Intonation affect perlocutionary meaning in requests and offers

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Traditional accounts of the semantics of intonational contours assume compositionality, such that the meaning of a given contour depends on the combined functions of pitch accents and boundary tones [1]. This framework, however, has yet to incorporate recent research showing that affective meaning may influence the judgement of speech act (e.g., statement vs. question [2]), that the speaker may choose different tunes (e.g., for requests and offers) according to their familiarity with the listener [3], or that perlocutionary meaning is a function of both sentence type and tune [4].

The main goal of the present research is to explore how perlocutionary meaning is influenced by tune (rising vs. falling) for two distinct, yet comparable illocutionary acts: requests and offers (e.g., *Can [you/I] bring [me/you] some water?*). A main experiment based on a rating task on auditory items was carried out to elicit participants' responses along three scales: speaker MOOD, SINCERITY, and AUTHORITY (cf. [5]). In line with [4], we expected the combination of falling contour and polar question to evoke negative judgments of speaker mood and a perception of higher speaker authority. We were particularly interested in a possible asymmetry between requests and offers with respect to the effects of falling tune on perceived speaker sincerity: speakers can utter offers (*Can I bring you some water?*) without really intending/desiring to carry out the offered act, while by contrast, requests (*Can you bring me some water?*) are unlikely to be produced with no intention/desire of receiving a favor.

Two female native speakers of AE recorded 96 request-offer pairs with both rising and falling contours. Acoustic analyses of the stimuli showed that Speaker 2 had generally larger f0 movements than Speaker 1. In particular, the nuclear pitch accent was higher before falling contours and lower before rising contours, and both the rising and falling contours had larger f0 movements for Speaker 2 than for Speaker 1.

A total of 22677 responses from 237 participants were elicited using a Mechanical Turk online survey. Each participant rated 96 items (6 blocks of 16 items sorted by utterance type (request/offer) and question type (MOOD/AUTHORITY/SINCERITY). Each trial presented an audio file, then a question with a sliding scale (Figure1). Each participant received only one of the three question types (see (1) for an example) per item.

Analyses of the responses confirmed the main effect of falling tune, irrespective of speaker differences, to evoke the perception of a less happy MOOD of the speaker (t=-16.45, p<.001: Figure2), higher speaker AUTHORITY (t=8.82, p<.001: Figure3), and less SINCERITY (t=-11.44, p<0.001: Figure4). In addition, we found that the falling tune raises speaker AUTHORITY to a greater degree for requests than for offers (t=3.6, p<.001: Figure3) and lowers SINCERITY to a greater degree for offers than for requests (t=-4.67, p<.001: Figure4).

A follow-up rating task on 52 participants who did not participate in the auditory task was further conducted on the written items. Participants evaluated the difficulty of completing a task or asking someone else to complete a task on their behalf. All items were judged as relatively easy, with requests being judged slightly more difficult than offers (t=2.8, p < .001). The 'difficulty' score for each item was thus added as covariate in the statistical analyses on the auditory responses of the main experiment. However, no significant effects and interactions were found.

Taken together, these results reinforce findings that intonational tune is a fundamental cue for perlocutionary/affective meaning. In the next steps, we will further test how the presence of the discourse background or knowledge of speaker-listener social relationships influence utterance assessments.
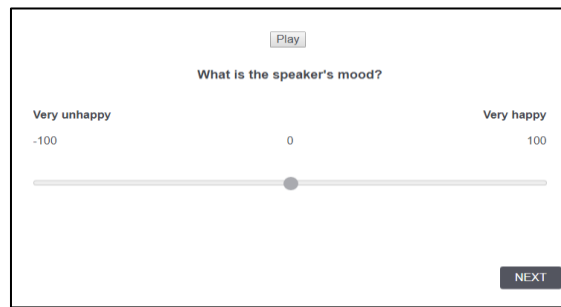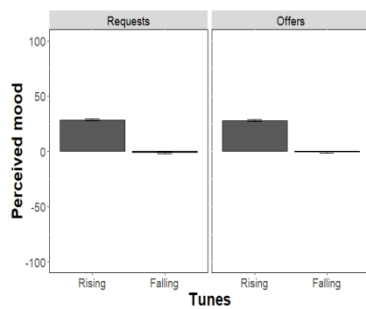
Main experiment

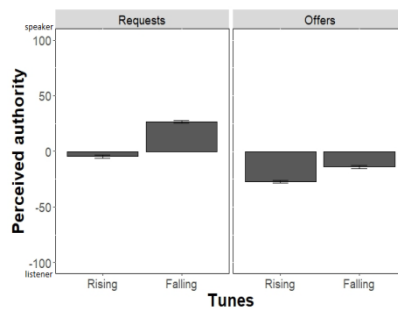

Figure 1. Example Display

Figure 2. *Mood rating*.   Figure 3. *Authority rating*.   Figure 4. *Sincerity rating*.
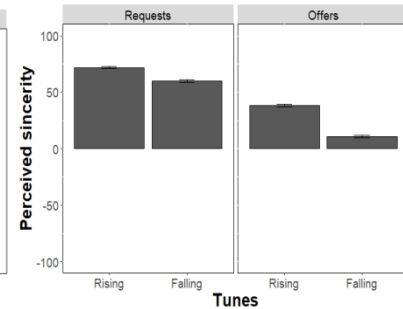
(1)   *Example target sentence and question set*:
        Target request/offer sentence:
            Can [you/I] bring [me/you] some water?

        MOOD question (for both request and offer):
            What is the speaker's mood?
                Very unhappy/happy --------------------------------------Very happy/unhappy

        AUTHORITY question (for both request and offer):
            Who does the speaker think has more authority in this situation?
                The speaker/listener ----------------------------------- The listener/speaker

        SINCERITY question:
            (For request)
            Does the speaker want the listener to bring her some water?
            (For offer)
            Does the speaker want to bring the listener some water?
                Not at all/Very much ---------------------------------- Very much/Not at all

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