The Semantic Function of Rising Wh-Questions

Nancy Hedberg and Morgan Mameni
SIMON FRASER UNIVERSITY

June 1, 2010
Contents

1. Introduction
   1.1 Corpus study
   1.2 Previous Approaches

2. Examples
   2.1 Echo/clarification Questions
   2.2 Supplementary/reminder Questions
   2.3 Constructed examples
   2.4 Interim summary

3. A Semantic Proposal
   3.1 Final rise as a subset relation
   3.2 Final rise and conversational implicature

4. Final rise as a Conventional Implicature

5. Further issues

6. Conclusion
1. Introduction

- *Wh*-questions are normally falling in intonation.
- But why are they sometimes pronounced with a rise?

(1) a. What’s your name? ↓
   b. What’s your name? ↑
1.1 Corpus study

- Data taken from CALLHOME Corpus of American English (Canavan et al. (1997)) and Fischer English (Cieri et al. (2004)) [Telephone speech].
- Intonation analyzed and labeled according to ToBI guidelines (Beckman and Ayers-Elam (1997)).
- 18% of 200 wh-question tokens were rising (H-H%) (reported in Hedberg et al. (2010)).
- We also looked beyond the corpus at constructed and everyday naturally occurring data.
1.2 Previous Approaches

I. Forward-oriented approach
   1. Pierrehumbert and Hirschberg (1990)
      
      ▶ **H-** “indicates that the current phrase is to be taken as forming part of a larger composite interpretive unit with the following phrase.”
      
      ▶ **H%** “indicates that the speaker wishes the hearer to interpret an utterance with particular attention to subsequent utterances.”
      
      → It is not clear why **rising wh-questions** and (yes-no questions) should have this property, while **falling wh-questions** do not: all questions look forward to their answer.
1.2 Previous Approaches

II. Hearer-oriented approach

2. Bartels (1997)

- **H-H%** indicates that *Ego* (the speaker) is conceding choice to *Alter* (the hearer).

- **L-L%** indicates that Ego is controlling choice.

- Falling wh-questions are “impositive” and “indicate the questioner’s intent to assume control over the discourse.”

- Rising wh-questions “are concessive in ostensibly leaving the control of the discourse with the addressee.”
1.2 Previous Approaches

II. Hearer-oriented approach
   - **L-L%** indicates speaker assertion.
   - **H-H%** indicates lack of speaker assertion.
   - Wh-questions “assert an alternative set” (p. 188).
   - Falling wh-questions signal that the alternative-set is restricted to the hearer’s “commitment slate” (p. 188).
   - Rising wh-questions are not assertive, therefore they do not restrict the hearer’s “context set”. (pp. 204-5).
   - **Rising wh-questions invite the hearer to restrict the speaker’s context set.** (p. 205)
1.2 Previous Approaches

II. Hearer-oriented approach

5. Steedman (2007)

- L-L% indicates speaker commitment.
- H-H% indicates hearer commitment.

→ How do these distinctions explain the intuitive contrast between rising and falling \(wh\)-questions?
1.2 Previous Approaches

III. Uncertainty/contingency approaches


- The **final rise** is a modal expression indicating epistemic uncertainty, i.e. \([\alpha^\uparrow] = [\Diamond \alpha]\) (Safarova (2007)).

- How are rising wh-questions more uncertain than falling wh-questions?

- The **final rise** marks an utterance as contingent on some contextual condition (Gunlogson (2008)).

- Gunlogson (2008) is primarily concerned with declaratives interpreted as questions. Can this distinction be extended to *wh*-questions?
1.2 Previous Approaches

- The previous approaches fall coarsely into any combination of the following distinctions.
  1. Backward *vs.* forward looking
  2. Assertion *vs.* non-assertion
  3. Speaker *vs.* hearer commitment
  4. Certainty *vs.* contingency
1.3 Research Questions

- Are the previously noted distinctions sufficient to explain the difference between falling and rising *wh*-questions?
- If not, then might we make an addition to the distinctions already drawn, or can we think of an altogether different approach from which the noted distinctions can follow?
- Does the final rise affect the meaning and/or use of *wh*-questions differently than it affects sentences of other types, or is there a general meaning inherent to the final rise that all sentence types share?
2. Examples

- Our rising *wh*-questions from the corpus fell into two broad categories:
  1. Echo/clarification questions, i.e. requests for repetition of old information.
  2. Supplementary/reminder questions, i.e. requests for background information relevant to the current topic.
2.1 Echo/clarification questions

- As a request for clarification

  (2) A: VSCHOMA...at...EOS...Dot HITC
  B: What’s after the dot?
  L+H* L*H-H%

  (3) A: Which did you say you preferred?
  H* L*H-H%
2.2 Supplementary/reminder questions

(4) [A has been worrying where she will stay when she visits B’s city.]

a. A: I mean I’m just coming anyway but I have no idea like where I’ll stay-

b. B: When are you planning on coming?

L*H-H%

Tell me when you’re planning on coming and I will tell you where you can stay.

Exchange of information: A knows when she is coming; B knows for all (contextually restricted) times when A comes, where A can stay.
2.3 Constructed examples

- Let us try some minimal pairs and see how they differ.

\(5\)

a. A: Where did you visit?
b. B: I visited Tokyo.
c. A: \textbf{Where} did you visit↑?
d. A': \textbf{Where} did you visit↓?

- As an echo question: (5-c) re-invokes the question in (5-a).

- (5-d) does not re-invoke (5-a), but is more likely a new question, e.g. ‘where in Tokyo did you visit?’
2.3 Constructed examples

    b. A: You visited \textit{where}\uparrow? 
    c. \# A: You visited \textit{where}\downarrow?

- \textit{Wh-in situ} echo questions require a final rise.
2.3 Constructed examples

(7) [A and B have never met before. But they chat regularly on the telephone and have planned to finally meet each other. A forgets when they are meeting and asks]

a. A: Tell me, \textbf{when} are we meeting again↑?
   → Tell me again when we are meeting.

b. A: # Tell me, \textbf{when} are we meeting again↓?
   → Tell me again when we are meeting.

- In this context, a rising \textit{wh}-question works, but a falling one does not.
2.3 Constructed examples

(8) [A and B are at a meeting together.]

A: Hm, I was certain that we wouldn’t need to, but it looks like we may have to have another meeting soon ... but I don’t know if you have time.

a. If you are free, when would you be able to come again↓?

b. # If you are free, when would you be able to come again↑?

- In this context, a falling *wh*-question works, but a rising one does not.
Rising and falling \textit{wh}-questions do form minimal pairs in at least some environments.

But how are they different?

Intuitively, rising \textit{wh}-questions seem to invoke information that is somehow \textit{backgrounded} in the discourse, such as information that is discourse-old, but inaccessible to the speaker.

In this sense, the rise on the \textit{wh}-question seems to suggest that some prior (if implicit) question is being re-invoked, whose answer is relevant to the current stage of the discourse.

But there are counter-examples to this generalization.
(9) [Professor P meets John, a former York philosophy student, for the very first time.]

John: I did my BA at York.
Prof: Oh really? Who did you work with?↑

- Given the lack of shared discourse history between the Professor and John, what earlier question is the Professor re-invoking?

1. Backward vs. forward looking
2. Assertion vs. non-assertion
3. Speaker vs. hearer commitment but how?
4. Certainty vs. contingency
A Semantic Proposal

- The final rise is pragmatically very rich. But is there a semantic source for this behaviour?

(10) A: Did you hear? We have a new department secretary.

  a. Yes, I heard. What’s her **name**? ↓
  b. Yes, I heard. What’s her **name**? ↑
  c. No, I didn’t hear. What’s her **name**? ↓
  d. # No, I didn’t hear. What’s her **name**? ↑

- The final rise is infelicitous in environments when the ‘interrogator’ is completely uninformed.
- The final rise indicates that the interrogator has partial information.
3.1 Rising $\omega h$-Qs as a subset of falling $\omega h$-Qs

- Let’s take the denotation of a question to be the set of its answers (Hamblin (1973)).
- Since the interrogator is partially informed, the set of alternatives she has in mind is a subset of all possible (contextually restricted) alternatives.
- We can think of the final rise on a $\omega h$-question as a function that returns a subset of the denotation of the question with a falling intonation.

(11) $\left[ \uparrow \right] = \lambda Q_{\langle <st> t \rangle} \cdot R_{\langle <st> t \rangle} \cdot R \subseteq Q$

e.g. $\left[ \text{what’s her name} \uparrow \right]^{M, g} \subseteq \left[ \text{what’s her name} \downarrow \right]^{M, g}$
(12) A: Did you hear? We have a new department secretary.  
   B: Yeah, I heard. What’s her name↑?  
   A: Gina.  
   B: No, that’s not it. It starts with an S.  

(13) A: Did you hear? We have a new department secretary.  
   B: Yeah, I heard. What’s her name↓?  
   A: Gina.  
   B: # No, that’s not it. It starts with an S.  

(14) a. B: Yeah, I heard. What’s her name again↑?  
   b. B: # Yeah, I heard. What’s her name again↓?  
   ▶ wh-Q↑ indicates that the interrogator has a smaller set of alternatives in mind.
   B: Where did you visit↑?
   A: London.
   B: That’s not what you said!
   ▶ B: I wasn’t sure that I heard you correctly the first time, but I know I didn’t hear London.

(16) A: I’m coming, but I have no idea where I’ll stay.
   B: When are you planning on coming↑?
   ▶ B: If you’re coming during the set of times I have in mind, I could find you a place to stay.
3.2 Final rise and conversational implicature

- If the final rise really does restrict the set of alternatives to a smaller set, then the reading of rising \(wh\)-questions as echo-questions or reminder questions, etc. could be thought of as a conversational implicature.

- The interrogator has used a rise, therefore she has a smaller set of alternatives in mind ... perhaps she knew the answer but has forgotten it, is uncertain about it, etc.
(17) A: I did my BA in philosophy at York.
   B: Who did you *work* with↑?
   ▶ Conversational implicature: B knows the philosophy faculty at York.
4. Final rise as a Conventional Implicature

- The final rise (H%) is best characterized as a Conventional Implicature (Potts (2005)).
- CIs do not affect the at-issue content of a sentence.
- A true answer to a rising and falling *wh*-question is the same, i.e. same at-issue content.
- CIs always take wide-scope.

(18) Honestly, where are you going↑?
    → I don’t remember where you are going: tell me honestly, where you are going.
    ↝ Honestly, I don’t remember where you are going: where are you going?
4. Final rise as a Conventional Implicature

- Speaker-oriented.

(19) [John, Nancy and Morgan have plans to visit the gallery.]
John to Morgan: When are we going↑?
Morgan: I don’t know. I will ask Nancy.

[Sometime later Morgan asks Nancy]
Morgan: John wants to know—when are we going ↓?
Morgan: # John wants to know—when are we going ↑?

- Morgan cannot use a rise to express what John had intended by it on his behalf.
5. Further issues

- Since declaratives, which are ordinarily falling in intonation, are sometime produced with a final rise, can we account for their use by appealing to the subset hypothesis?
5.1 Generalizing to assertions

- From Pierrehumbert and Hirschberg (1990)

(20) [Mark Liberman approaches the receptionist and says]  
My name is Mark Liberman.  
H* H* H-H%

- Under the subset hypothesis, the final rise indicates that  
the set of alternatives being evoked is smaller than the  
set of alternatives would have been had the speaker used  
a falling intonation.

- The rise conveys that set of alternatives to ‘Mark  
Liberman’ is a restricted set.

- A relevant restricted set would be the appointment  
roster.

- Conversational implicature: Mark Liberman is here for  
an appointment.
5.2 Extending to contrastive topics

- The fall-rise tune from Büring (2003).

(21) A: What did the pop stars wear?
B: [The female pop-stars]<sub>IP</sub><sup>CT</sup> [wore caftans]<sub>IP</sub>.

- The fall-rise tune (H*L-H%) indicates that the current sentence answers a subquestion of the QUD.

- How might we develop our semantic analysis of the high boundary tone to account for such examples?
5.3 Theme-only sentences

- From Steedman (2007), Ward and Hirschberg (1985)

(22) A: Did you feed the animals?
B: I fed the **dogs**.

L*+H L-H%

- The QUD is a yes-no question about the entire set of animals.

- The answer is restricted to just a subset of the topic-alternative set.

- How might our analysis be extended to cover these cases?
5. Conclusion

- We have argued that the final rise on $wh$-questions is a function that takes the answer set of the question and returns a subset of it.
- We suggest that the current analysis can explain the use of rising $wh$-questions as echo or reminder questions.
- We also argued that the final rise contributes CI content, in the sense that it expresses a speaker-oriented comment on the at-issue content of the question.
- Lastly, we considered whether this approach can be extended to the use of the final rise to sentences of other types.
Acknowledgments


