

Rising and falling polar interrogatives in English

Marie Nilsenová

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Two types of polar interrogatives in English

- ▶ *polar interrogative* = a *yes/no*-interrogative with subject-finite verb inversion (and auxiliary insertion)
 - ▶ **rising**
 - ▶ **falling**
- ▶ Research question: *Is there a difference in meaning and if yes, what is the difference?*

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Topics that I will address



- ▶ some terminology, data and theories
 - ▶ conducive/confirmation-seeking vs information seeking
 - ▶ informational bias vs desired-state bias
 - ▶ what is a rise and what is a fall
 - ▶ data from the SB corpus of American English
- ▶ results of an experimental study
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 - ▶ Daneš (1960): a question with falling pitch is “not a normal question at all but rather a kind of **invitation** or **request**”
 - ▶ Jones (1966): falling → **statement, invitation**
Can you do that?
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 - ▶ **true questions** (rising, no separate nucleus) - *You love him, don't you?*
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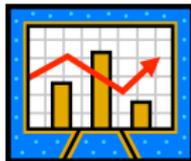
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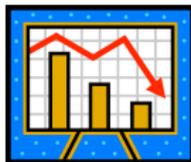
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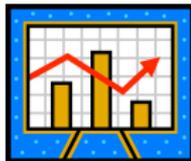


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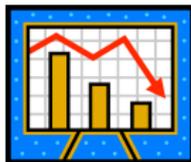


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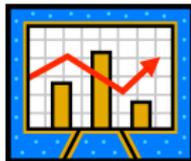


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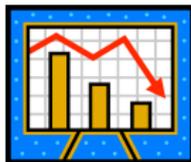


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What is a biased question?



... one where the speaker is predisposed to accept one particular answer as the right one. (Ladusaw 2004)

Example

- ▶ A: *I read that they knew about the terrorist plans to destroy the WTC long before 9/11.*
- ▶ B: *(I don't believe it.) Would the FBI just let it happen?*

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- ▶ *A: Pat is not coming.*
- ▶ *B: Great! Is Jane not coming (either)? That would be the best!!*

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What is a biased question?

- ▶ a biased question is one with polarity opposite to speaker's expectations
 - ▶ A: *I read that they knew about the terrorist plans to destroy the WTC long before 9/11.*
 - ▶ B: *(I don't believe it.) Would the FBI just let it happen?*
- ▶ a biased question is one with the same polarity as speaker's expectations
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Two types of bias (decision-theoretically)

1. bias for q higher than for $\neg q$ if the information value of q higher than the information value of $\neg q$ because q is expected less to be true compared to $\neg q$;
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Typology of polar interrogatives

	Example	Description
BI-POLAR	<i>Is it cold or not?</i>	unbiased; speaker has no prior beliefs concerning p and no desire for p or $\neg p$ to hold
POSITIVE		
WITH INFORMATIONAL BIAS	<i>Is it cold?</i>	speaker would be surprised to find out that it is cold
WITH A DESIRED-STATE BIAS	<i>Is it cold?</i>	speaker would “like it to be cold”
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WITH INFORMATIONAL BIAS	<i>Is it not/Isn't it cold?</i>	speaker would be surprised to find out that it is not cold
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Bias and intonation

What is the connection between bias and intonation?

- ▶ both bias types expressed with a fall?
- ▶ one bias type expressed with a fall (which one)?
- ▶ connection between positive (or negative) and intonation?
- ▶ no connection?



Going through data in a corpus

- ▶ 86 examples of polar interrogatives (positive, negative, tag)
 - ▶ 43 non-falling from the last pitch accent in the nuclear phrase and ending higher than the level of the nuclear pitch accent (rising)
 - ▶ 43 not rising (falling)
- ▶ auditory and instrumental analysis
- ▶ one finite clause, syntactically complete
- ▶ reasonable quality of recording + no overlap
- ▶ 77 positive (4 reversed polarity tag questions, 73 non-tag interrogatives); 9 negative (5 reversed polarity tag questions, 4 non-tag)
- ▶ utterance sampled from 15 different conversations, with 29 different speakers (11 male, 18 female)
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Going through data in a corpus

POSITIVE INTERROGATIVE	77	information bias	34
		desired-state bias	27
		unclear	16
NEGATIVE INTERROGATIVE	9	information bias	9
		desired state bias	0
		unclear	0

Going through data in a corpus

		Type of bias		
Intonation	RISING	43	information bias	24
			desired-state bias	11
			unclear	8
	FALLING	43	information bias	19
			desired-state bias	16
			unclear	8

Going through data in a corpus

		RISE	
POSITIVE INTERROGATIVE	77	present	39
		absent	38
NEGATIVE INTERROGATIVE	9	present	4
		absent	5

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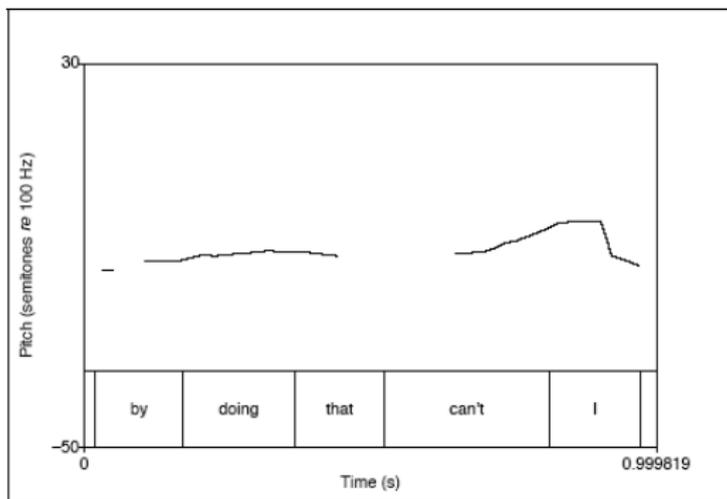
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Some examples

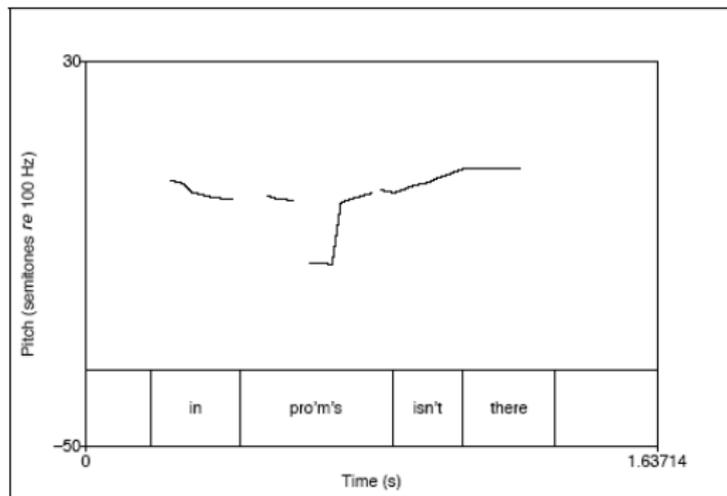
- a. KATHY: *You have to ha- bring,*
- b. NATHAN: *Well I can do – find one side by doing that, can't I?*
- c. KATHY: *Yeah but, why don't you p- just put the other – put –*

- a. KATHY: *I meant once you bring it over there.*
- b. NATHAN: *I know what you meant. I don't ever remember us doing anything like that though. There's like a way you always can get rid of those absolute value bars in problems, isn't there? Can I use some of this?*
- c. KATHY: *Oh. Yeah. Mm. See, yeah. Here it's absolute values. Right here.*

Some examples



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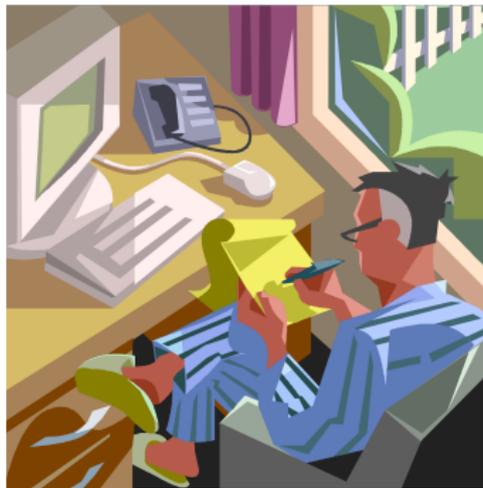
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Is there an association between intonation in the nuclear phrase of a polar interrogative and the perception of speaker's bias?

- ▶ **stimuli:** 10 read interrogative utterances with 8 contour realizations (+ 16 fillers)
 - ▶ combinations of T*T-T% (T={H, L})
- ▶ **speaker:** female, professional MAE-ToBI labeller
- ▶ **participants:** 26 native speakers of AmE (13 male, 13 female)

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An experimental internet study

Is there an association between intonation in the nuclear phrase of a polar interrogative and the perception of speaker's bias?

- ▶ **stimuli:** 10 read interrogative utterances with 8 contour realizations (+ 16 fillers)
 - ▶ combinations of T*T-T% (T={H, L})
- ▶ **speaker:** female, professional MAE-ToBI labeller
- ▶ **participants:** 26 native speakers of AmE (13 male, 13 female)

Experimental study: stimuli

1. Is it raining?
2. Have you seen her?
3. Does it matter?
4. Will Jane come?
5. Is he married?
6. Does she like it?
7. Will we make it?
8. Did you hear it?
9. Is it certain?
10. Is it better?
11. *Are you crazy?
12. *Can I help you?

Experimental study: instructions

- ▶ Participants asked to listen to each stimulus and evaluate it from the perspective of the perceived speaker's expectations about the answer:
 1. the speaker definitely expects NO
 2. the speaker probably expects NO
 3. the speaker has no expectations
 4. the speaker probably expects YES
 5. the speaker definitely expects YES
- ▶ 1, 2, 4 and 5 - biased question; 3 - unbiased question
- ▶ 1 and 2 information state bias (?)
- ▶ 4 and 5 desired-state bias (?)

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Experimental study: results

- ▶ overall agreement between judges mostly poor, in some cases fair; speakers avoided extremes, most often went for the neutral answer
- ▶ proportionally frequent matches:
 - ▶ L*L-L% and 'speaker definitely expects NO
 - ▶ L*H-H% and H*H-H% and speaker definitely expects YES
 - ▶ high boundary tone associated with expectations of a positive answer
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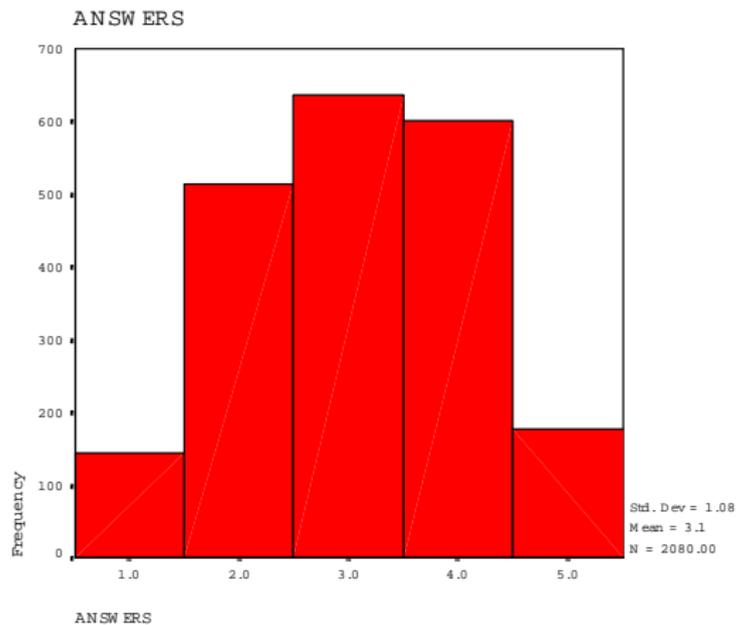
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Distribution of answers



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Response	N	H% Present	H% Absent	Proportion (present)
<i>NO!</i>	146	50	96	.34
<i>NO.</i>	514	222	292	.43
<i>mhm...</i>	638	307	331	.48
<i>YES</i>	603	336	267	.56
<i>YES!</i>	179	125	54	.70
Total	2080	1040	1040	.50

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- ▶ most frequent: H*L-L% and no bias (speaker does not expect any particular answer) – one fourth of stimuli classified as no bias

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- ▶ some production issues (pitch accent on penultimate difficult for L*H-L%; starting at mid range of speaker's pitch register → L% possibly confused with !H)
- ▶ against the predictions of the taxonomy, positive polar interrogatives can be interpreted as carrying no bias
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General observations

- ▶ the research of question intonation suffers from lack of available procedures and definitions for question identification in spontaneous speech
- ▶ in spontaneous speech, most questions are not syntactically marked
- ▶ annotators tend to disagree with each other to a large degree
- ▶ a number of properties involved, to a degree:
 - ▶ speaker's intention vs addressee's perception
 - ▶ who is the expert? (common ground knowledge, type of predicate)
 - ▶ whose turn next?
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- ▶ prescriptive
- ▶ a general model: annotation task with a number of properties, followed by a factor analysis & Cronbach's alpha, analysis of rater agreement, etc.
- ▶ only the best: Map Task (like) corpus with records of speaker's intentions and addressee's perceptions

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