

## Prosodic features of stance strength and polarity

Valerie Freeman  
Indiana University

While textual aspects of stance (attitudes and opinions about the topic of discussion) have been well studied in discourse analysis, conversation analysis, and computational modeling, its phonetic and prosodic properties have been difficult to disentangle from the many other types of meaning (social, structural, informational) which are delivered through the same acoustic channels in natural speech. **Recent work** (2014, 2015) has begun to tackle the problem, finding that variations in prosodic measures (speech rate, vowel duration, pitch, intensity) are correlated with stance presence and strength in unscripted speech, and that stances with different discourse functions may be distinguishable by the shapes of their pitch and intensity contours. Following the successes of these initial studies, the **work presented here** continues the investigation of acoustically-measurable signals of stance-taking by focusing on prosodic features of stance strength and polarity in a large sample of the ATAROS corpus, which contains pairs of speakers engaged in collaborative tasks designed to elicit frequent changes in stance. The interactions are transcribed, time-aligned to the audio, and manually annotated for stance strength (none, weak, moderate, strong), polarity (positive, negative, neutral), and stance-act type (e.g., opinion-offering and soliciting, (dis)agreement, persuasion, rapport-building, etc.). Speaker-normalized vowel duration, pitch, and intensity are automatically extracted over 32,000 stressed vowels from content words spoken by the 40 speakers in the sample. **Results** indicate that successive levels of stance strength are best distinguished by increases in both pitch and intensity, and positive polarity is primarily signaled by longer vowel duration. While previous work has found differences between strength and polarity levels when examining the slopes or shapes of pitch and intensity contours taken over vowel duration, such dynamic features in the current sample are only substantially informative in distinguishing a few of the annotated stance-act types, such as agreement, rapport-building, reluctance to accept another's stance, and backchanneling. This points to the complexity of stance in natural speech while highlighting the possibilities in identifying acoustic signals of more discrete components of stance. The corpus, methods, and findings **contribute** to the study and understanding of acoustic-phonetic properties of social and attitudinal messages conveyed in natural speech, which may be of interest to a range of fields, including discourse/conversation analysis, experimental phonetics, corpus linguistics, and computational linguistics.