

Multidimensional interpretation of rising and falling tunes for requests and offers

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Intonational contours convey multidimensional meaning. While it has been long assumed that the semantics of tunes are driven compositionally by integrating the meaning of pitch accents and phrasal/boundary tones [1], perception of meta-linguistic information such as valence of speaker emotion is known to affect listeners' judgment of speech act (e.g., statement vs. question: [2]). Social factors also affect tune choices: the speaker may choose different tunes (e.g., for requests and offers) according to their familiarity with the listener [3], and the perlocutionary meaning is a function of both sentence type and tune [4].

The present study investigates the interpretations of rising and falling tunes of specific kinds of requests and offers in American English (e.g., *Can [you/I] bring [me/you] some water?*). In particular, it tests how the perceived speaker mood, degree of sincerity and projected authority interact with one another (see example in (1)). The choice of the three dimensions is in line with the literature (e.g., [5]). Since the tested requests and offers belong to polar (yes/no) questions, the intonational deviation from the default rising tune [1] was predicted to evoke negative assessment of speaker mood and perception of relatively lower authority of the listener (or higher authority of the speaker). The effect of falling tune on the perceived degree of sincerity may differ between requests and offers, because an offer (*Can I bring you some water?*) with a falling tune may sarcastically convey the lack of intention to make an offer, whereas a request (*Can you bring me some water?*) is less likely to be uttered without intending to make a request, even with a falling tune.

A total of 96 request-offer pairs were recorded with both rising [H* L-H%] and falling [L* L-L%] tunes by two female native speakers of AE. 240 participants were randomly assigned to the 24 presentation lists for an online survey until each list reached 10 participants. Each participant rated a total of 96 items, which were presented as a sequence of 6 blocks that clustered 16 items by utterance type (request/offer) and question type (mood/authority/sincerity). On each trial, participants pressed the play button to listen to the sentence, saw the question, and rated the sentence using the slide bar underneath it (Fig. 1). Each participant provided a rating on only one of the three questions for a given version of an item (see (1) for an example set of questions that were cycled across lists).

Responses from 237 participants (observation N=22677) showed the predicted main effect of falling tune, which led to overall negative assessments of mood and sincerity (both $p < .001$) and higher speaker authority ($p < .001$). The effect of tune also showed robust interactions with the utterance type for authority and sincerity (both $p < .01$). While the falling tune had a similar negative impact on the assessment of the mood across requests and offers (Fig. 2), it led to higher speaker authority for the requests than for the offers (Fig. 3). This may imply that participants considered the falling tune as more deviant from their social norm for making a request than for making an offer. As for the rating of sincerity, the falling tune had a much larger impact on the offers than on the requests (Fig. 4). This supports our hypothesis that offers may express wider range of illocutionary forces and the change in the tune has larger impact on how sincere the speaker sounds in making an offer. In contrast, the tune does not seem to largely affect the perceived strength of the speaker's wish for requests. The present results demonstrate how different intonational tunes are assessed along with their meta-linguistic and social dimensions. We aim to further investigate the correlations among these interpretational dimensions, and test how the presence of the discourse background or knowledge of speaker-listener social relationships influence utterance assessments.

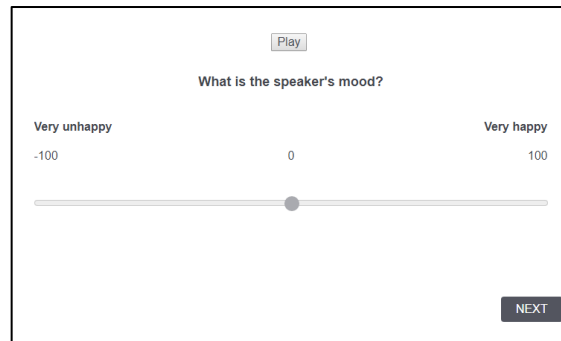


Figure 1. Example Display

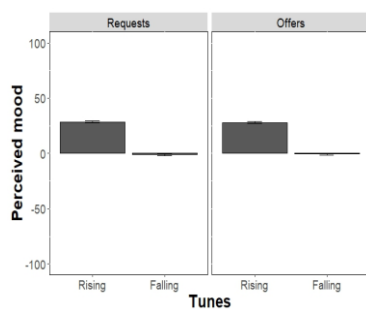


Figure 2. Mood rating.

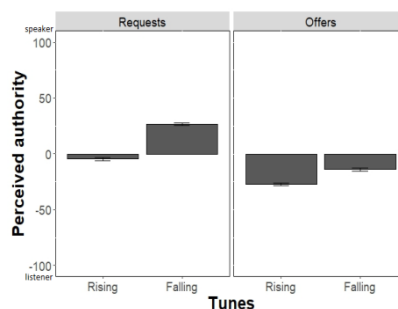


Figure 3. Authority rating.

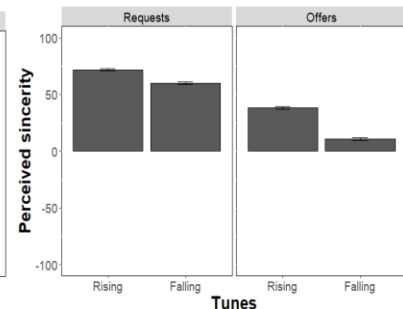


Figure 4. Sincerity rating.

(1) *Example target sentence and question set:*

Target request/offers 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

References

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