

:-) = Happy? Nonverbal Cues Fulfill a Variety of Communication Goals

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Introduction

Research shows that emoticons carry information about a message sender's emotions (Derks, Bos, & von Grumbkow, 2008; Harris & Paradice, 2007; Lo, 2008; Utz, 2000) and suggests they carry information about motives and intentions (Fridlund, 1994). This research has largely ignored the presence of other textual (i.e., paralinguistic) nonverbal cues. However, Riordan and Kreuz (2010) found that nonverbal cues other than emoticons are used in CMC as well, and Harris and Paradice (2007) suggest that the same goals of emoticons can be extended to these other cues.

The current work examines the meaning of a variety of nonverbal cues in computer-mediated communication. In addition, we introduce a framework for grouping these cues.

Participants and Method

104 participants recruited via Amazon's Mechanical Turk crowdsourcing site were paid to:

- 1) Write an email exhibiting anger, surprise, happiness, or sadness
- 2) Rate the level of emotion in the email written
- 3) Write about how they express emotion in email
- 4) Rank whether and which cues fulfill four communication goals on a scale of 1 *not at all* to 7 *very much* (categories made from goals suggested in previous research: Ekman & Friesen, 1969; Derks, Bos, & von Grumbkow, 2008; Harrison, 1973; Rezabek & Cochenour, 1998; Utz, 2000).

Framework

Semiotics research (e.g., Chandler, 2003; Hudson, 2000; Lindov, 1999) suggests that signs and symbols can be grouped within three categories. Below we use examples to show the framework as related to cues, with an email example of each group:

Iconic: symbols that are **directly related** to their meaning (e.g., symbols that look like the verbal action)

Emoticons: :-)
Capitalization: SCREAM
Spelled Sounds: _____

my coworker called my boss and my other coworker into her office, and shut the door. so basically it was everyone in my dept except me, and i heard angry voices saying "this is not working!" i was pretty sure they were talking about me. argggghh!

Indexical: symbols that are **indirectly related** to their meaning (e.g., symbols that are exaggerations of existing interpretations)

Repeating Exclamation Points: !!!
Combined Punctuation: !?!!
Repeating Question Marks: _____

Yesterday I got home and found my dog out front. He ripped the screen out of the bedroom and jumped off our porch. I was so freaked, can you believe that???

Symbolic: symbols are **not related** to their meaning (e.g., symbols have no defined meaning).

Asterisks: **
Brackets: < >
Underscores: _____

For the last twenty years I have considered the Agora show the apex of Bruce's live performances, a night when the moment, the event, the crowd, the venue, and the performer all came together for a remarkable evening. It was the best.

Use of Cues to Express Emotion

Using the Linguistic Inquiry and Word Count program (LIWC; Pennebaker, Booth, & Francis, 2007), which categorizes words in a text based on an internal dictionary, the presence of positive or negative emotion words in the written email did not correlate highly with the participant-given emotion rating ($r = -.01$ and $-.18$, respectively, *ns*). The number of words in the email also was not correlated with the emotion rating ($r = .15$, *ns*). These results suggest that **more than just verbal cues are used to indicate emotion in email**. Indeed, one-sixth of emails written included nonverbal cues.

An analysis of the open-ended question of how the writer expresses emotion shows that:

57% report using **nonverbal cues** of any kind to express emotion.

57% report using **verbal cues** (e.g., metaphors, stories, strong vocabulary).

10% report **avoiding expressing emotion** in email at all.

Participants indicated using iconic cues more often than indexical or symbolic, and indexical cues more often than symbolic, showing **a relationship between the directness of meaning and rate of use**.

Use of Cues to Fulfill Goal

A 3 (cue group) by 4 (communication goal) ANOVA shows that participants perceive certain cue types as being better for fulfilling a communication goal than others. See Figure 1.

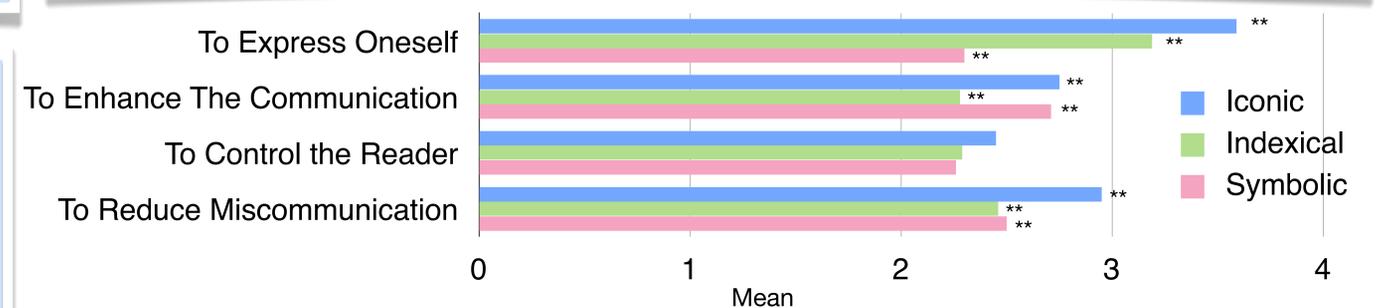


Figure 1: Specific types of cues are used more often than others to fulfill each communication goal. ** $p < .005$

Discussion

Much prior research has ignored the use of textual nonverbal cues other than emoticons. The current study shows that these cues are perceived to have meaning beyond what can be perceived with the verbal content, and that these meanings vary with the type of cue, especially as they fulfill a variety of communication goals. These findings replicate prior patterns of findings regarding emoticons and extend the evidence to other cues.

Further, the novel framework introduced here suggests that the directness of the relationship between a cue and its meaning influences its rate of use. This framework is helpful for conducting experiments of several cues without a large corpus, as it suggests that results from one cue may generalize to other cues in the same group.