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

Sunwoo Jeong
Department of Linguistics, Stanford University
sunwooj@stanford.edu

The question of whether intonational contours can convey context independent meanings has been the subject of scrutiny for many prior works. Whereas works such as Cutler (1977) have claimed that no effect of intonation is independent from context, works such as Ward and Hirschberg (1985) have claimed that at least certain types of intonational contours have context independent effects on utterance meanings. More specifically, they have claimed that the fall-rise (L*+H) contour in English consistently evokes scalar values and conveys speaker uncertainty across a wide range of contexts; they have thus categorized this intonational effect as a case of conventional implicature. With this backdrop in mind, this paper argues that there exists another qualitatively different type of intonational convention that also seems to have context independent effects on meanings; in this case, the meaning concerns the attitudinal orientations of the speaker. This intonational convention is argued to be different from other conventional effects of intonation noted in the prior works mentioned above, in that it seems to be derived from the interaction between a given terminal contour and a given sentence type: although the same contour (e.g. falling) is shown to have context independent effects on attitudinal meanings for a given sentence type (e.g. polar interrogative), it is also shown to have diverging effects on them depending on what kinds of sentence type it combines with. This suggests that the conventions on certain attitudinal meanings operate via linguistic representations that tap into both the intonational features of a given utterance and the sentence-type related morphosyntactic features of the utterance.

The supporting evidence for this argument comes from a perception experiment that used auditory sentence stimuli systematically manipulated in the intonation of their terminal contours. For the purpose of this experiment, 16 English polar interrogative sentences with 4 different types of pragmatic biases in their interpretations (4 sentences for each type) were chosen as the main stimuli. The different pragmatic biases in the sentences were introduced in order to induce the subjects to infer diverging contexts for each type of sentences. More specifically, the first bias type involved sentences that would normally elicit information-seeking contexts and interpretations such as ‘Do manatees have molars?’ The second bias type involved sentences that would normally elicit invitation contexts and interpretations such as ‘Do you want to go to the movies?’ The third type involved sentences that would normally elicit request contexts and interpretations such as ‘Can you close the window?’ Finally, the fourth type involved sentences that don’t have strong interpretational biases but introduce a more diverse range of contexts and interpretations such as ‘Do you want to do the laundry?’ (information-seeking, request, and invitation interpretations are all highly compatible with this sentence). To enable comparisons between different sentence types, 5 imperatives, 5 wh-questions, and 5 declaratives were chosen as well.

The recordings of the 31 sentences thus chosen, produced by 4 different speakers (2 males and 2 females), were then manipulated to create 3 different kinds of stimuli for each sentence, varying in their final contours: rising, level, and falling. The manipulations were carried out by locating the nuclear pitch accent and assigning 3 new pitch values (for each of the rising, level, and falling contours) at the endpoint of the utterance. The nuclear pitch accent and the new pitch values at the endpoints were then interpolated in a linear fashion. The pitch value at the endpoint was 10 st higher than the nuclear pitch accent for the rising contour, 10 st lower for the falling contour, and the same pitch value for the level contour. For the main experiment, 120 Native English speakers were recruited as subjects. Each subject listened to all 31 sentences, each presented in a randomly chosen intonation among the 3 intonational patterns available. After listening to each sentence, the subjects were asked to answer (in ratings from 0 to 100) a series of questions that aimed to get at their interpretations of the attitudinal meanings conveyed by the utterances. These questions were as follows: ‘How annoyed does the speaker sound?’, ‘How authoritative does the speaker sound?’, ‘How polite does the speaker sound?’, and ‘What kind of attitude (from negative to
positive) does the speaker have towards the listener?” In addition, they were asked to choose the most likely speech acts for the utterances: information-seeking, request, invitation, etc.

The results of the experiment suggest that there are consistent effects of intonation on subjects’ interpretations of attitudinal meanings, and that such effects carry across sentences with different interpretational biases, i.e. across many different contexts that have been inferred by the subjects. In contrast, intonation did not have consistent effects on the interpretation of speech acts, especially for the first 3 types of sentences with fixed interpretational biases (although it did have certain significant effects for the sentences with ambiguous interpretational biases). The figure below summarizes the important data patterns for subjects’ interpretations of the attitudinal meanings of the polar interrogative utterances.

A series of linear mixed effects models with each of the attitudinal ratings (annoyance, politeness, etc.) as the main dependent variable, intonation and interpretation bias as independent variables, and speakers and subjects as random effects, further corroborated the observations above: intonation was a highly significant predictor for all 4 kinds of attitudinal ratings, and there was always a tripartite distinction between the 3 contours. More specifically, the level contours in polar interrogatives reliably signaled more annoyance (followed by the falling, and then by the rising contours) across different interpretational contexts, whereas the falling contours in polar interrogatives reliably signaled more authoritativeness (followed by the level, and then by the rising contours) across different interpretational contexts. Finally, the rising contours in polar interrogatives reliably signaled more politeness and positive attitude towards the listener (followed by the falling, and then by the level contours) across different interpretational contexts.

Crucially, such consistent effect of prosody on attitudinal meanings seemed to emerge only in conjunction with a specific sentence type. The results for the stimuli representing other sentence types showed that the same contours had different effects on the attitudinal meanings depending on the sentence type: for instance, it was the level contour that signaled significantly higher degree of authoritativeness for the declaratives, rather than the falling contours, which had been the case for the polar interrogatives. Such patterns suggest that the attitudinal meanings that come to be conventionally signaled by certain intonational contours may have initially arisen from an interaction between intonation and sentence type, and the inferences that can be drawn from the non-canonical associations between the two (Scherer et al. 1984). It is likely that such inferences are subsequently conventionalized into stable associations between attitudinal meanings and terminal contours that get paired with specific sentence types during their operations. The highly stable experimental results across a wide range of interpretational biases, contexts, and speech acts, further demonstrate the conventional nature of these associations.

References