

# Intonation and Sentence Type: The Emergence of Conventions for Attitudinal Meanings

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## Introduction

Intonational meanings and context dependency: different perspectives

- Intonational contours always have context-dependent effects on meanings [1]
- At least some types of intonational contours have context independent effects on meanings [3] e.g. L\*+H in English: scalar values, speaker uncertainty → conventional implicature

What other types of intonational contours have such conventionalized effects? What kinds of meaning contributions do they make? How do they operate?

## Main Argument

There are qualitatively different types of context independent intonational convention signaled by

**terminal contour** (e.g. L\* H-H%)  
+  
**sentence type** (e.g. Declarative).

They signal **stable attitudinal meanings** (e.g. speaker authority, politeness, stance, etc.) **across diverse contents and contexts.**

## Methods

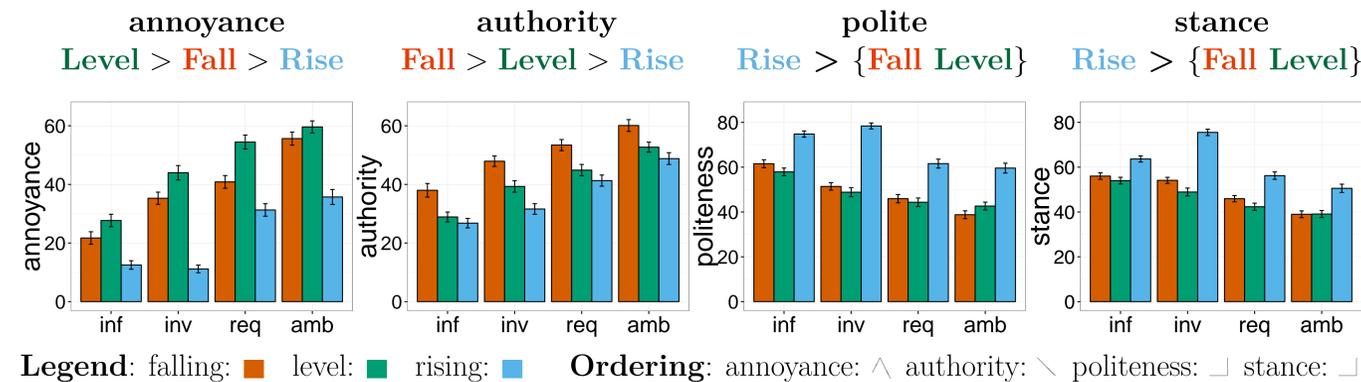
A series of perception experiments with stimuli:

- Representing diverse sentence types (16 polar-Qs & wh-Qs, 7 declaratives, 8 imperatives), contents (4 types of biases), and contexts
- Produced by diverse speakers (6 in total), and acoustically manipulated in terminal contours

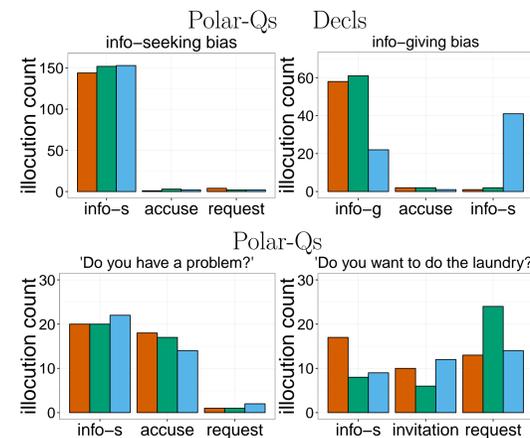
Bias	Sentence
info	Where do armadillos live?
seeking	How do manatees swim?
invitation	Do you want to go to the movies? Do you want to grab a bite?
request	Can you close the window? Can you carry this box?
ambiguous	Do you have a problem? Do you want to the laundry?

## Experimental Results: Attitudinal Meanings (Polar-Qs)

Consistent effects of intonation on participants' interpretations of attitudinal meanings, across sentences with different interpretational biases and across different illocutionary inferences



## Speech Acts



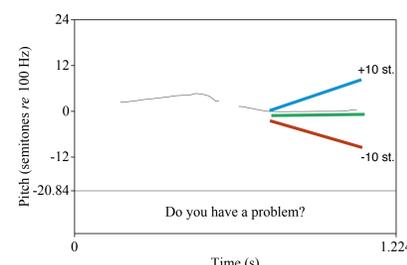
No consistent intonational effects on speech acts:

- Pre-coded biases as the main predictor
- Significant intonational effects only for sentences with ambiguous biases

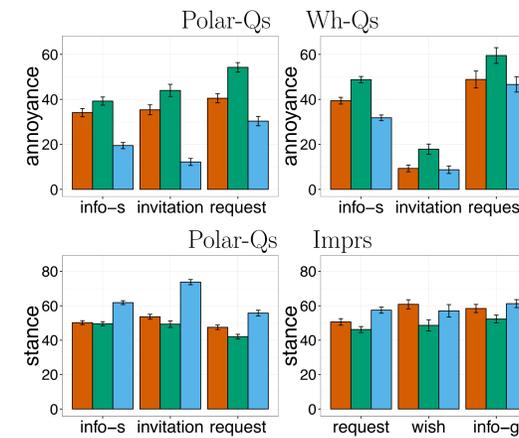
## Stimuli

Each of the 31 sentences manipulated to yield:

- 3 types of terminal contours (rising: L\* H-H%, level: !H\* H-L%, falling: !H\* L-L%)



## Other sentence types



## Questions & Procedure

240 participants (Amazon MTurk) listened to all 31 sentences (randomly presented in 1 of the 3 intonations), and answered the following questions:

- Verification  
Q1: What did the speaker say?
- Speech acts (forced choice)  
Q2: What is the **most likely interpretation of the utterance?**: (a) info-seeking, (b) request, (c) invitation, (d) info-giving, (e) accusation, etc.
- Attitudinal meanings (ratings from 0–100)  
Q3: How **annoyed** does the speaker sound?  
Q4: How **authoritative** does the speaker sound?  
Q5: How **polite** does the speaker sound?  
Q6: What kind of **attitude** does the speaker have **about the listener?** (from negative (0) to positive (100))

## Statistical Analysis

A series of linear mixed effects models was fitted to the data, with:

- Each of the **attitudinal ratings** as the main dependent variables
- Intonation**, participants' **illocutionary inferences**, and **sentence-type** as independent variables (+ all possible interactions)
- Speaker** and **participant** as random effects

	Coef.	S.E.	p <
intercept	41.57	3.47	.001
level	12.31	2.64	.001
rise	-11.87	2.67	.001
info-s	-8.50	2.42	.001
invitation	-7.09	2.77	.05
Wh	7.60	3.63	.05
rise * inv	-11.16	4.01	.01
level * Decl	-18.97	4.97	.001
invitation * Wh	-24.32	4.92	.001

**Model fragment:** Annoyance rating

## Discussion & Conclusion

Significant effects of intonation + sentence-type on attitudinal meanings; for instance:

- Falling** + Impr: positive stance, authority
- Rising** + Polar-Q: politeness, positive stance

Potential sources for the conventions? cf. [2]

**Full data:** <https://github.com/sunwooj/labph>

**Related paper (with Chris Potts):**

<https://github.com/sunwooj/perlocution>

## Acknowledgement

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## References

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