The perception of sarcasm: Can prosody cue whether a statement is a compliment or an insult?

The majority of previous work on sarcasm perception and production has only focused on the correlates of global acoustic features such as F0 mean or speech rate across the entire utterance. These studies have found conflicting results in that some have found sarcasm is associated with higher F0, while others have found the opposite (Rockwell, 2007; Cheang and Pell, 2009; Bryant, 2010). There has been only one consistent finding in this previous work – that is, that sarcastic speech is uttered at a slower speech rate than sincere speech. Additionally, all of these previous studies have only investigated the type of sarcasm depicted in (a) - that is, sarcasm using positive literal content. In (a), we see a literal compliment, however, if uttered sarcastically, it is instead intended as an insult or to tease the addressee. Conversely, if one utters the sentence in (b) literally, it is an insult, while if uttered sarcastically, it can be intended as a compliment.

(a) You're a really awesome cook.   (b) You're a really awful cook.

More recently, studies have begun to investigate sarcasm as it is used with negative literal content (see (b) above). Mauchand, Vergis & Pell (2018) found that although listeners could discriminate sarcastic versus sincere speech (with no contextual aid), an acoustic analysis revealed no difference in global acoustic features across the different types of utterances. These findings demonstrate that perhaps it is the prosodic contour, and not global acoustic features, that differentiate sarcastic from sincere speech and these interpretations may differ depending on the specific type of sarcasm being investigated.

Thus, the current study aimed to answer the following research questions: 1) What prosodic contours are perceived as sarcastic by native Canadian English listeners? 2) Are these perceptions influenced by whether the semantic content of the utterance is literally positive or literally negative?

To answer these questions, 4 phonetically trained speakers were recruited to record both positive and negative literal statements (e.g. a) and b), respectively) in a variety of different intonation contours. These contours differed in two respects: Nuclear Pitch Accent (H*, L+H*, L*+H) and Length of the Nuclear Pitch Accent (Slow or Neutral). 18 listeners rated each token on a 5-point Likert scale in terms of how sarcastic they believed the speaker was intending to be (1 = clearly not sarcastic, 5 = clearly sarcastic).

Results showed a main effect of both the Length and of the Pitch Accent type, in that the bitonal pitch accents (L-H* and L*-H) were rated as significantly more sarcastic than the unitonal pitch accent (H*), and that the Slow tokens were rated as significantly more sarcastic than the Neutral tokens. Significant interactions also showed that several prosodic correlates were only relevant to sarcasm perception when the content was literally negative. These findings contribute to our understanding of the relationship between sarcasm and prosody, as well as some of the more complex relationships between sarcasm, prosody and the literal semantics of the utterance.

References

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