Prosody of Cayuga Content Questions

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1 Nutshell

- 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.

- will sketch out a tentative analysis under Match Theory that captures the generalizations here

2 Background

- Cayuga (Northern Iroquoian) - highly endangered language spoken in Southern Ontario (Six Nations) and to a small extent in New York State (Cattaraugus Reserve)

- vigorous revitalization activities underway

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, *gęh*

- 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:gęʔ dęʔ diʔ hodęʔ ędwadekǫ:niʔ

a：ʔa:gęʔ dęʔ   diʔ hodęʔ ędwadekǫ:niʔ
she.said what PRT what   we.should.eat.it

'She said, "What do you think we should eat?"'
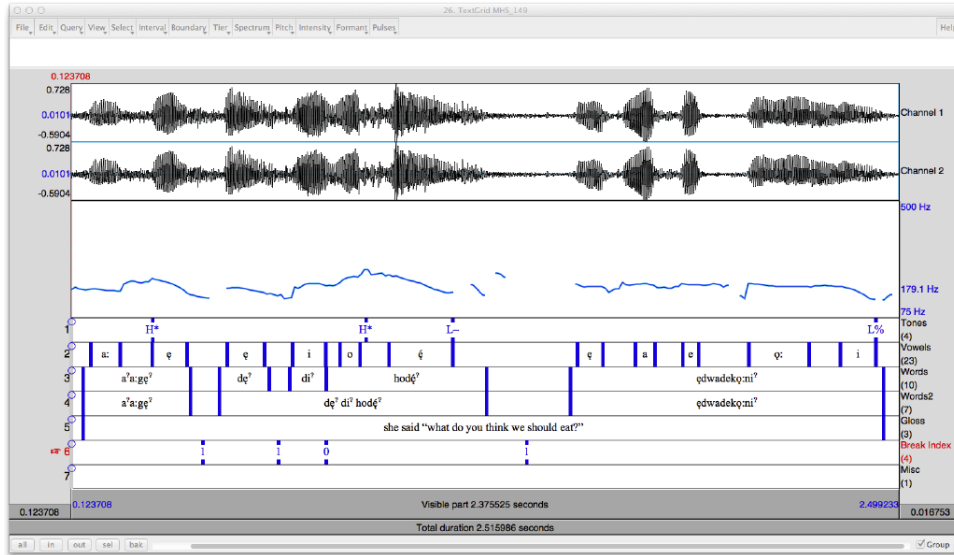
- gives rise to high pitch on the wh-word followed by a low plateau to the end of the sentence.

- confirmed here

(2)   wędǫh diʔ tǫhǫ: heyagonagradǫh
        when   PRT there she.moved.there
        'When did she move there?'

Cayuga_shopping_conversation_I
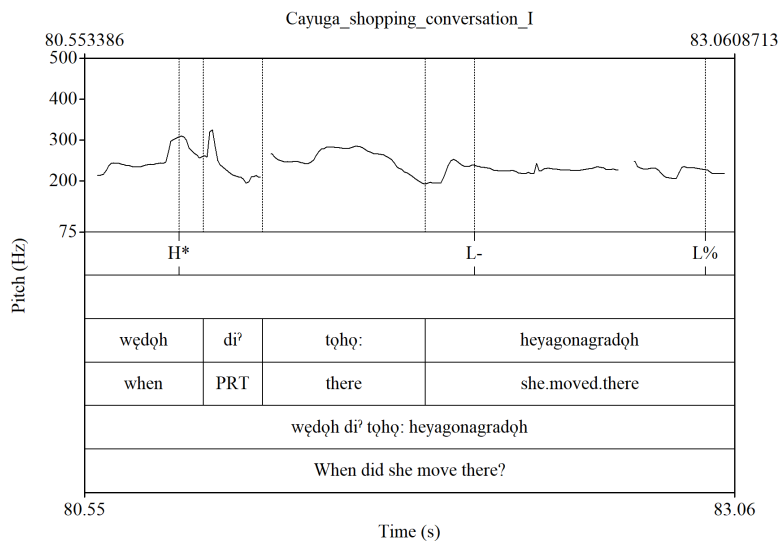
- clear pitch compression on verb

- pitch excursions on particles

- one possibility: particle group forms a prosodic word Michelson (1988)

2

- 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) Dęʔhoʔdęʔ ahęʔ hyaʔnih aʔehni:nǫʔ neʔ sanǫ: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 honǫhdǫnyǫh sǫh 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)

3

- 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) Dẹhodę́ʔ ahẹʔ Howẹni:yó: haha:wíʔ neʔ Hohsẹni:yo:?
   what he.said Howeniyo he.brought NE Hoseniyo
   'What did Howeniyo say that Hoseniyo brought?'

party_story_2

Dẹhodẹ̃ʔ	ahẹʔ	Howẹni:yó:	haha:wíʔ		neʔ	Hohsẹni:yo:
what	he.said	Howeniyo	he.brought		NE	Hoseniyo

Dẹhodę́ʔ ahẹʔ Howẹni:yó: haha:wíʔ neʔ Hohsẹni:yo:?

What did Howeniyo say that Hoseniyo brought?
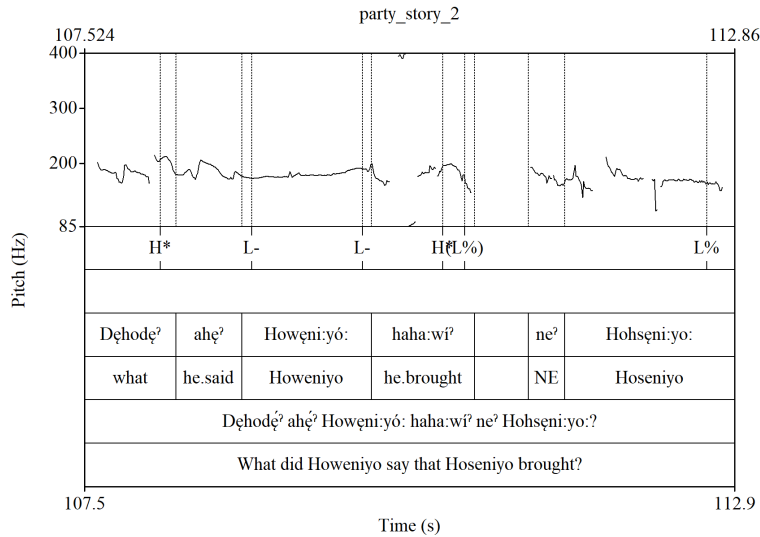
- clear compression or *erradication* (Ladd, 1996; Ishihara, 2007) visible until the start of the embedded verb

- 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) Howẹni:yó: ahẹʔ dẹdiʔhodę́ʔ haha:wíʔ neʔ Hohsẹni:yo:
   Howeniyo he.said what he.brought NE Hoseniyo
   'Howeniyo said what Hoseniyo brought.'

4

party_story_2

Howęni:yo:	ahę́ʔ	dęʔdiʔhodę́ʔ	haha:wíʔ	neʔ	Hohsęni:yo:
Howeniyo	she.said	<PRT>what	he.brought	NE	Hoseniyo
Howęni:yó: ahę́ʔ dęʔdiʔhodę́ʔ haha:wíʔ neʔ Hohsęni:yo:?					
Howeniyo said what Hoseniyo brought.					
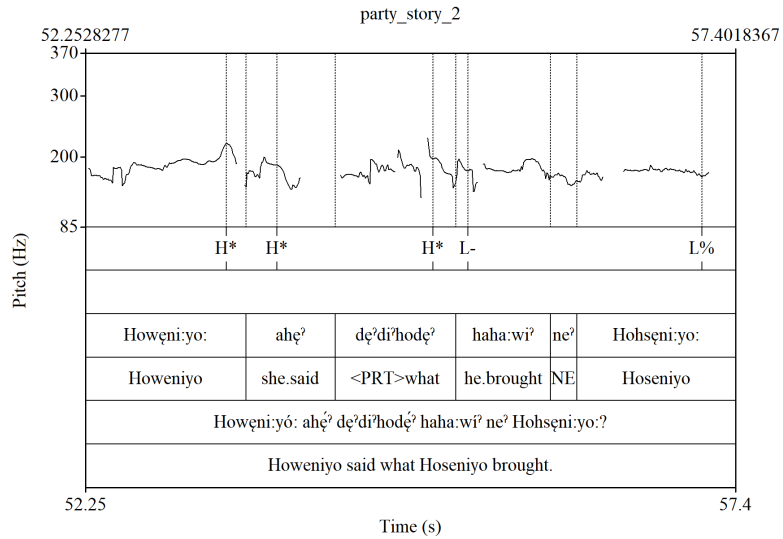
- compression visible again to the right of the *wh*-word

- 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" is a phonological phrase, ϕ

- TENTATIVE: following Match Theory (Selkirk, 2009)

- consider a multi-clausal utterance

(7)   hęhęʔ ahahsá:ʔ giʔ shę ni:yǫ gá:yęʔ

hęhęʔ a-ha-hs-aʔ   kiʔ shę ni:yǫ   ka-yęʔ
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.'

(8)

```
                    CP
             ┌───────┴───────┐
             C               TP
             │        ┌───────┴───────┐
            yes       T               VP
                  he.finished  ┌───────┴───────┐
                               VP              CP
                               │        ┌───────┴───────┐
                               V        C               TP
                                       just      ┌───────┴───────┐
                                                 DP              T'
                                            PRT amount      ┌─────┴─────┐
                                                            T           VP
                                                          remain
```
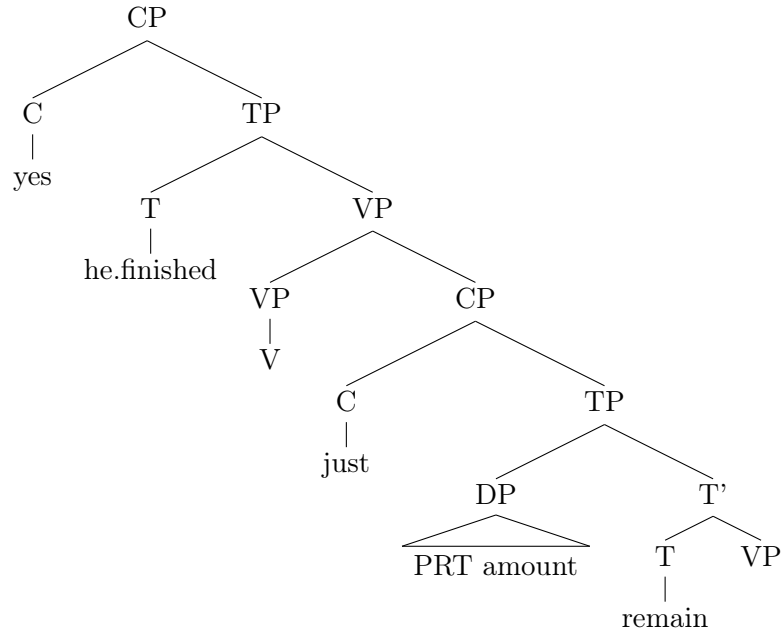
- corresponds to following tree

(9)

```
                              ι
                 ┌────────────┴────────────┐
                 φ                          φ
                yes              ┌───────────┴───────────┐
                                 φ                       φ
                           he finished          ┌────────┴────────┐
                                                 ω                 φ
                                               just          ┌──────┴──────┐
                                                             φ             φ
                                                        PRT amount     remains
```
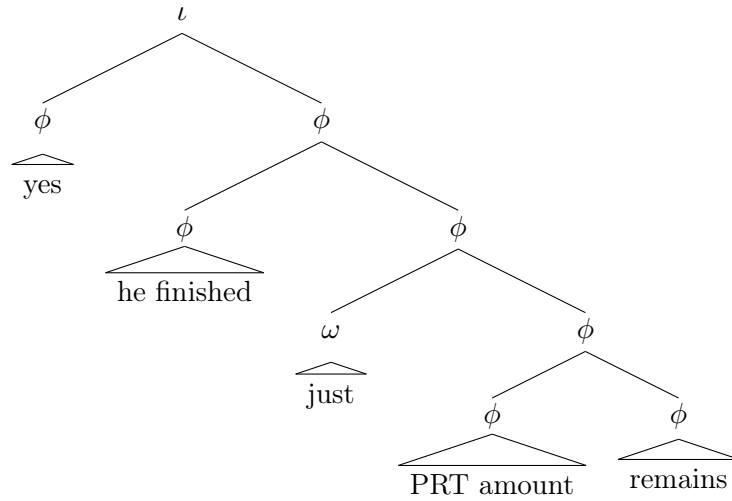
- constraint against multiply embedded ϕ's
- tree structured as follows

(10)

```
                              ι
          ┌───────────────────┼───────────────────┐
          φ                    φ                    φ
        yes            ┌───────┴───────┐     ┌───────┴───────┐
                       φ               ω     φ               φ
                    finish           just  PRT amount     remains
```

6
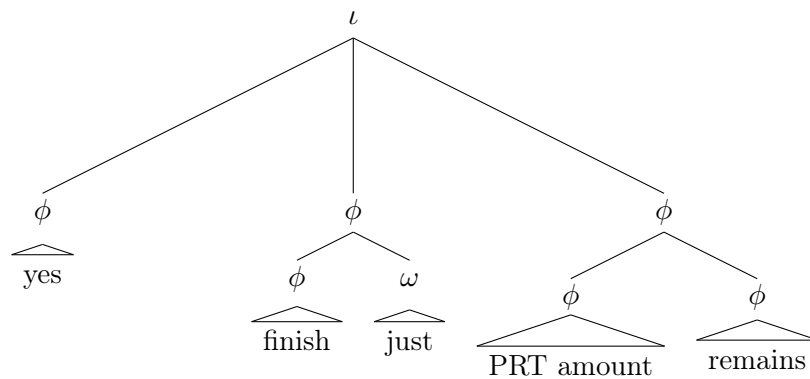
- non-minimal ϕ has a phrasal accent: -L at right edge

- in monoclausal environments, overwritten by boundary tone
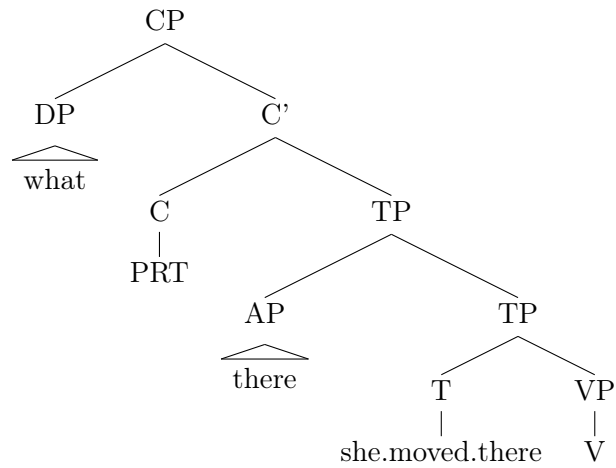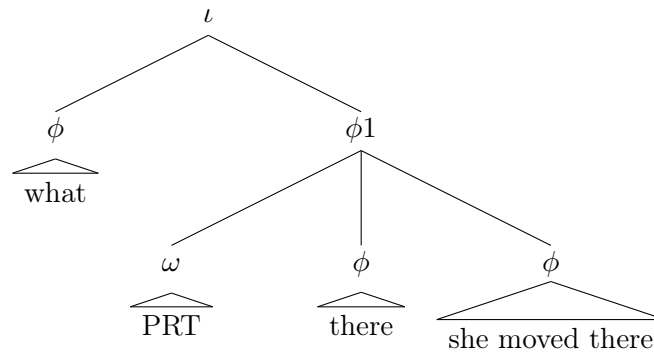
5.1   Prosodic Marking of Interrogatives

- L compression restricted to maximal ϕ

- consider a monoclausal wh-question (2)

(11)

```
                        CP
              ┌─────────┴─────────┐
             DP                   C'
             △            ┌───────┴───────┐
           what           C               TP
                          │         ┌─────┴─────┐
                         PRT       AP           TP
                                   △       ┌────┴────┐
                                 there     T         VP
                                           │         │
                                    she.moved.there  V
```

(12)

```
                        ι
              ┌─────────┴─────────┐
             φ                   φ1
             △           ┌────────┼────────┐
           what          ω        φ        φ
                         △        △        △
                        PRT     there  she moved there
```
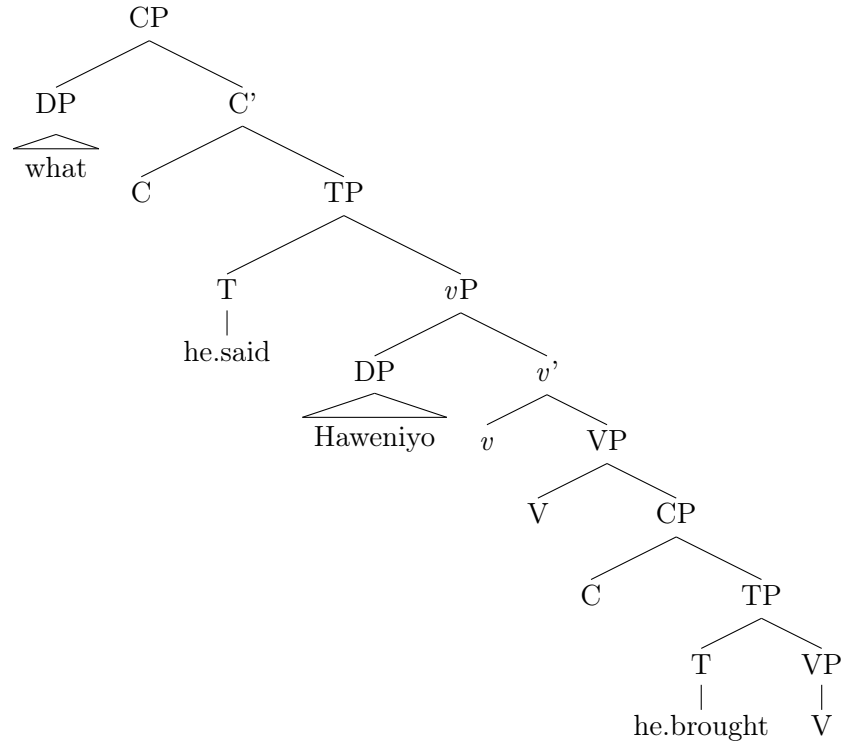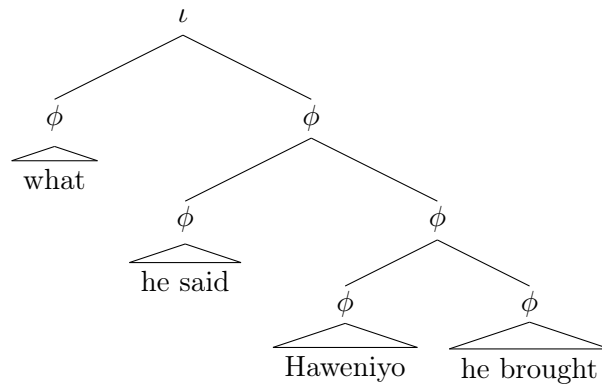
- *wh*-compression extends to end of $\phi1$

- (numbers on ϕ for identification purposes only)
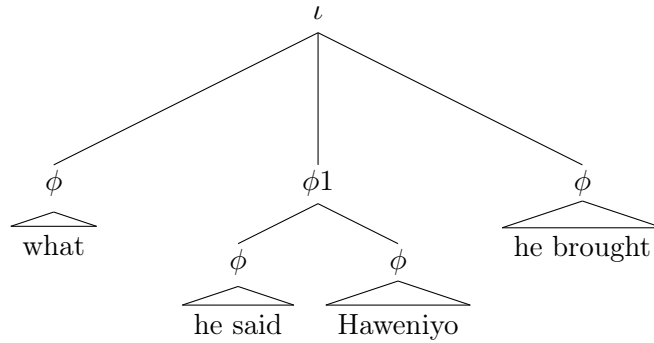
- consider long-distance questions, (5)

(13)

```
                        CP
                ┌────────┴────────┐
               DP                 C'
             ◠◠◠◠          ┌───────┴───────┐
             what          C              TP
                                   ┌───────┴───────┐
                                   T              vP
                                   │        ┌──────┴──────┐
                                 he.said    DP            v'
                                          ◠◠◠◠◠     ┌─────┴─────┐
                                         Haweniyo   v          VP
                                                        ┌───────┴───────┐
                                                        V              CP
                                                                ┌───────┴───────┐
                                                                C              TP
                                                                         ┌──────┴──────┐
                                                                         T            VP
                                                                         │            │
                                                                     he.brought       V
```

- final embedded subject forms a separate ι

- not considered here

- expected tree

(14)

```
                        ι
                ┌───────┴───────┐
               φ               φ
            ◠◠◠◠        ┌───────┴───────┐
            what        φ              φ
                     ◠◠◠◠       ┌───────┴───────┐
                     he said    φ              φ
                             ◠◠◠◠◠        ◠◠◠◠◠
                            Haweniyo      he brought
```

- violates constraint against multiply embedded φ's

- restructured as follows

8

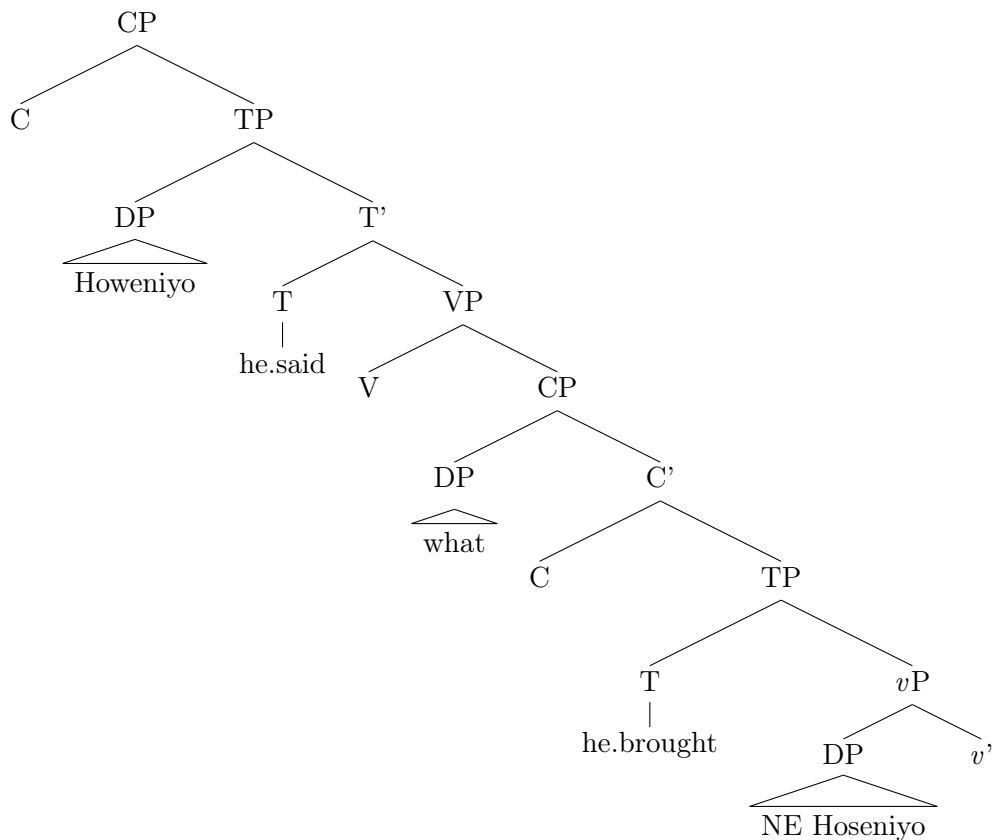(15)

- *wh*-compression extends to end of $\phi 1$

5.2 Embedded Questions

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

(16) 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)
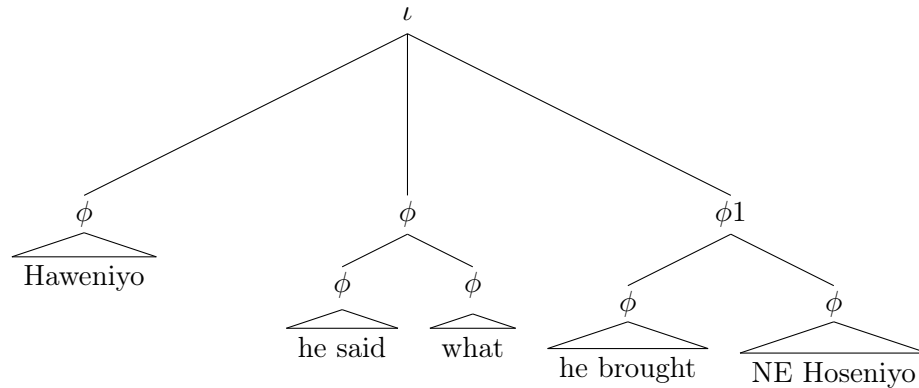
- structure for embedded *wh*, (6)

(17)

- after restructuring, we get the following

- *wh*-compression extends to end of $\phi 1$

(18)

```
                              ι
          _____
         |                    |                    |
         φ                    φ                   φ1
      _____            _____        _____
     Haweniyo          |          |         |          |
                       φ          φ         φ          φ
                    _____     _____    _____     _____
                   he said     what    he brought  NE Hoseniyo
```

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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