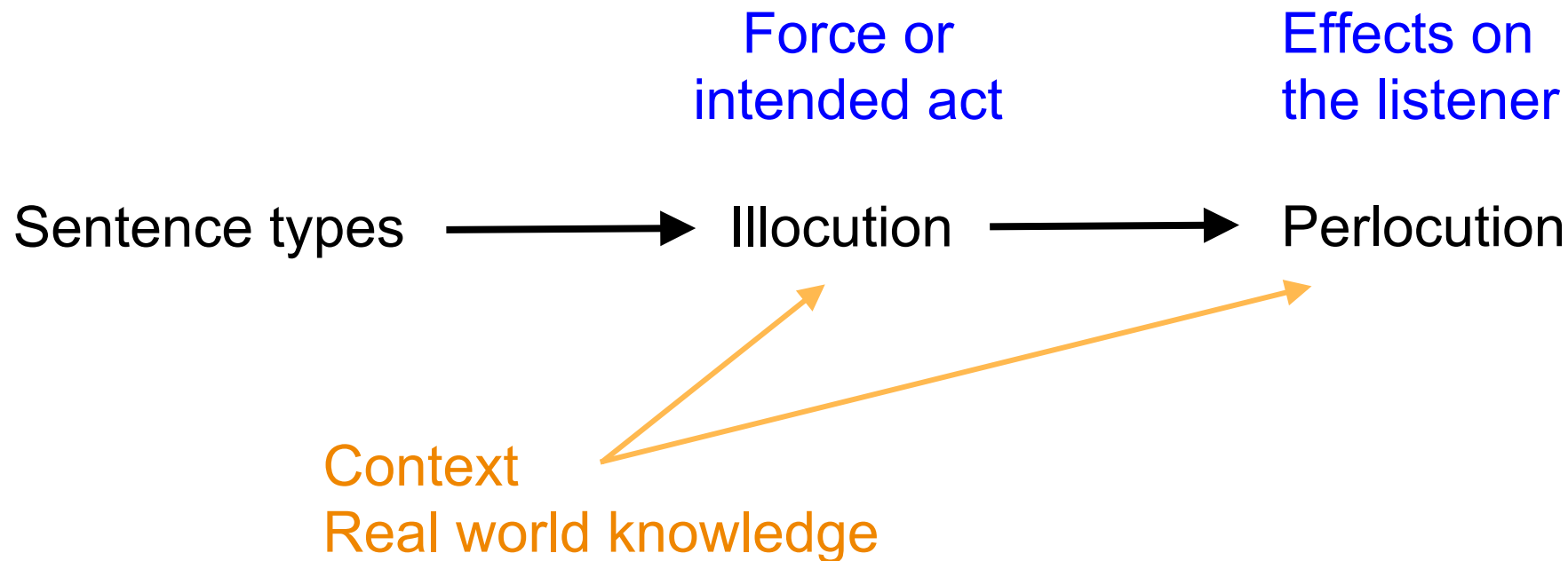


Intonational sentence-type conventions for perlocutionary effects: an experimental investigation

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

Sunwoo Jeong & Christopher Potts
Department of Linguistics, Stanford University

A classic view: traditional speech act theory



A classic view: traditional speech act theory

Declarative

Force or
intended act

Effects on
the listener

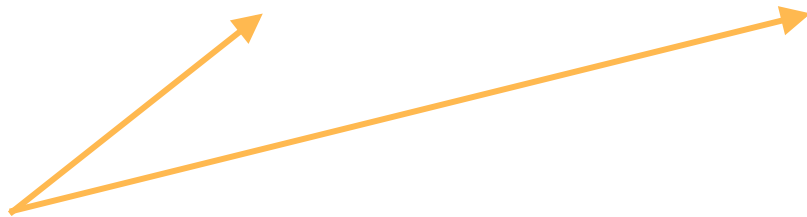
“It would be a shame if
something happened
to your store.”



Threat



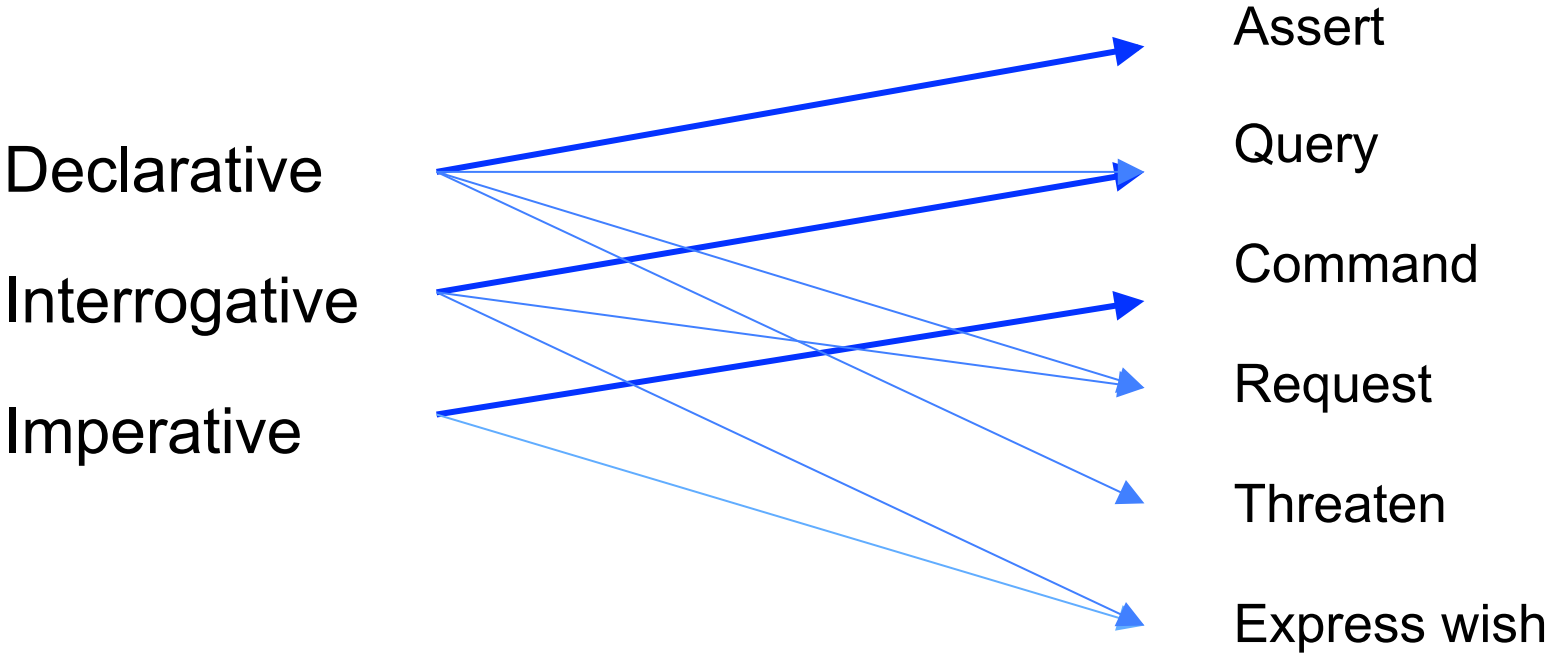
Fear



Speaker suspected to be a mobster

Listener indebted to speaker

Conventions for illocution



Conventions for illocution: clause type

Sentence type conventions
constraining illocutions

Context

Declarative

Thereby commits to acting as though she believes p

Interrogative

Thereby commits to a preference for having the addressee commit to ... an answer to Q

Imperative

Thereby commits to acting in accord with having a preference for p

Assert

Query

Threaten

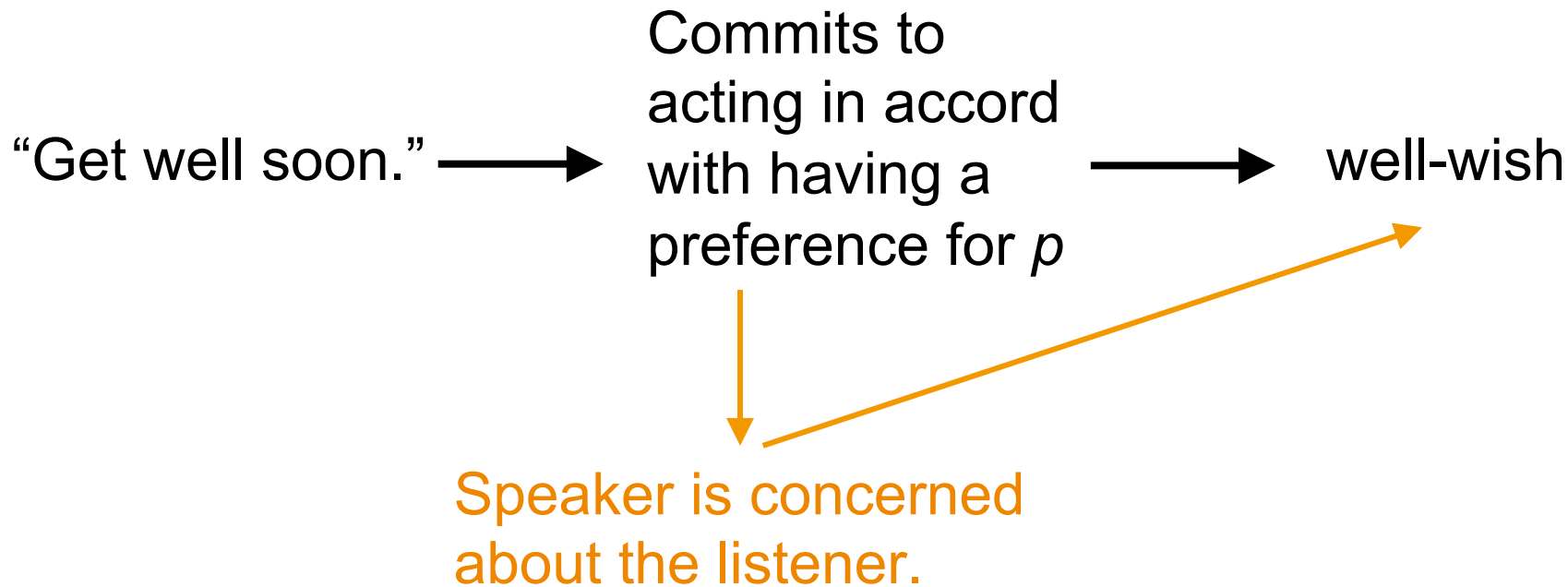
Command

Request

Express wish

Condoravdi and Lauer (2011, 2012), Lauer (2013);
See also: Portner (2007), Malamud and Stephenson (2015)

Conventions for illocution: example



Conventions for illocution: type + tune

Type + Tune conventions
constraining illocutions

Context

Assert

Query

Request

Invite

Accuse

Falling declarative

Thereby signals speaker's
categorical commitment to p

Rising declarative

Thereby signals speaker's
conditional or projected
commitment to p

"That's a persimmon?"

The nature of these normative conventions

- ❖ These conventions attach to type + tune pairs.
- ❖ They are normative: use *thereby* signals something.
- ❖ They do not *determine* illocution, but rather constrain it.

- ❖ Our question:

Do similar conventions arise for perlocutionary effects?

Conventions for perlocutions?

Perlocutionary effects are “certain consequential effects upon the feelings, thoughts, or actions of the audience, or of the speaker.” (Austin 1962: 101).

“Perlocutionary acts are not conventional, though conventional acts may be made use of in order to bring off the perlocutionary act.” (Austin 1962: 121).

“Perlocutionary effects are ... beyond the control of the speaker and beyond the conventional norms of communicative interactions.” (Van Dijk 1977).

Conventions for perlocutions?

Polar interrogative: **info-seeking** bias

“Are armadillos mammals?”

Falling



Authoritative
Impolite

Rising



Polite
Not authoritative

Polar interrogative: **invitation** bias

“Do you want to grab a bite?”



Authoritative
Impolite



Polite
Not authoritative

Polar interrogative: **request** bias

“Can you lend me some money?”



Authoritative
Impolite



Polite
Not authoritative

Conventions for perlocutions?

Declarative: invitation bias

"We can go dancing."

Falling



Authoritative
(less) impolite

Rising



Polite
(Not at all)
authoritative

Imperative: advice/suggestion bias

"Take these pills for a week."



Authoritative
(Less) impolite



(Less) polite
Not authoritative

Hypothesis: Conventions for perlocutions

- ❖ An independent set of conventions for perlocutionary effects
 - Sentence type + terminal contour intonation (type + tune)
 - Consistent across: diverse contents, contexts, and illocutions
- ❖ Methodology: perception experiments
- ❖ Naturally assimilated to existing work on sentence type conventions

Perception experiment: Materials

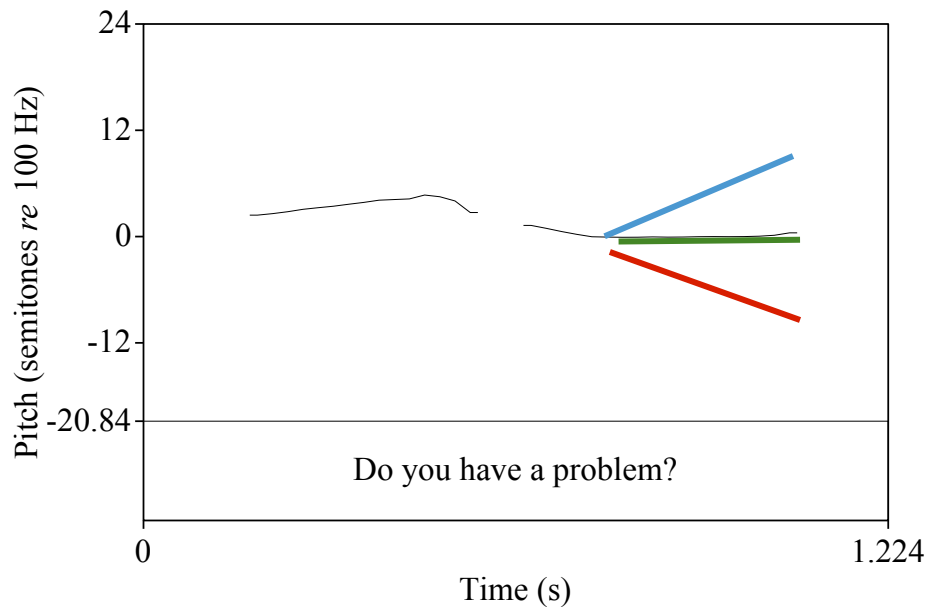
Sentences systematically varying in sentence-types and illocutionary biases

Are armadillos mammals? Where do armadillos live? Manatees have molars. Avoid the highway.	(Polar-Q) (Wh-Q) (Dec) (Imp)	Information seeking Information giving Disinterested advice
Do you want to go for a run? What do you say we go grab a bite? We should go get beer. Take a cookie.	(Polar-Q) (Wh-Q) (Dec) (Imp)	Invitation Offer
Can you close the window? Who has a pen? You gotta close the window. Hand in the assignment by Friday.	(Polar-Q) (Wh-Q) (Dec) (Imp)	Request Command

Perception experiment: Materials



- ❖ Speakers: 2 males, 2 females for each experiment
- ❖ Each sentence acoustically manipulated to yield stimuli with 3 types of terminal contours:
 - **Falling** (!H* L-L%)
 - **Level** (!H* H-L%)
 - **Rising** (L* H-H%)



Perception experiment: procedure

- ❖ All 31 sentences presented in randomly chosen intonation
 - Experiment 1: 16 polar-interrogatives, 15 fillers
 - Experiment 2: 16 wh-interrogatives, 7 declaratives, 8 imperatives

- ❖ 240 Native speakers of American English (Amazon Mechanical Turk)

Perception experiment: questions

- ❖ Q1: Typing in what they heard (verification step)
- ❖ Q2: Choosing the most likely interpretation (**Illocution** oriented)
 - Information-seeking
 - Invitation
 - Request or command
 - Accusation
 - (Information-giving) / (Expressing wish) / (Suggestion)

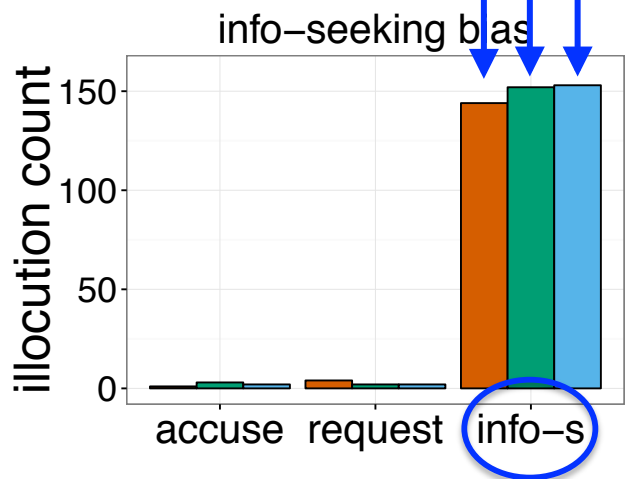
Perception experiment: questions

- ❖ Q3 – Q5: Giving graded responses; 0 – 100 (**perlocution** oriented)
 - How **annoyed** does the speaker sound?
 - How **authoritative** does the speaker sound?
 - How **polite** does the speaker sound?
 - What kind of attitude does the speaker have towards the listener?
(**degree of positivity**)
- ❖ Q6 – Q7: Free responses; qualitative answers

Results: participants' illocutionary inferences

Polar-interrogatives with illocutionary biases: **falling**, **level**, **rising**

“Do manatees have molars?”
“Did Maria bring those bananas?”



“Can you open the door?”
“Can you close the window?”



falling intonation: ■ level intonation: ■ rising intonation: ■

Results: participants' illocutionary inferences

Declaratives with illocutionary biases: falling, level, rising

“Hippos are predators.”
“Manatees have molars.”



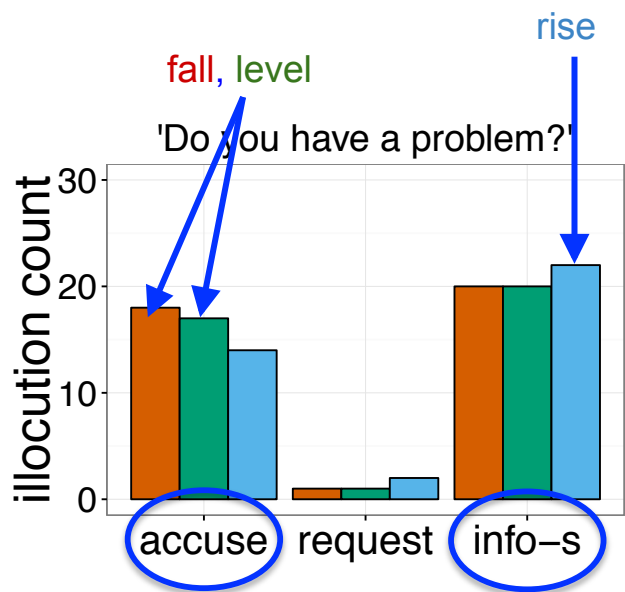
“You need to help me carry this box.”
“You gotta close the window.”



falling intonation: ■ level intonation: ■ rising intonation: ■

Results: participants' illocutionary inferences

Polar-interrogatives with ambiguous biases: **falling**, **level**, **rising**



falling intonation: ■ level intonation: ■ rising intonation: ■

Illocutionary inferences: summary

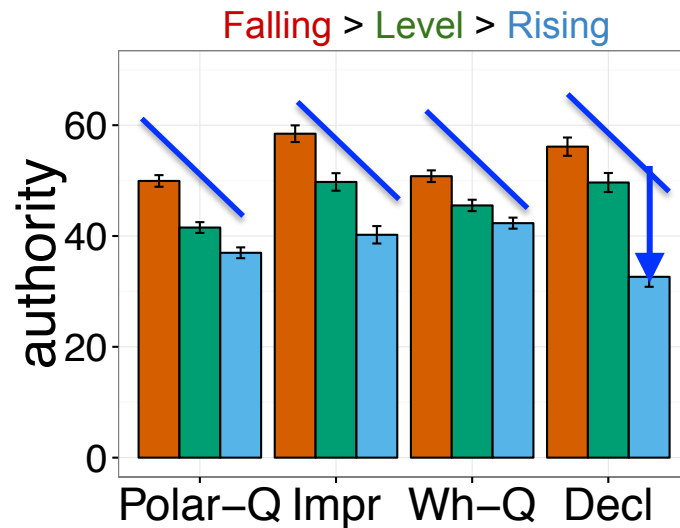
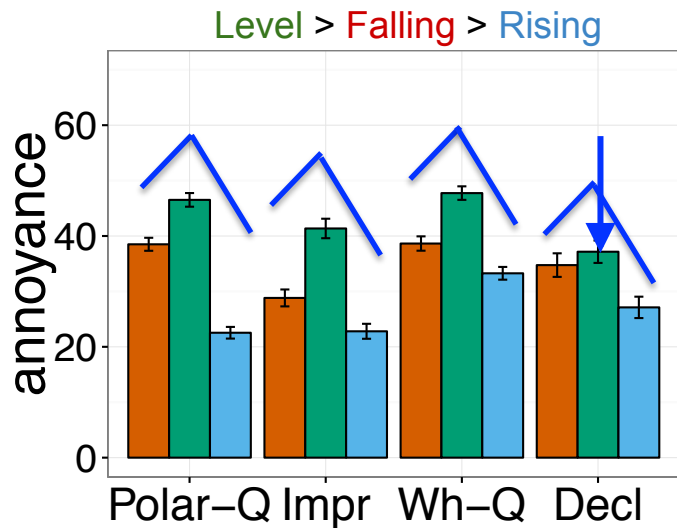
- ❖ Intonational effects on illocution: constrained by content and context
 - Intonational effects emerged primarily for ambiguous cases
 - These effects were dominated by the sentences' content-related biases
- ❖ Subject made a wide range of choices on illocutions
 - Setting a necessary background to test our hypothesis about perlocution

Perlocutionary conventions: hypotheses

- ❖ **Central hypothesis:** Perlocutionary effect conventions that are not predictable from content, context, and illocution alone, but rather inhere in specific type + tune conventions.
- ❖ **Secondary hypothesis:** Perlocutionary effect conventions will rely primarily on 'tune', but also on 'type' as well. → To what extent are they dependent on sentence-types?

Results for perlocutionary effects: across 'types'

- ❖ Consistent tune ordering across sentence-types
- ❖ Possible secondary effects of sentence-type

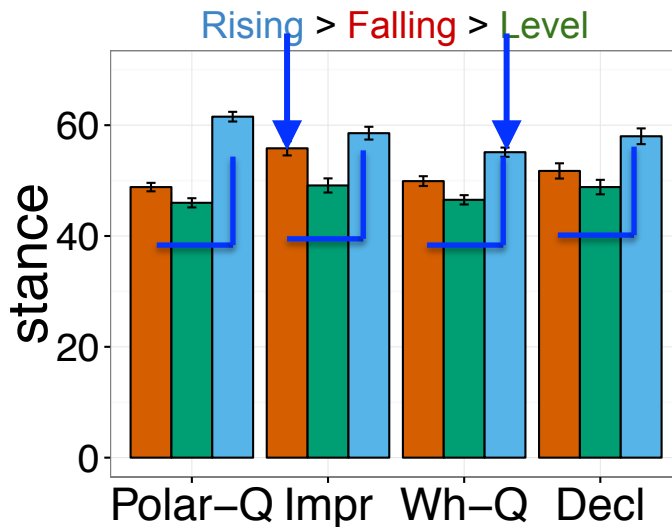
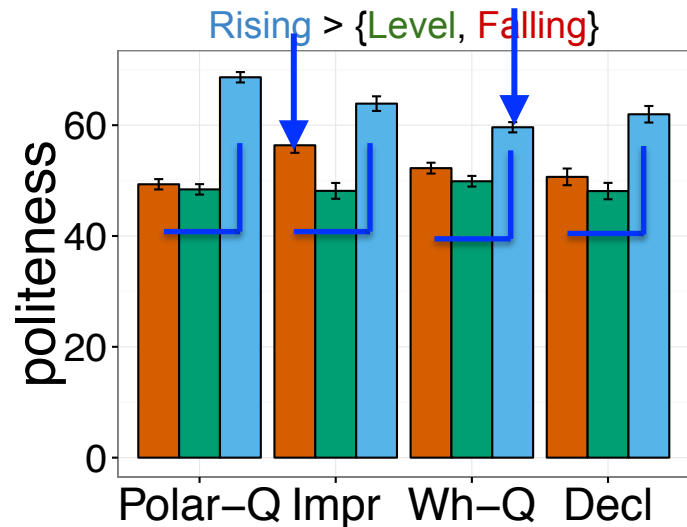


falling intonation: ■ level intonation: ■ rising intonation: ■

(cf. Uldall 1960)

Results for perlocutionary effects: across 'types'

- ❖ Consistent tune ordering across sentence-types
- ❖ Possible secondary effects of sentence-type



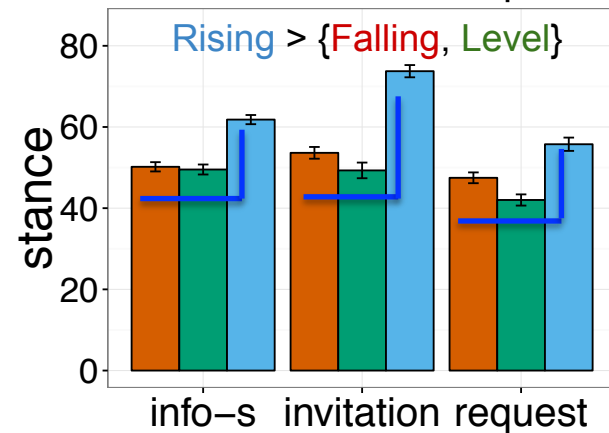
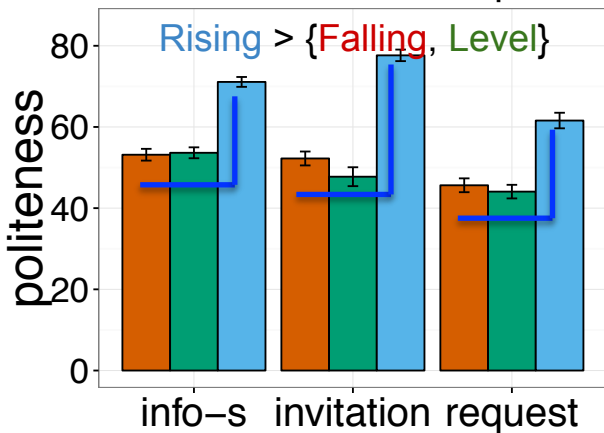
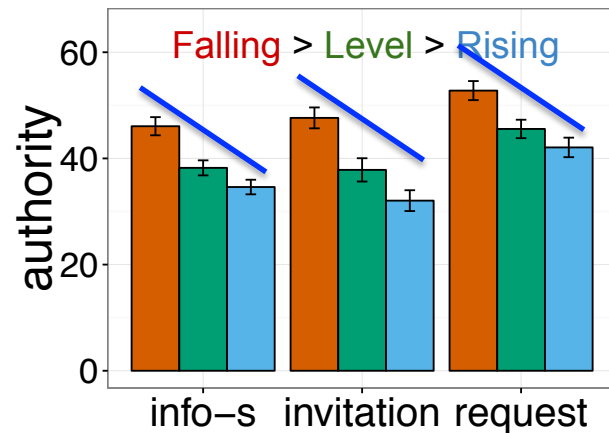
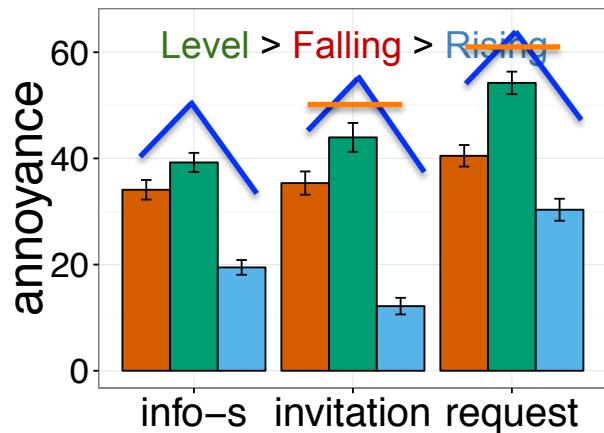
falling intonation: ■ level intonation: ■ rising intonation: ■

(cf. Uldall 1960)

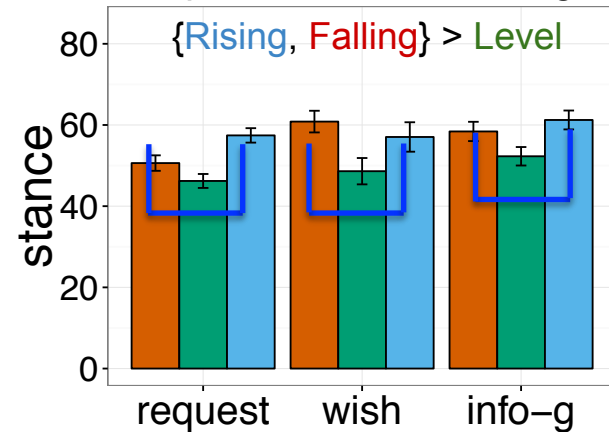
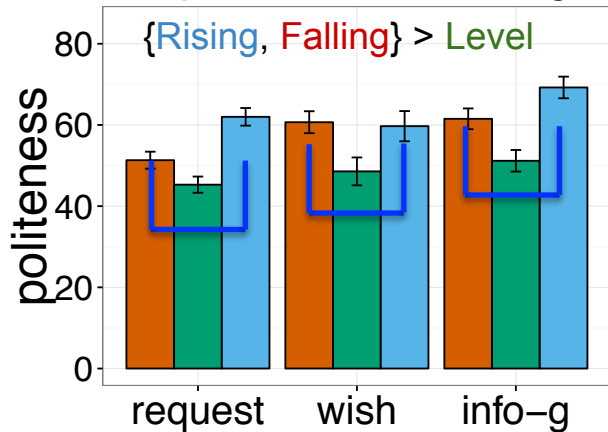
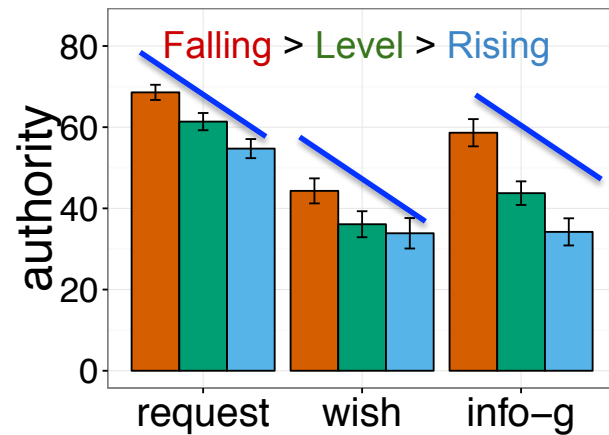
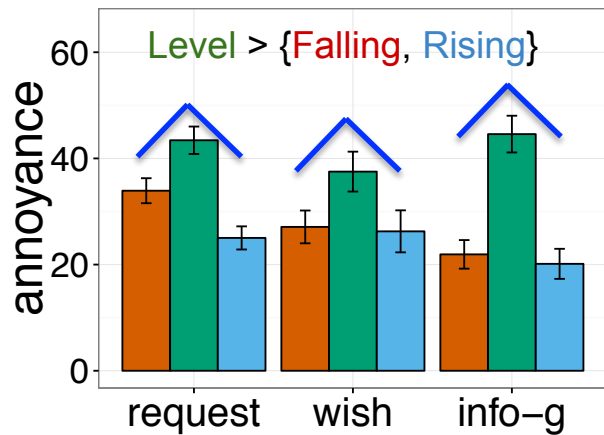
Results for perlocutionary effects: across illocutions

- ❖ **Central hypothesis:** There are perlocutionary effect conventions that are not predictable from content, context, and illocution alone, but rather inhere in specific type + tune conventions.
- ❖ Perlocutionary ratings (Q3–6) plotted across subjects' choices on illocutions
 - x-axes: subjects' choices on illocutions
 - y-axes: mean perlocutionary ratings / standard errors

Results for perlocutionary effects: polar-questions



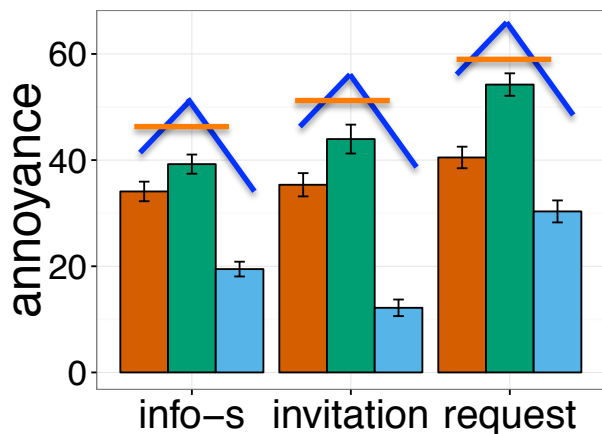
Results for perlocutionary effects: imperatives



Results for perlocutionary effects: wh-questions

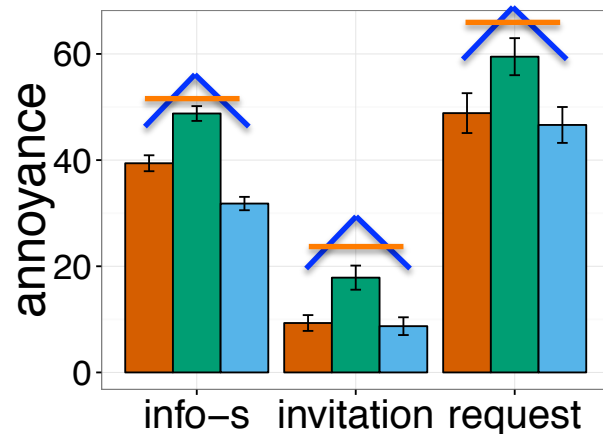
Annoyance: Polar-interrogative

Level > Falling > Rising



Annoyance: Wh-interrogative

Level > {Falling, Rising}

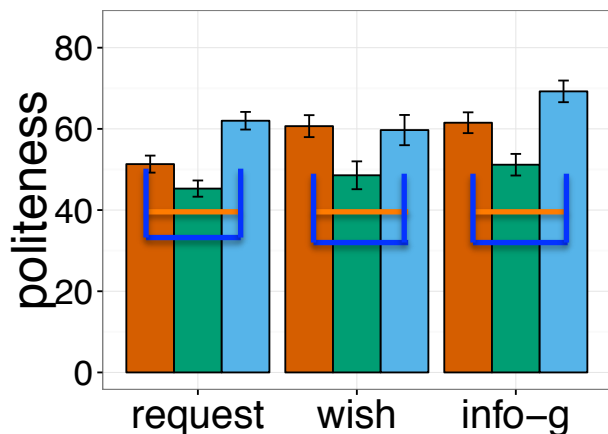


Bigger baseline changes
depending on illocution

Results for perlocutionary effects: declaratives

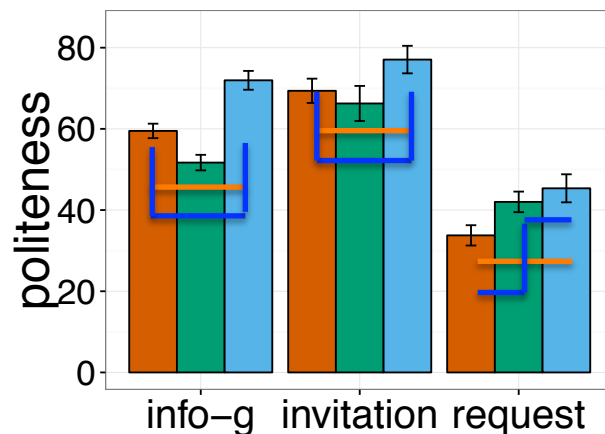
Politeness: Imperative

Level > Falling > Rising



Politeness: Declarative

Level > {Falling, Rising}



Bigger baseline changes
Declarative requests

Discussion: type + tune conventions for perlocutions

Linear mixed effects models fitted to the combined data

- ❖ Each of the **perlocutionary ratings** as the dependent variables
- ❖ **Intonation**, participants' choice of **illocution**, and **sentence-type** as independent variables
 - All the possible two-way & three-way interactions between them
- ❖ **Participants** and **speakers** as random effects

Discussion: type + tune conventions for perlocutions

❖ Significant and independent effects of **intonation** on perlocution

→ Core tune conventions on perlocutions

➤ Annoyance: Level > Falling > Rising

➤ Authority: Falling > Level > Rising

➤ Politeness: Rising > {Falling, Level}

➤ Positive stance: Rising > Falling > Level

Significance ($p < .01$)
across all pairs!



Discussion: type + tune conventions for perlocutions

❖ Significant and independent effects of **intonation** * **sentence type**

→ Secondary type + tune conventions on perlocutions

- Imperative + **Rising**: less polite, less positive
- Wh-interrogative + **Rising**: less polite, less positive
- Declarative + **Level**: less annoyed sounding
- Declarative + **Rising**: even less authoritative



Significance ($p < .01$)
for all interactions!

Results for perlocutionary effects: summary

- ❖ The existence of type + tune perlocutionary conventions that cannot be subsumed under, and thus independent from, illocution, context, and content
- ❖ The type + tune perlocutionary conventions hold across different speaker voices and across different participants

Other interactions

- ❖ Significant effects of **illocution**
- ❖ Significant effects of **sentence-type**

- ❖ Significant effects of **illocution * sentence type** interactions
- ❖ Significant effects of **illocution * intonation * sentence type** interactions

Discussion: type + tune conventions for perlocutions

- ❖ Illocution-oriented type + tune conventions for English
 - Primary type conventions
 - Secondary type + tune conventions

- ❖ Perlocution-oriented type + tune conventions for English
 - Primary tune conventions
 - Secondary type + tune conventions

Core tune conventions for perlocutions

Falling  Thereby signals that she is seeking to sound authoritative.

Level  Thereby signals a sense that she is annoyed.

Rising  Thereby signals that she is polite and has positive stance towards the listener.

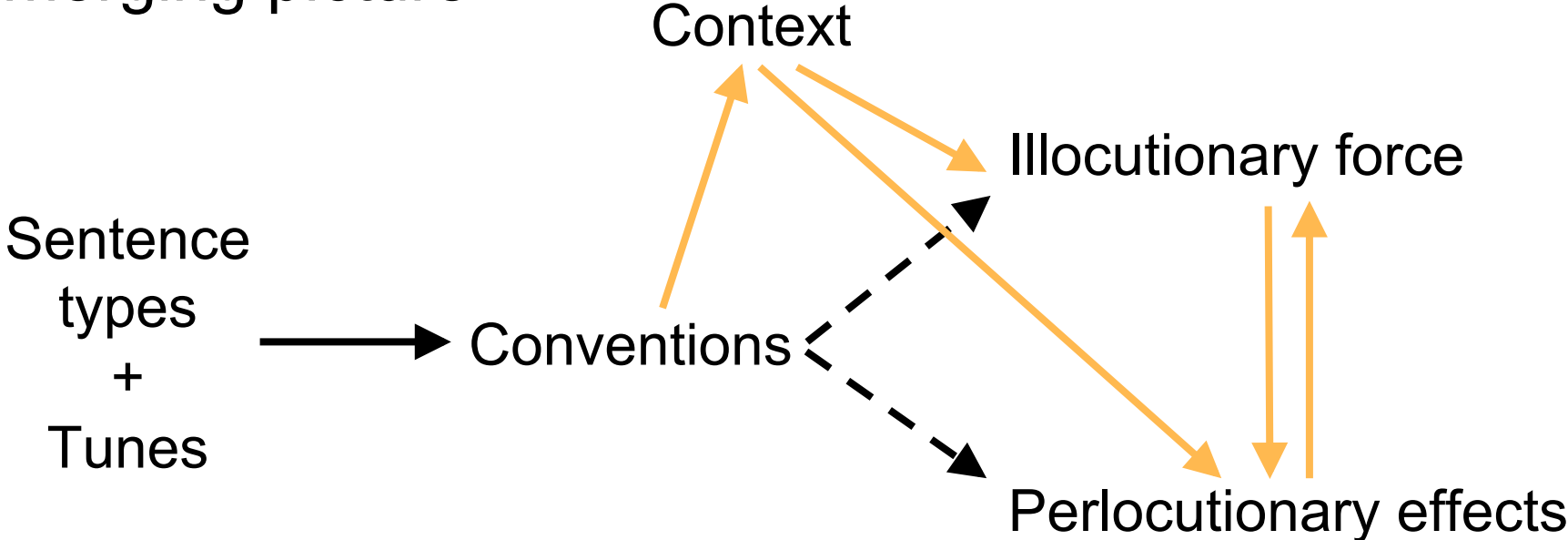
Secondary type + tune conventions

Rising declarative — Signals even lower authority than for other clause types

Level declarative — Signals annoyance to a lesser degree than for other clause types

Rising imperative — Signals politeness to a lesser degree than for other clause types
Rising wh-Q

Emerging picture



Discussion: the source of perlocutionary conventions

- ❖ Sound symbolism
- ❖ Deviation from the norm (a division of pragmatic labor)
 - Canonical declaratives: falling
 - Canonical polar-interrogatives: rising
- ❖ Arbitrary conventions
- ❖ A combination of all three

Conclusion

- ❖ Separate, context-independent conventions for perlocution signaled by specific type + tunes, and distinct from illocution.
- ❖ The conventions of language extend to interactional information relating to style, stance, and other kinds of social meaning.
- ❖ Potential connections to non-at-issue, expressive, and perspective dependent meanings.
- ❖ Full paper and data: <https://github.com/sunwooj/perlocution>

Thank you!