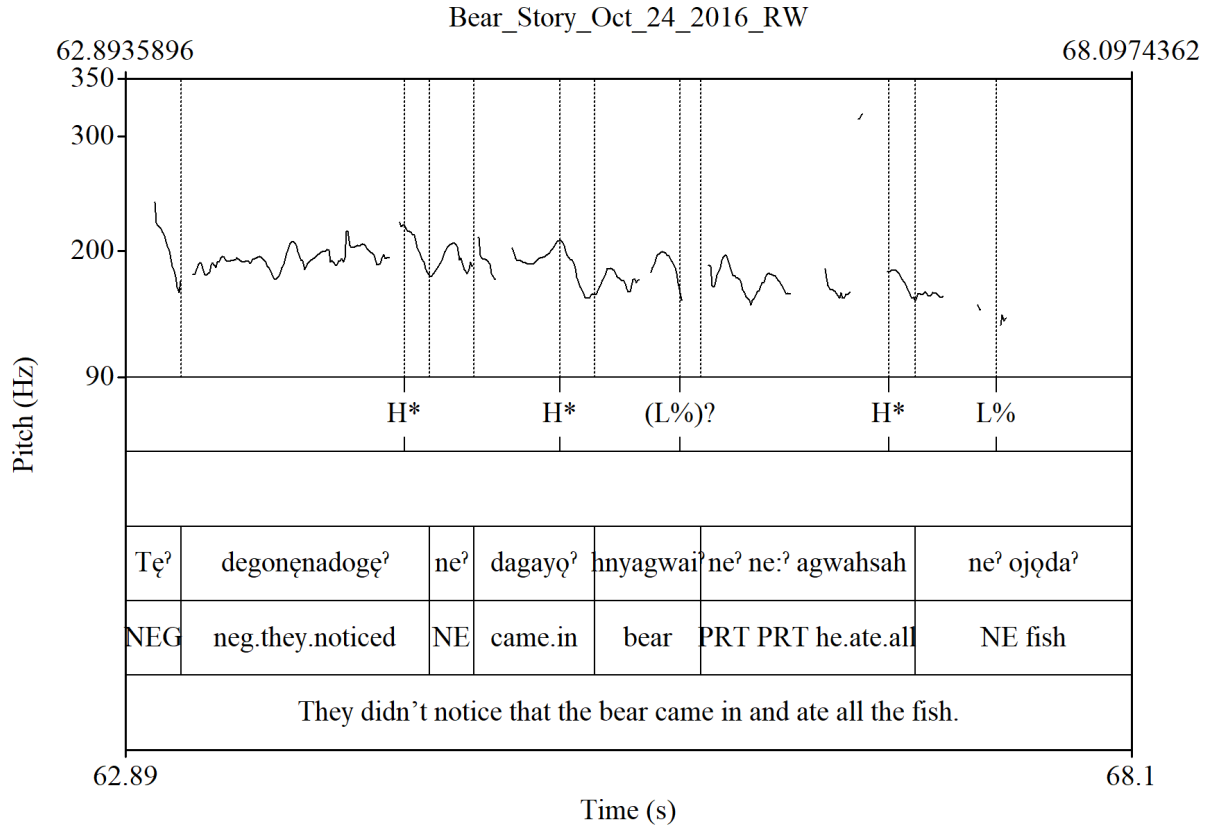
- ex. (9-a) has only one boundary tone - one ι
- ex. (9-b) has a boundary tone on "that" and on "race" - two separate ι s
- ex. (9-b) also has embedded subject-aux inversion
- two separate SaPs \rightarrow two ι s (other work with Sihun Jung)
- Also noticed with embedded subject-aux inversion in casual English.

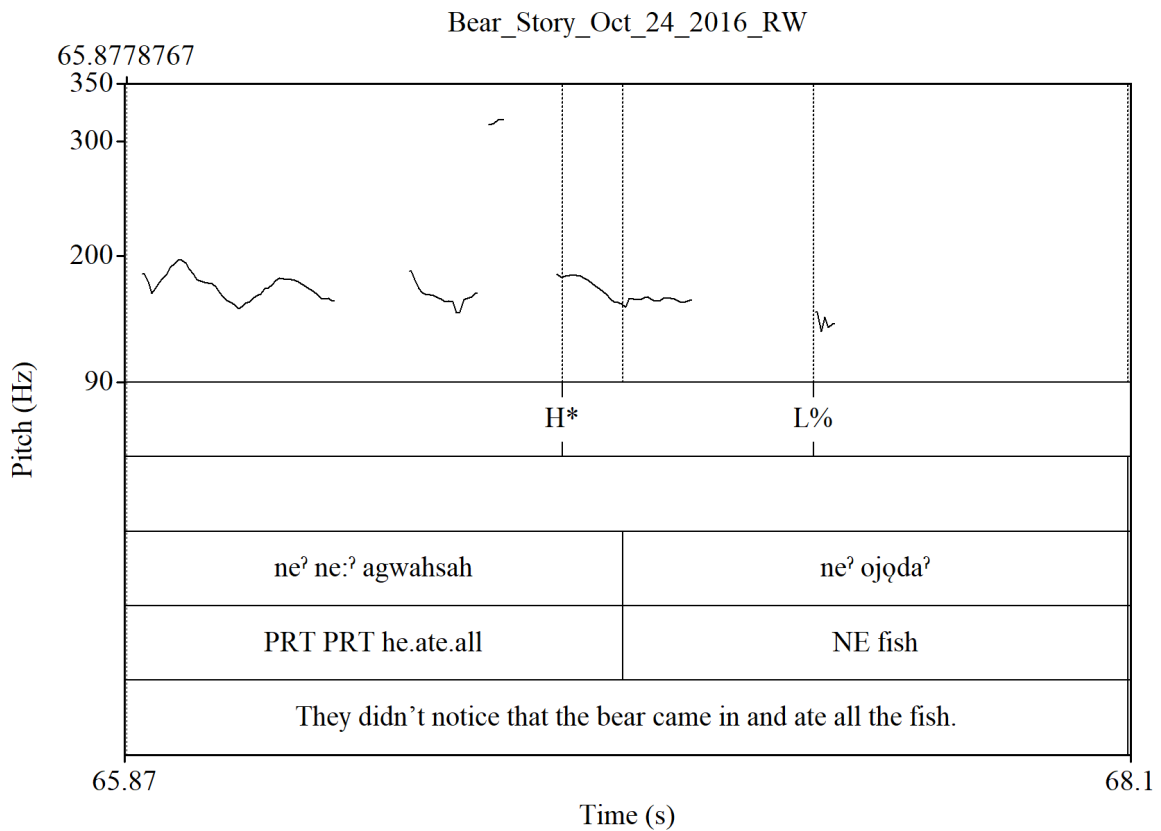
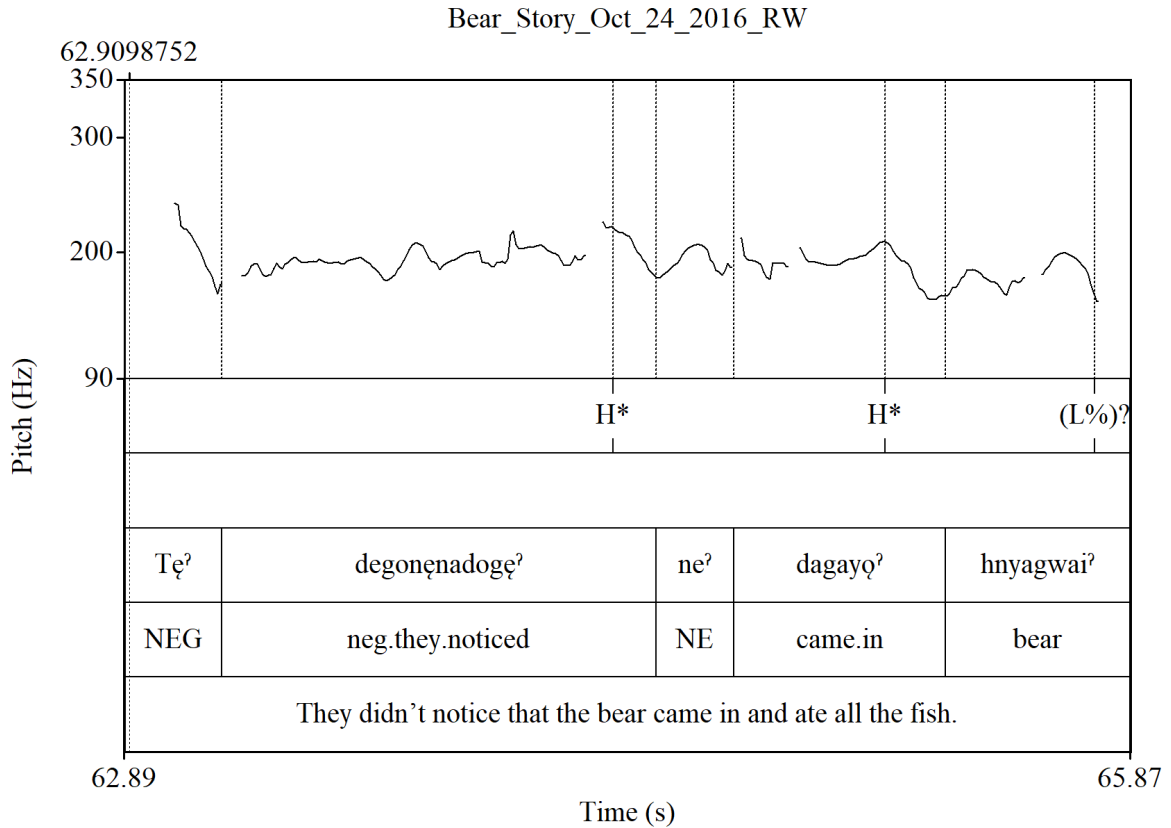
(10) a. I wonder what John ate.
 b. I wonder what did John eat.



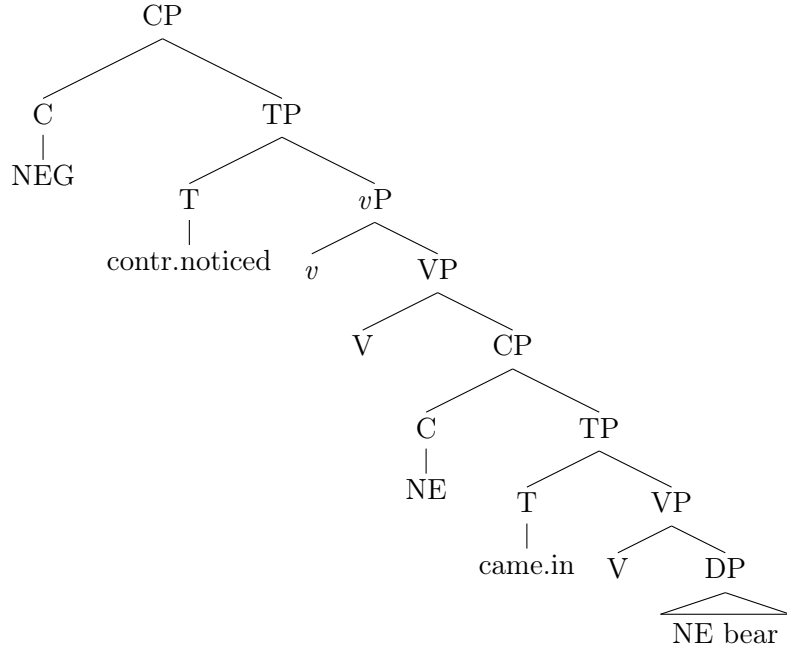
- Sihun and I argued that embedded subj/aux inversion is indicative of an embedded SaP.
- Regardless of the ultimate analysis, we have evidence for some multi-clausal structures having one ι and some having more than one.
- Cayuga multi-clausal structures:

(11) Tɛʔ degonɛnadogɛʔ neʔ dagayɔʔ hnyagwaiʔ neʔ ne:ʔ agwahasah neʔ ojɔdaʔ
 Neg contr.notice ne came.in bear PRT PRT ate.all ne fish
 'They didn't notice that the bear came in and it ate all the fish.'

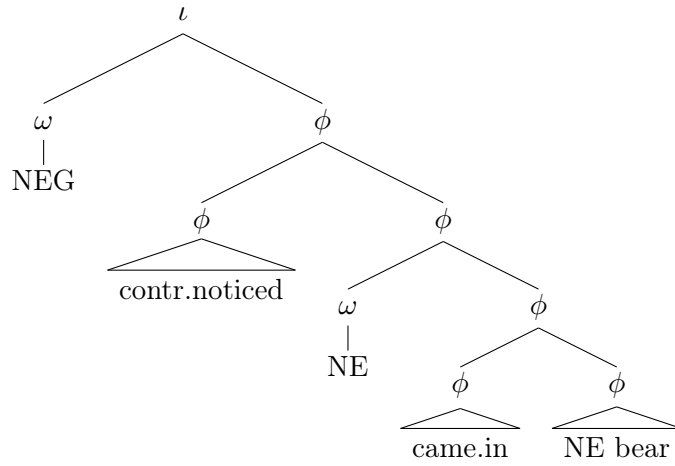




- Consider tree for second pitch track



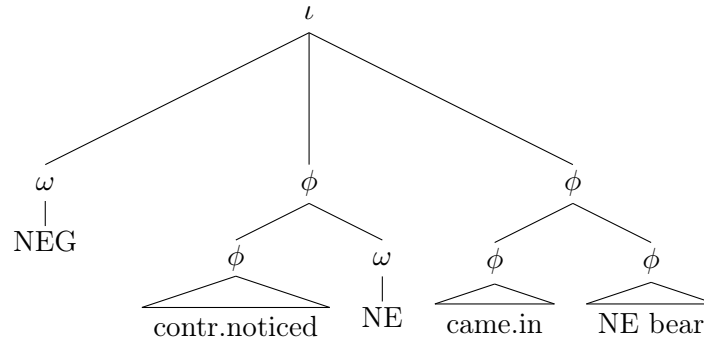
- corresponds to following prosodic structure



- constraint against multiply embedded ϕ 's

(12) $*\phi > \phi > \phi$

- (evidence below for ban on triply embedded ϕ 's)
- tree structured as follows



- Sometimes a sequence of two sentences is linked into a single prosodic domain (utterance phrase or intonational phrase?)
- Consider the following dialogue (*Golden Girls*, season 4, episode 1)

Rose: Another date with your mystery man?

Blanche: Oh, he's no mystery man.

Dorothy: No? Then how come you've been out with him four times, we don't know anything about him?

Blanche: Well, there is one little thing.

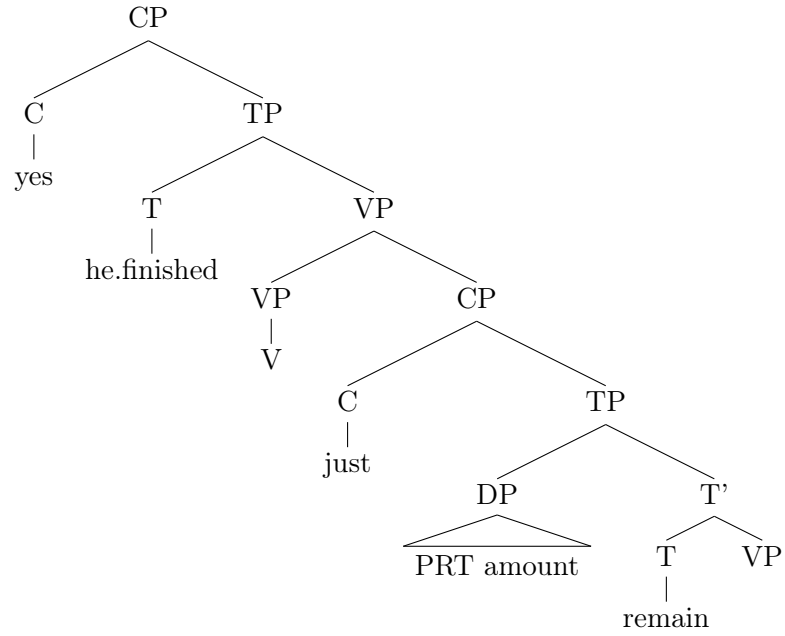
- Of interest is Dorothy's line
- Both sentences seem like independent sentences, but are prosodically linked
- possibly co-subordination in Role in Reference grammar terms (Fu, 1996; van Valin, 1993)
- regardless, the following example shows the same properties

(13) hɛhɛʔ ahahsá:ʔ giʔ shɛ ni:yɔ ɡá:yɛʔ

hɛhɛʔ a-ha-hs-aʔ kiʔ shɛ ni:yɔ ka-yɛʔ
yes FACT-3.SG.M.AG-finish-PUNC just PRT amount 3.NT.AG-be.lying

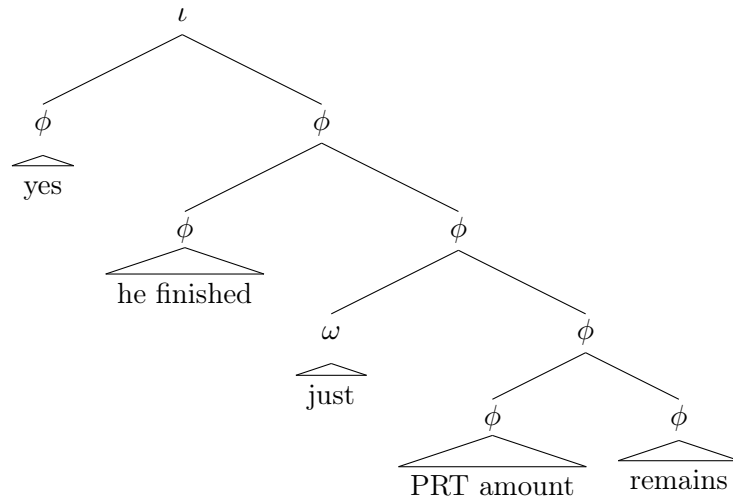
'Yes, he finished it. There was just some left.'

(14)



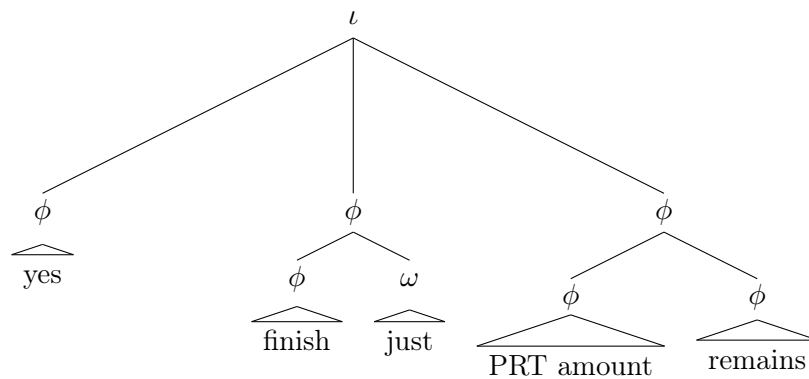
- corresponds to following tree

(15)



- violates (12)
- tree structured as follows

(16)

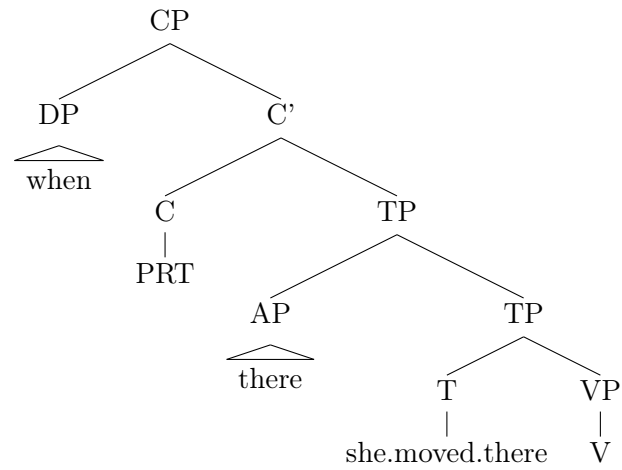


- non-minimal ϕ has a phrasal accent: -L at right edge
- in monoclausal environments, overwritten by boundary tone

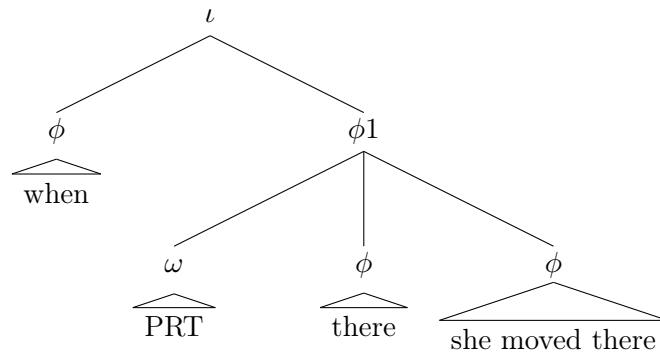
5.3 Prosodic Marking of Interrogatives

- L compression restricted to maximal ϕ
- consider a monoclausal wh-question (2)

(17)

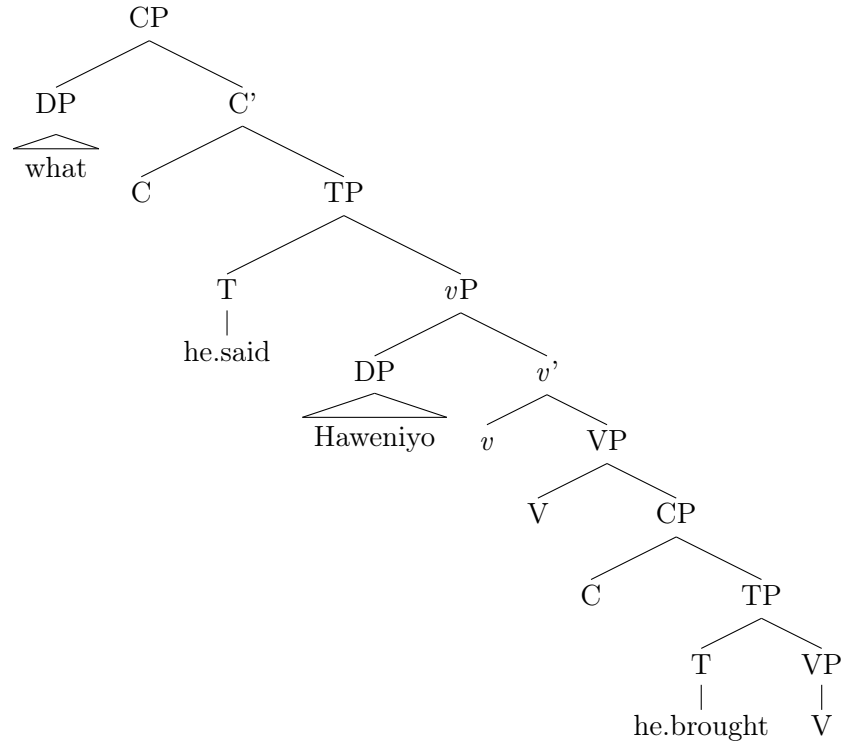


(18)



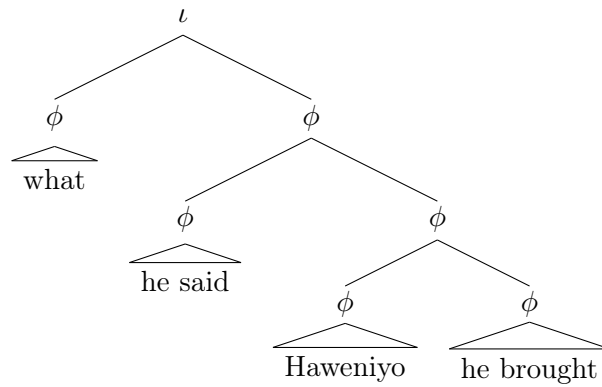
- *wh*-compression extends to end of $\phi 1$
- (numbers on ϕ for identification purposes only)
- consider long-distance questions, (5)

(19)



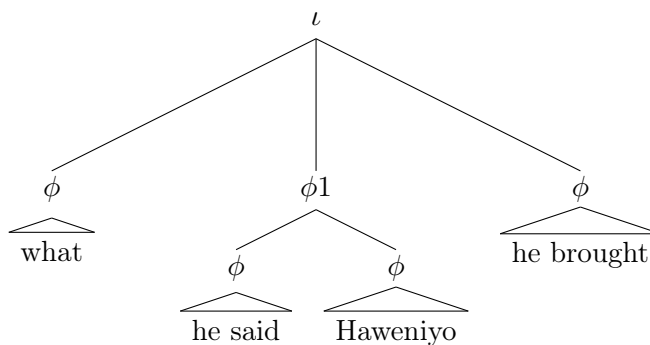
- final embedded subject forms a separate ι
- not considered here
- expected tree after pruning

(20)



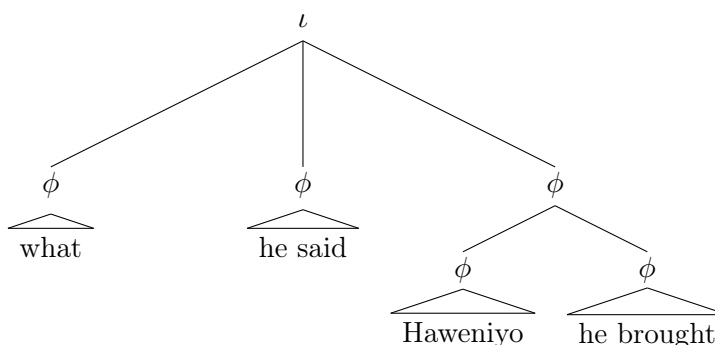
- violates constraint against multiply embedded ϕ 's
- observe that three embedded ϕ 's are ruled out
- restructured as follows

(21)



- *wh*-compression extends to end of $\phi 1$
- another potential restructure of (20)

(22)



- does not align with the facts on compression
- can be ruled out two ways:
 - move as little as possible
 - Align ϕ_{CP} to ι

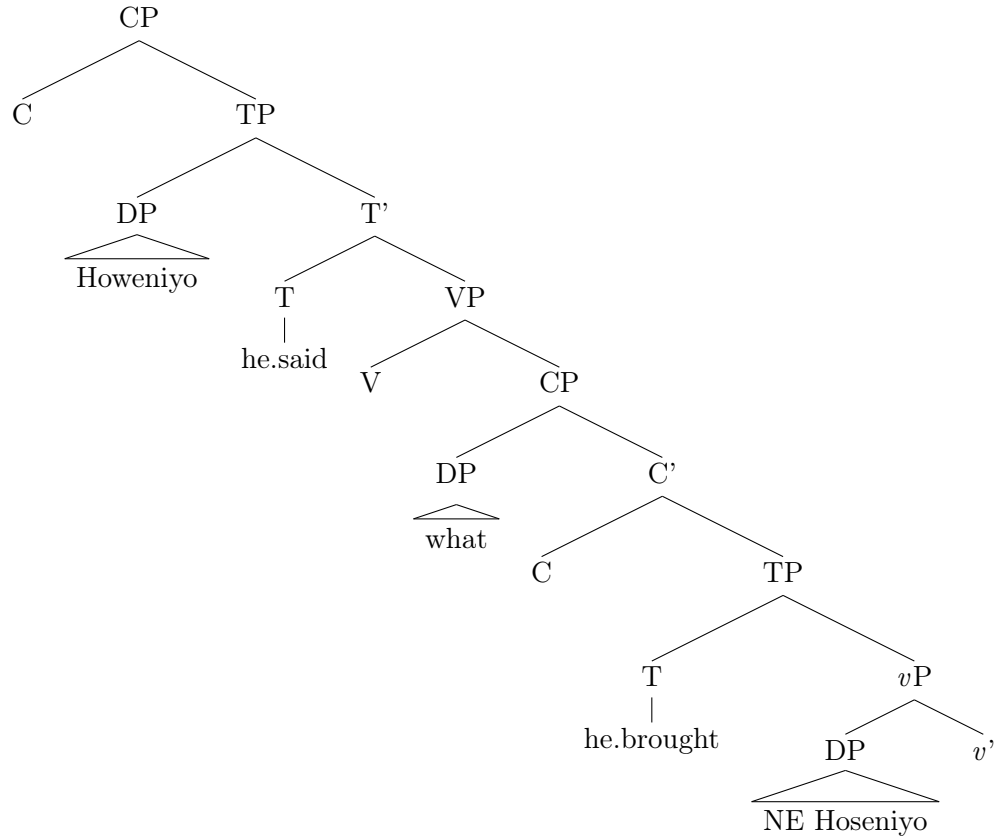
5.4 Embedded Questions

- English embedded *wh*-interrogatives tend to have the same prosody as interrogatives

(23) a. John knows when Bill ate his apple.
b. John knows that Bill ate his apple.

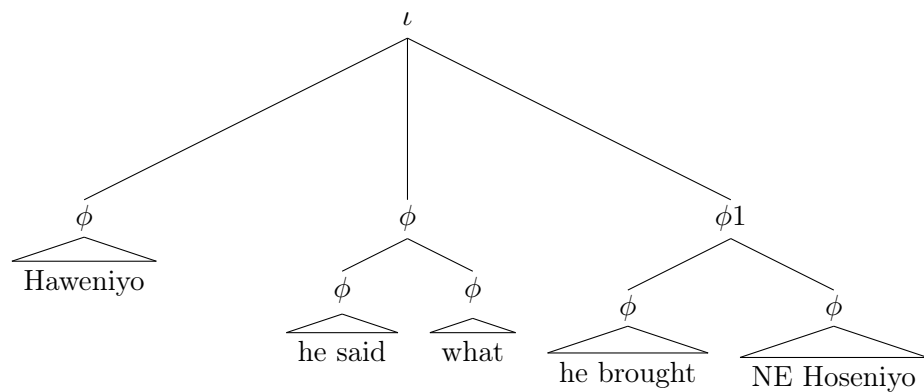
- Special prosody for embedded *wh*-questions noted in other languages: Busan Korean (Hwang, 2011), Japanese (Smith, 2005)
- structure for embedded *wh*, (6)

(24)



- after restructuring, we get the following
- *wh*-compression extends to end of ϕ 1

(25)



6 Conclusions

- examined the prosody of long-distance and embedded questions in Cayuga
- results build on Williams' (2013) study
- Cayuga generally employs an intonation pattern consisting of a high pitch on the *wh*-word followed by a low plateau to the end of the clause
- Analyzed under Match Theory as follows

- verb is its own ϕ
 - multiply embedded ϕ 's are restructured
 - maximal ϕ after *wh*-word exhibits tonal compression
- surprising as embedded questions typically have the same intonation as declaratives
 - highlights the need for comparative studies on the prosody of interrogatives

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