

Are you mocking me or are you laughing with me?

Ellen Breitholtz

Dept of Philosophy, Linguistics
and Theory of Science
University of Gothenburg
ellen.breitholtz@gu.se

Kristina Lundholm Fors

Dept of Philosophy, Linguistics
and Theory of Science
University of Gothenburg
kristina.lundholm@gu.se

Abstract

This pilot study explores the influence of a set of semantic-pragmatic and phonetic acoustic parameters on the perception of laughter. The results suggest that voiced and unvoiced laughter are associated with different types of situations. There are also indications that the perceived meaning of laughter can be modified by modification of the context in which the laughter appears.

1 Introduction

Laughter does not necessarily equate to joy, since laughter can be used to express a range of emotions. When someone laughs we can immediately tell whether the person laughing does so kindly or maliciously. However, it is not clear to what extent this judgement is based on the actual sound of the laughter and to what extent it is based on the context in which the laughter occurs. In this paper we will describe and investigate how the phonetic-acoustic properties and the pragmatic context of laughter influence how a laughter event is perceived. Specifically, we are interested in the type of laughter called "hånskratt" in Swedish, which may be translated as mocking or jeering laughter – what makes us perceive a laugh as mocking? In this paper we present the result of a pilot study where subjects were asked to match laughter of various phonetic-acoustic quality to various situations where laughter would be expected.

2 Background

There are several subtypes of laughter, such as song-like laughter, snort-like laughter and voiced and unvoiced laughter (Bachorowski et al., 2001). It has been shown that humans are adept at distinguishing between positive and negative laughter (Devillers and Vidrascu, 2007), and also that

voiced laughter elicits much more positive emotions than unvoiced laughter (Bachorowski and Owren, 2001). Thus we may hypothesise that the voicing is a factor in determining whether a laughter event is mocking or not. Many studies have investigated various aspects of the pragmatic function of laughter, for example OConnell and Kowal (2005), Holmes (2006), and Adelswärd (1989). These studies show that laughter not only expresses joy, but also performs other social and communicative functions. Fewer studies have been carried out that focus on a precise analysis of the semantic contribution a dialogue participant makes by laughing, and how the perceived meaning is affected by particular contextual parameters. Recently there has been some work into this issue: for example Ginzburg et al. (2014) aim at creating formal models capable of accounting for laughter and laughterful utterances, and there is also recent work on the semantics of other types of non-verbal dialogue contributions that is relevant to this.

3 Aim and hypothesis

Our aim is to find out how a set of semantic-pragmatic and phonetic-acoustic parameters affect the perception of laughter, and ultimately to integrate these parameters in a semantic model of dialogue. We are particularly interested in which features are characteristic of mocking laughter, and whether semantic-pragmatic features or phonetic-acoustic features have the strongest influence on the perception of an instance of laughter as mocking.

4 Method

Samples of spontaneous laughter were obtained by letting two subjects read jokes to each other. They were also given three hypothetical scenarios which could elicit mocking laughter, and asked how they would laugh in that situation. Finally, the subjects

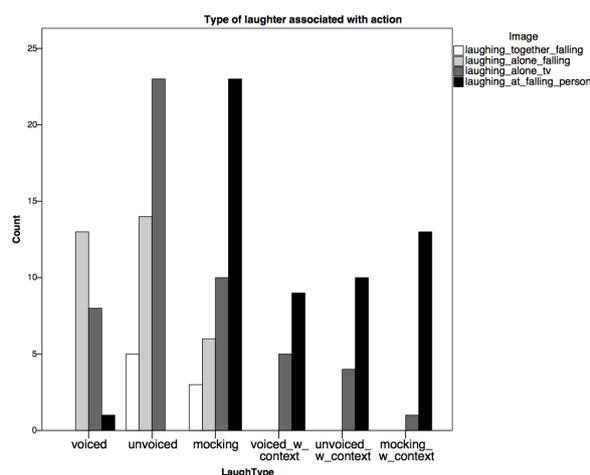
were also explicitly asked to give an example (by imitation) of their concept of mocking laughter.

Out of the samples collected, 9 were used in the study: 3 voiced samples, 3 unvoiced samples, and three samples of what was given as an example of mocking laughter. The laughter samples were all taken from the same speaker, who is a male 34 year old native speaker of Swedish. In addition, the samples were paired with the same speaker uttering "de va rätt åt dig" ("that serves you right"). This speech sample was uttered spontaneously by the speakers during the discussion about mocking laughter.

Four two-part image series were created in Adobe Illustrator, depicting stick figures in the following situations: 1) one person falling over, and laughing about it, 2) two persons falling over, and laughing about it, 3) one person watching a clown on tv, and laughing, and 4) one person falling over, and another person pointing and laughing at that person, while the person that fell over looks sad.

With each set of images, the participants – two females and five males, all native speakers of Swedish – heard a laughter and were told to click on the image that they thought best corresponded with the laughter. The laughter sound files were presented in a randomised order, using the experiment software PsychoPy (Peirce, 2007). Each subject heard each sound file twice.

5 Results



Fisher's exact test showed that laughter types differ significantly by image ($p < 0.001$). Voiced laughter is primarily associated with the two persons laughing together after falling over, while unvoiced laughter is primarily associated with the person laughing alone at something funny on tv. Mocking laughter is linked to the person laughing

at someone falling over. Adding the utterance "de va rätt åt dig" ("that serves you right") lead to subjects associating the voiced and unvoiced laughter samples with the image of the person being laughed at for falling over.

6 Discussion

The results of this pilot study suggest that voiced and unvoiced laughter are associated with different types of laughter-inducing situations. However, unvoiced laughter was not identified primarily as mocking laughter, but rather seems to be perceived as the laughter of someone who is laughing by them-self. Further, our results indicate that the perceived meaning of laughter can be modified by the context in which the laughter appears.

References

- Viveka Adelswärd. 1989. Laughter and dialogue: The social significance of laughter in institutional discourse. *Nordic Journal of Linguistics*, 12(02):107–136.
- Jo-Anne Bachorowski and Michael J Owren. 2001. Not All Laughs are Alike: Voiced but Not Unvoiced Laughter Readily Elicits Positive Affect. *Psychological Science*, (3):252–257.
- Jo-Anne Bachorowski, Moria J Smoski, and Michael J Owren. 2001. The acoustic features of human laughter. *The Journal of the Acoustical Society of America*, 110(3):1581.
- Laurence Devillers and Laurence Vidrascu. 2007. Positive and negative emotional states behind the laughs in spontaneous spoken dialogs. In *Interdisciplinary Workshop on The Phonetics of Laughter*, page 37.
- Jonathan Ginzburg, Ye Tian, Pascal Amsili, Claire Beyssade, Barbera Hemforth, Yannick Mathieu, Claire Saillard, Julian Hough, Spyridon Kousidis, and David Schlagen. 2014. The disfluency, exclamation and laughter in dialogue (duel) project. In *Proceedings of the 18th SemDial Workshop on the Semantics and Pragmatics of Dialogue (DialWatt), Posters*.
- Janet Holmes. 2006. Sharing a laugh: Pragmatic aspects of humor and gender in the workplace. *Journal of Pragmatics*, 38(1):26–50.
- Daniel C OConnell and Sabine Kowal. 2005. Laughter in Bill Clintons My life (2004) interviews. *Pragmatics*, 15(2/3):275–299.
- Jonathan W Peirce. 2007. PsychoPy: Psychophysics software in python. *Journal of neuroscience methods*, 162(1):8–13.