

The Impact of Emoticons on Affect Interpretation in Instant Messaging

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ABSTRACT

Emoticons have been used for many years to increase the richness of messages in informal email and chat sessions. They are also becoming part of the culture of Instant Messaging (IM) communications. How effective are emoticons in the fast and short exchanges characteristic of IM? We conducted an experiment on how emoticons influence receivers' interpretation of the affect intensity of instant messages. We found that a happy (smiling) emoticon increased the positivity of a positive IM message more than a negative (frowning) emoticon increased the negativity of a negative IM message.

Keywords

instant messaging, emoticons, smiley, affect, computer-mediated communication

INTRODUCTION

Instant Messaging has been widely used for social communication, and companies are applying the technology to improve collaboration in workplaces and to explore new business opportunities. Although IM communication shares many of the characteristics of informal face to face encounters (opportunistic, brief, context-rich and dyadic), it is still very limited in communicating non-verbal cues. [1]

People can enrich their IM messages with social meaning through the creation and use of "emoticons," "smiley faces," or "relational icons" created with typographic symbols that appear sideways to resemble facial expressions. Emoticons were first designed to add humor and to mitigate negative meaning in text messages. [3]

Emoticon use is becoming part of the IM culture. For example, Yahoo! Messenger is now including animated emoticons for users. Walter and D'Addario have conducted an experiment on how emoticons influence users when they read email messages [2]; however, the impact of emoticons on IM messages has not yet been explored. Because IM messages may be shorter and more spontaneous than email, it is possible that emoticons will be ignored or will have little impact. In this study, I was interested in finding how people interpret messages with emoticons.

EXPERIMENT

We compared the effect of emoticons in text IM messages with 2 types of text grammatical marks, all uppercase letters and exclamation marks. Because emoticons are cartoon faces, they would seem to be more effective in lightening the tone of messages. Hence, we predicted that whereas grammatical marks will increase the intensity of positive and negative messages in the same direction as the message (for example, all upper case should make positive messages seem more positive and negative messages seem more negative), we thought negative emoticons would not increase the seriousness of negative messages, and indeed might have the opposite effect.

Measures. This was a within subjects experiment. The participants were asked to give an affect rating (scale 1 (very negative) to 5 (very positive)), according to 36 messages, according to how negative or positive each message was. Participants saw 3 positive and 3 negative messages formatted in three ways: *standard punctuation*, *expressive exclamation marks* (i.e. *three exclamation marks, !!!*), and both *expressive exclamation marks & upper case letters*. For example, a positive message "I am delighted with your work." was presented in 3 ways:

I am delighted with your work. (*standard punctuation*)

I am delighted with your work!!! (*expressive exclamation marks*)

I AM DELIGHTED WITH YOUR WORK!!! (*expressive exclamation marks & capital letters*)

All 36 messages were presented to the participant with and without an emoticon consistent with the message.

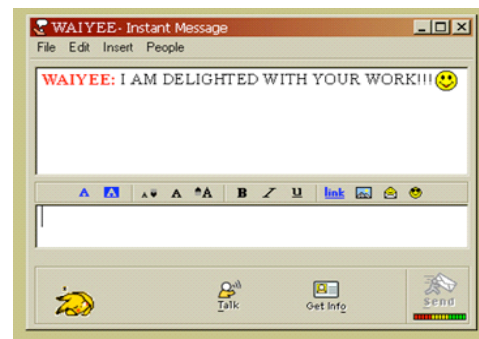


Figure 1. A positive message with expressive exclamation marks, capital letters and a happy emoticon.

Design. Each participant was asked to rate the affect intensity of the same 36 IM messages. AIM (American Online Instant Messaging) was used to construct the messages for the experiment. In order to simulate a

realistic environment, the messages were presented on a computer desktop with background graphics in PowerPoint format. The participants read the message on the screen and marked their responses on paper. The messages presented in 3 different orders. Participants were given two breaks during the rating session. Eleven subjects, ranging in age from 22 to 35, volunteered, using a PC laptop in a student lounge. Their experience with IM ranged from novice to expert users of two years and greater (most were experts)

Results

Surprisingly, emoticons did not increase the positivity of all messages. Rather *emoticons increased the valence of messages in the same direction as these messages were intended (positive messages viewed as much more positive and negative messages viewed as much more negative)*. In this respect, they functioned to make messages more extreme in a way that punctuation marks did not.

We look at how emoticons and punctuation may influence the valence of messages to the participants. The analysis of variance results are shown in Table 1, below.

Table 1. Effects of Text Valence, Emoticons & Exclamation Marks on Valence Ratings of IM Messages				
Source	DF	DFDen	F Ratio	Prob>F
Subject & Random	10	246	0.383	0.953
Emoticon	1	246	4.297	0.039
			696.10	
Text	1	246	9	<.0001
Text * Emoticon	1	246	51.285	<.0001
E-Marks	1	246	11.507	0.001
Text * E-Marks	1	246	29.869	<.0001
Emoticon*E-Marks	1	246	0.568	0.452
Emoticon * E-Marks * Text	1	246	6.000	0.015

The analysis found emoticons had a much higher impact on messages when no exclamation mark was used. It had also indicated that participants were more influenced by emoticons on positive messages (see Figure 2). In another words, happy-face emoticons had a higher impact to increase the valence of the messages than the unhappy-face emoticons.

In Figure 2, we can see the expressive exclamation marks had also increased the positivity of positive messages regardless if emoticons were used. They have the same influence of what the emoticons did. Comparatively, the impact of the exclamation marks was much less on negative messages. Although the exclamation marks did make the negative messages more negative, the exclamation marks had almost no impact on the negative messages when emoticons were used.

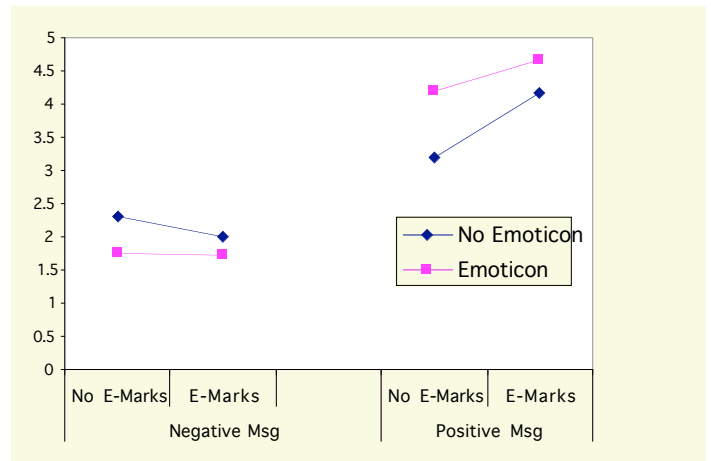


Figure 2. Effect of Emoticons on affect rating of IM messages

Discussion and Future Studies

The results of this study show that, despite the simplicity and brevity of IM messages, emoticons and punctuation marks can make a significant difference in how people interpret the message. Moreover, the impact of different punctuation choices can be fairly complex. In this study, emoticons made messages seem more emotionally extreme. Three exclamation marks made positive messages seem more positive.

Wolf suggests that as emoticons become more elaborate and as more choices are available, people will use more variations of emoticons. [3] This prediction should be verified, and if true may create problems in communication. For senders and receivers to reach common ground, they will need to agree on what messages mean emotionally. Further study, especially in more natural settings than the one represented in this experiment, seem warranted. These studies might lead ultimately to a common standard for emoticons and punctuation in IM, or at least to some agreement on whether such a standard would be useful.

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REFERENCES

- Nardi, B., Whittaker, S., Bradner, E. (2000). [Interaction and Outeraction: Instant Messaging in Action](#). In *Proceedings of Conference on Computer Supported Cooperative Work*, 79-88. New York: ACM Press.
- Walther, J., D'Addario, K. (2001) The Impacts of Emoticons on Message Interpretation in Computer-Mediated Communication. *Social Science Computer Review*, Volume:19 Number: 3 Page: 324 -347
- Wolf, Alecia(2000). "Emotional Expression Online: Gender Differences in Emoticon Use." *CyberPsychology & Behavior* 3, No. 5, 827-33