

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

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Short abstract One of the major open issues in semantics and pragmatics concerns the role of convention in relating sentence types with illocutionary acts and perlocutionary effects. For the type-to-illocution connection, some degree of *force conventionalism* seems to be widely accepted. In contrast, Austin (1962) and many subsequent researchers have assumed that perlocution is not a matter of convention, but rather arises inexorably from illocution, content, and context. In this paper, we challenge this fundamental assumption about perlocution with evidence from a new perception experiment. The experiment focuses on perlocutionary effects relating to the listener's conception of the speaker as a social actor. We find that these effects are predictable from sentence type plus intonation ('type + tune'), that they vary by type + tune, and that they are consistent across a wide range of sentence contents, contexts, and illocutionary inferences. We argue that these conventions are naturally incorporated into existing work on sentence-type conventions.

Introduction One of the major open issues in semantics and pragmatics concerns the role of convention in relating sentence types (e.g., declarative, interrogative, imperative) with illocutionary acts (e.g., assert, question, request) and subsequent perlocutionary effects (e.g., appearing authoritative, genial, encouraging). For the type-to-illocution connection, some degree of *force conventionalism* seems to be widely accepted (Austin, 1962; Searle, 1969; Green, 2007; Lauer, 2013). In contrast, Austin (1962) and many subsequent researchers have assumed that perlocution is not a matter of convention, but rather arises inexorably from illocution, content, and context.

In this paper, we challenge this fundamental assumption about perlocutionary effects with evidence from a new perception experiment. The experiment focuses on perlocutionary effects relating to the listener’s conception of the speaker as a social actor. We find that these effects are predictable from sentence type plus intonation (‘type + tune’), that they vary by type + tune, and that they are consistent across a wide range of sentence contents, contexts, and illocutionary inferences. Together with prior work on cross-linguistic type + tune variation (Jun & Foreman 1996; Gordon 1999; Gussenhoven 2002; cf. Ohala 1983), these findings point to irreducible perlocutionary conventions. We argue that these conventions are naturally assimilated to the *sentence-type conventions* of Condoravdi & Lauer (2011, 2012) and Lauer (2013).

Motivation: Conventions for illocution and perlocution The connection between sentence types and illocutionary acts is one-to-many and highly uncertain in usage. For instance, interrogatives can be information-seeking, but they can also be used to quiz, to invite, to request, to accuse, and so forth. Declaratives standardly assert information, but they too can be intended and perceived as requests, commands, accusations, threats, and others. Imperatives are perhaps the most variable of all: they are stereotypically used to command, but commanding is often not even indirectly part of the act performed, as in pleas, invitations, and well-wishes (Condoravdi & Lauer, 2012).

Condoravdi & Lauer (2011, 2012) and Lauer (2013) propose to understand this constrained variation in terms of conventions governing the use of sentence types (or type + tune pairs; see also Gunlogson 2001). On this view, a speaker who utters a declarative with content *p* in context *c* *thereby* (in virtue of the act alone) commits to acting as though she believes *p*. Similarly, a speaker who utters an interrogative with content *Q* commits to a preference for having the addressee commit to acting as though he believes an answer to *Q*. And uttering an imperative with content *p* constitutes a commitment to acting in accord with having a preference for *p*. These conventions circumscribe the range of felicitous uses for their associated sentence types, thereby allowing for the attested variation while still explaining why type + tune choices are pragmatically meaningful.

Austin (1962:101) defined perlocutionary effects as “certain consequential effects upon the feelings, thoughts, or actions of the audience, or of the speaker”. Are there irreducible sentence-type conventions governing how speakers instill such effects in listeners? As we noted above, Austin seems to have believed that the answer is ‘no’ by definition. However, consider the effects of hearing each of the polar interrogatives in (1) with falling, flat, and rising sentence-level intonation:

- (1) a. Do manatees have molars? (information-seeking bias)
- b. Do you wanna go for a run? (invitation bias)
- c. Can you carry this box? (request bias)
- d. Did you eat my cupcake? (accusation bias)

These sentences vary widely in their illocutionary biases. But our intuition is that the speaker’s choice of intonation has a stable perlocutionary effect across all of these illocutions. For instance,

a falling contour projects authority, a level contour annoyance, and a rising contour politeness. These inferences of course interact with the illocutionary inferences — an accusation can be only so polite, and an invitation can be only so annoyed — but their constancy across these different contexts suggests a role for convention. The case for convention is made stronger by the fact that these inferences are particular to polar interrogatives. For instance, to signal politeness with an imperative, one typically uses a falling contour rather than a rising one. To signal speaker authority with declaratives and wh-interrogatives, one typically uses level, rather than falling, contours. Thus, these seem to be conventional perlocutionary effects attached to specific type + tunes.

Perception experiment To validate and quantify the above intuitions, we conducted a perception experiment in which we systematically manipulated the terminal contour intonation of a variety of sentence types, probing subjects' judgments of the illocutionary acts and perlocutionary effects associated with the utterances. To keep the experiment to a manageable size, we focused on polar interrogatives but included other sentence types as well.

Materials. The stimuli involved 16 English polar interrogatives, 5 imperatives, 5 wh-questions, and 5 declaratives. In choosing these stimuli, we sought to expose participants to sentences with a wide range of illocutionary biases. The recordings of the 31 sentences thus chosen (produced by four speakers) were manipulated to create 3 different kinds of stimuli for each sentence, varying in their final contours: rising, level, and falling. Following ToBI conventions (Beckman & Ayers 1997), the three contours corresponded to L* H-H%, !H* H-L%, and !H* L-L%, respectively.

Procedure. 120 Native English speakers were recruited as participants. Each participant listened to all 31 sentences, each presented in a randomly chosen intonation among the three patterns available. After listening to each sentence, six questions were posed. Q1 asked participants to type in the sentence they heard, as a verification step. Q2 probed their understanding of the speaker's intended illocutionary effect, by asking them to choose responses corresponding to information seeking, requesting, inviting, etc., for polar interrogatives, and other options for other sentence types. Q3–Q6 probed the perlocutionary effects the utterances had on participants by asking them to give graded responses (0–100) to the questions 'How annoyed does the speaker sound?', 'How authoritative does the speaker sound?', 'How polite does the speaker sound?', and 'What kind of attitude does the speaker have towards the listener?' (positive-to-negative scale). At the end of the experiment, participants provided basic demographic information (gender, age, and ethnicity).

Results for illocution. We saw the expected range of variation in response to our illocutionary-oriented Q2. In particular, our polar interrogative stimuli were pre-coded for what kind of bias we expected them to convey ('information', 'invitation', 'request', or ambiguous), and these categorizations proved to be significant predictors of participants' judgments. Intonation also reliably influenced illocution, but its effects were dominated by the sentences' content-related biases. These results reassure us that participants made their perlocutionary judgments given a diversity of illocutions, helping us to robustly test our hypothesis that illocution does not determine perlocution.

Results for perlocution. Our central hypothesis is that there are perlocutionary effect conventions that are not predictable from content, context, and illocution alone, but rather inhere in specific type + tune conventions. We thus predict that the answers to our perlocutionary-oriented Q3–Q6 will be consistent across different sentence contents and illocutionary acts. And this is what we find, for all three sentence types we probed, across all the illocutionary inferences chosen for Q2. Fig. 1 summarizes the results for polar interrogatives, alongside three comparisons with other clause types. (Space limitations prevent us from showing the full data set.) The categories on the

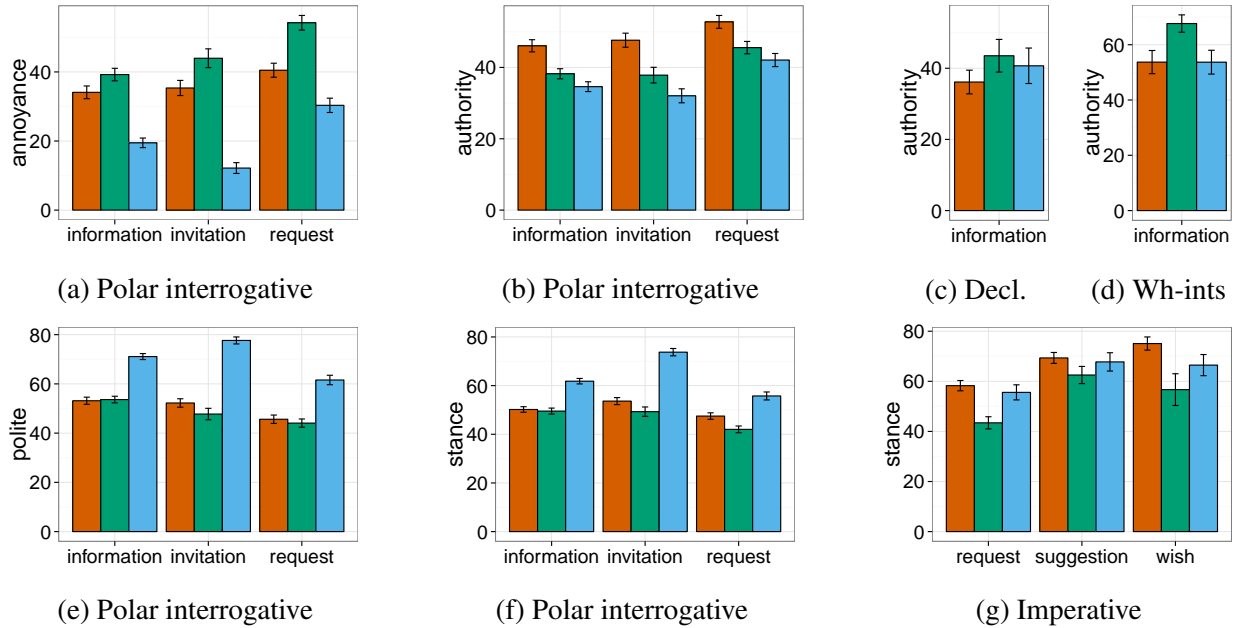


Figure 1: Participants’ perlocutionary judgments for various clause types across illocutionary inferences. **Legend:** falling intonation: ■ level intonation: ■ rising intonation: ■

x-axis represent participants’ illocutionary choices, and the y-axis measures their perlocutionary ratings. The generalizations are clear: for polar interrogatives, level contour (green) signals annoyance, falling (red) signals authority, and rising (blue) signals politeness and positive stance. Crucially, the corresponding generalizations for other clause types are different (figs. 1c, 1d, 1g), indicating conventional associations. The baseline level for these effects is influenced by perceived illocution, as expected given the nature of pragmatic inference, but the ordering remains stable.

Focusing on polar interrogatives, we substantiated these observations with a series of linear mixed effects models with each of the perlocutionary ratings as the dependent variables; intonation, illocution, subject gender, and subject race as independent variables; and subjects and speakers as random effects. The models support a three-way distinction between the contours for annoyance (level > falling > rising; $p < .001$ for all pairs) and authoritativeness (falling > level > rising; $p < .001$ for all), and at least a two-way distinction for politeness (rising vs. falling, rising vs. level; $p < .001$) and stance (rising vs. falling; falling vs. level; $p < 0.05$). Strikingly, we find that, in addition to intonation and illocution, race is a significant predictor ($p < .05$). This is in-line with existing work arguing that African-American English has different type + tune conventions for interrogatives than standard English (Green 2002; Jun & Foreman 1996), which further argues for a role for convention in understanding these perlocutionary effects.

Discussion Our results suggest that there are separate, context-independent conventions for perlocution that are signaled by specific type + tunes, and distinct from illocutionary acts and inferences. Such results suggest that the conventions of language extend beyond meanings that are relevant to the immediate functional effects of communication to include more subtle interactional information relating to style, stance, and other kinds of social meaning.

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