Effects of "emotional text" on Online Customer Service Chat

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Introduction

With the increasing popularity of online shopping, interests in online customer service chat used on e-commerce websites has grown significantly (Andrew and Haworth, 2002). Compare to email and telephone, which are considered as traditional methods of online customer service support, live chat can bring down the cost significantly and provide a more synchronized channel for communication. As a text-based interaction, online customer service chat represents a sales person who can provide assistance, direction, encouragement, and support for the shopper (Hynes, Stretcher, and Turri, 2007).

While Computer-mediated communication (CMC) may not allow us to hone in on a facial expression or hand gesture, there are subtle cues to perception embedded within our text communications. Exclamation marks signal excitement, as may ALL CAPS. Emoticons such as smiley :) or sad faces : (cue us to the emotions of others). Internet acronyms such as "lol" (laugh out loud) and "imho" (in my humble opinion) provide shortcuts to our feelings. Such "emotional text" provides cues to the reader about our feelings. But, how does the use of subtle clues impact customers' perceptions of service agents? Are these cues interpreted differently based on the gender? Without a clear understanding of how these signals are interpreted, service agents may send customers inaccurate cues about themselves.

Although online customer service has been widely adopted by hospitality firms (e.g. hotel and restaurant websites), the influence of using emotional text during service encounter on customer's perception has received scant research attention. Therefore, this research study aims to shed light on the impact of "emotional text" (i.e., emoticons, exclamation marks, capitalization, and "lol") on perceptions of service agents during an online service encounter. We begin by first reviewing relevant research related to CMC and impression formation as well as the use of paralanguage[1]. This is followed by a detailed discussion of research methods, procedures, and results. Finally, we conclude with a discussion of findings, limitations, and implications.

Finding cues to perception in computer-mediated text

We are only just beginning to understand the factors that shape how individuals form impressions of others via CMC. Early researchers viewed CMC as a limited communications medium because salient verbal and behavioral cues were missing (for a review see Walther, 1992; Tidwell & Walther, 2002). They approached CMC as if it was a new and different form of communications that was not truly social (Spears, Postmes, Lea, & Wolbert, 2002). But other work has revealed that CMC can be highly social. Similar to Face-to-Face (FtF) communication, text only communication also contains many subtle, and not so subtle, cues to identity and personality (Jacobson, 1999; Hancock & Dunham, 2001; Bargh & McKenna, 2004; Rouse & Haas, 2003). Even though CMC may not contain the same non-verbal cues as FtF communications, individuals still rely on available cues to form impressions (Walther, 1996, 1997).

Social Information Processing (SIP) theory posits that in the absence of FtF cues, we rely on whatever social cues we can obtain from the content of the communication. Because text-based communications is devoid of auditory and physical cues, small textual cues such as word choice, punctuation, emoticons, and typos may, in fact, become more salient (Derks, Bos & von

[1] Non-verbal elements within communications that may modify meaning and convey emotion.

Grumbkow, 2008; Lea & Spears, 1992; Walther & D'Addario, 2001). Similar to facial expressions and body language in FtF communications, these non-verbal cues provide us additional information regarding the senders(Jacobson, 1999; Derks, Bos, & von Grumbkow, 2008; Thompsen & Foulger, 1996; Rezabeck & Cochenour, 1994). Emotional text such as smiley faces, capitalization, and exclamation marks may suggest spontaneity or an out-going personality. Typos and misspellings may signal carelessness or even incompetence (Lea & Spears, 1992). Additionally, these cues can be especially salient when creating impressions of individuals we have just met online or for which we have little information (Hancock & Dunham, 2001; Spears & Lea, 1994; Bargh & McKenna, 2004). While the impressions we form may or may not be an accurate reflection of our partner's personality, these smaller cues take on an importance that directly impacts our impression formation (Rouse & Haas, 2003; Jacobson, 1999).

Paralanguage text as cues in CMC

A number of studies have examined the use of emoticons in text-based CMC as a form of paralanguage. Factors influencing whether senders choose to use emoticons include perceptions of receiver's personality (Rivera, Cooke, & Bauhs, 1996; Xu, Yi, & Xu, 2007), context in which communications are taking place (Derks, Bos, & von Grumbkow, 2007b; Mallon & Oppenheim, 2002), and gender (Huffaker & Calvert, 2005; Wolf, 2000; Witmer, 1997). Emoticon use (both happy and sad) can also impact message meaning (Walther & D'Addario, 2001; Derks, Bos, & von Grumbkow, 2008). Only a handful of studies have examined the use of paralingual text in relation to impression formation (Lea & Spears, 1992; Sherman, 2003; Jacobson, 1999).

When it comes to impression formation and paralanguage, both frequency of use and type of paralingual text have been shown to impact impressions of sender's personality in work related tasks and within text-based virtual communities. When typos, spelling errors, and text reversals were used as paralingual cues within emails, participants attributed individuals who exhibited these cues more negatively than those who did not (Lea & Spears, 1992). Different cues resulted in both positive and negative evaluations suggesting participants were responding to unique cues differently.

In the absence of prior information regarding others, individuals tend to create exaggerated and stereotypical first impressions based on the limited information available (Walther, 1996). These "hyperpersonal" first interactions are a combination of limited social cues afforded by CMC and our desire to "know" the individual with whom we are communicating. As such, our initial impressions are based on rapid processing of incomplete information and inferences based on stereotypes related to the little information we do have about the person (Sherman, 2003). Because emotional text[2] adds emotional content to text-based communications, these additional cues may play a key role in impression formation.

> *H_1: Customers will rate service agents who use emotional text more positively on character traits than those who do not use emotional text.*
>
> *H1a: Customers will rate service agents who use emotional text more positively on sociability than those who do not use emotional text.*
>
> *H1b: Customers will rate service agents who use emotional text more positively on reliability than those who do not use emotional text.*

[2] Emotional text is defined as use of emoticons (both happy and sad), use of capitalization and exclamation points to represent excitement, and use of Internet slang such as "lol" (laughing out loud).

Emotional response

Affect is one of the most fundamental dimensions of interpersonal behaviors (Forgas, 2000). Westbrook and Oliver (1991) suggest that customers' emotional responses are necessarily incorporated into their satisfaction. Moreover, individuals use their affective states as a source of information for evaluative judgments (Schwarz, 1990). Therefore, it is important to understanding the role of emotional responses in the process of impression formation for the study of customer services.

The technological foundation of most online customer service chat software is instant massaging, which is one of the traditional CMC tool. However, researchers in services area haven't noticed the lack of emotional conveys during live chat service encounters. Numerous studies have found emoticon use enhances emotional information within CMC text (Thompsen & Foulger; 1996, Rezabeck & Cochenour, 1994; Derks, Boss, & von Grumbkow, 2008). Such emotional information, received by customers, will further influence impression formation.

H_2: Emotional response as a mediator will account for the relationship between emotional text use and customer perception of service agents.

H2a: Emotional response will mediate the relationship between emotional text and socialibility.

H2b: Emotional response will mediate the relationship between emotional text and reliability.

Gender

Interestingly, when it comes to emoticon use and gender there appears to be no significant overall difference in emoticon use by gender (Wolf, 2000). There are, however, gender differences in how emoticons are used. Females tend to use the same amount of emoticons regardless of whether they are communicating with other females or with males (Lee, 2003). Males on the other hand tend to use fewer emoticons when conversing with males than with females. Additionally, women as a group have been found to use a more emotional style in online settings than males (Savicki & Kelley, 2000). As such this may suggest a potential sensitivity of females to emotional content in CMC.

H3: Gender will moderate the relationship between emotional text use and emotional response. Specifically, females are more likely to have a stronger emotional response towards emotional text compare to males.

Building upon the hypotheses, Figure 1 presents our conceptual model.

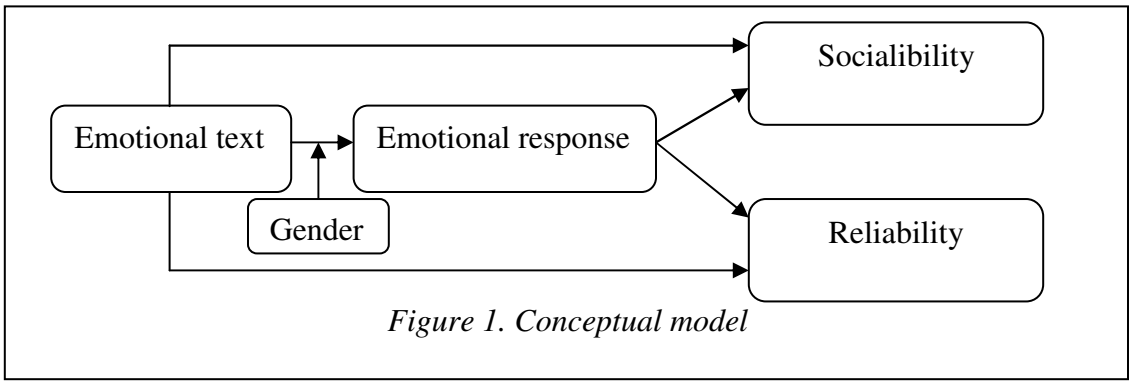

Figure 1. Conceptual model

Research Methods

Participants

Approximately 160 students were recruited from university undergraduate classes. A total of 53 students participated in the study of which there were 40 males and 13 females. The age of participants ranged from 20 to 25 with an average age of 21. Participants were randomly assigned to one of the two conditions (Emotional text/non emotional text). For the emotional text condition, 30% of the pre-scripted conversation included emotional text. Emotional text consisted of capitalized words, exclamation points, Internet slang (i.e., lol), and the common emoticons (:-D :) : ( ). Scripts for non-emotional text conditions included no emotional text. A pretest with participants was conducted and a manipulation check was completed to determine if the emotional text was noticed by participants and it was found the quantity was acceptable.

Measures

An online survey was complete after the chat session was ended. Our independent variables (IV) used was emotional text usage. Customers' perception of character traits were the dependent variables (DVs).

Two DVs were adapted from previous studies examining perception and character traits. Specifically, traits for sincere, trustworthy, respectable, credible, and dependable, were adapted and modified from Jones et al. (1999). Energetic, humorous, friendly, open-minded, enthusiastic, likeable, and honest were adapted from John & Srivastrava (1999). Further, measurement scales for mediator, including happy, frustrated (reverse coded), at ease, bored (reverse coded), and pleased, were adapted from Russell (2003). All DVs and MV were measured using a 7-point Likert scale ranging from "very strongly disagree" to "strongly agree".

Data analysis

To analyze the data, the latest version of JMP was used. An exploratory factor analysis using principal component analysis with varimax rotation was performed to identify dimensions of our DVs. After cross-loading items (likable and honest) were deleted, all items exceeded the minimum loading criterion (see Table 1). The Cronbach's alpha coefficients were 0.92 for socialibility, 0.90 for reliability, and 0.78 for emotional response suggesting high internal consistency.

		Component		**Cronbach's Alpha**
		1	2	
Socialibility	Energetic	.803		.885
	Humorous	.824		
	Friendly	.734		
	Open-minded	.750		
	Enthusiastic	.883		
Reliability	Sincere		.669	.918
	Trustworthy		.805	
	Respectable		.873	
	Credible		.886	
	Understandable		.793	
	Dependable		.797	

Table 1. Factor loadings and reliability

Results

To test our hypotheses empirically, a series of one-way ANOVAs, two-way ANOVA, and regressions were conducted. Generally speaking, the results of one-way ANOVA did show the effects of Emotional text on socialibility, but not on reliability (Table 2). Therefore, H1a is supported (see Figure 2) where as H1b is not (see Figure 3). Specifically, service agents who use emotional text were perceived to be more social, which suggests that emotional text does have a positive effect on impression formation. On the other hand, sales agents' reliability perceived by customers won't change regardless of their use of emotional text during live chat.

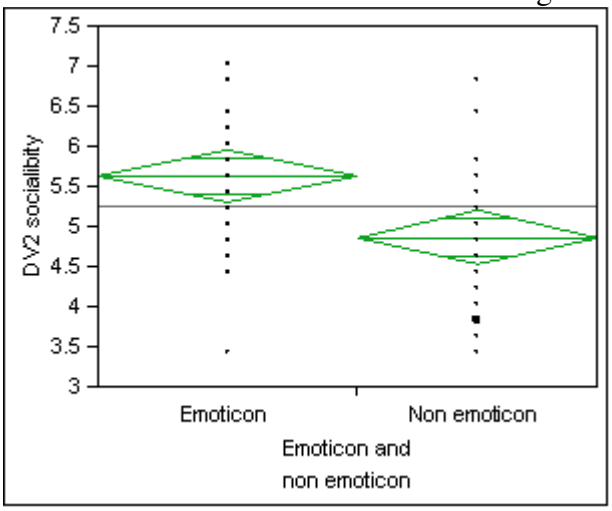

Figure 2. One-way Analysis of Sociability by Emoticon and non emoticon

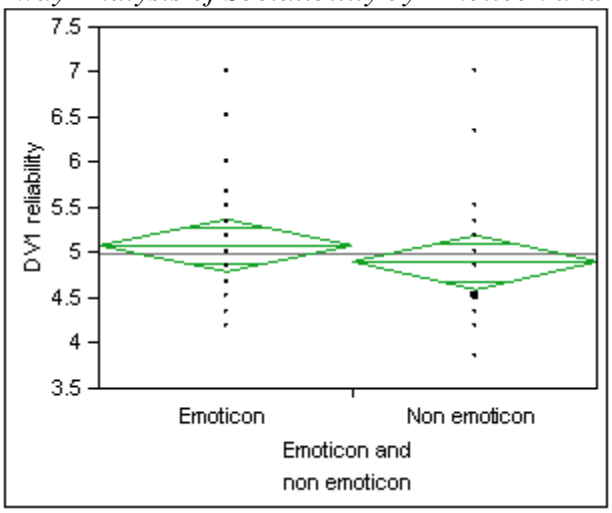

Figure 3. One-way Analysis of Reliability by Emoticon and non emoticon

	Condition		
DVs	Emoticon	Non Emoticon	F –Ratio
Socialibility	5.62	4.86	10.71*
Reliability	5.08	4.89	0.85

**p<.05; **p<.01; ***p<.001*

Table 2. Summary table of Means and F-ratios

To test the mediation effect of emotional response, we followed Baron and Kenny's (1986) approach. Since the effect of emotional text on reliability is not significant, H2a is not supported. As a matter of fact, the results of regression analysis does suggest that our mediator emotional response is positively associated with sociability (p<.001). Next, another one-way ANOVA analysis was performed to test the effect of emotional text on the mediator, emotional response (see Figure 4 and 5). The results indicate that emotional text positively influences customers emotional responses (p<.01).

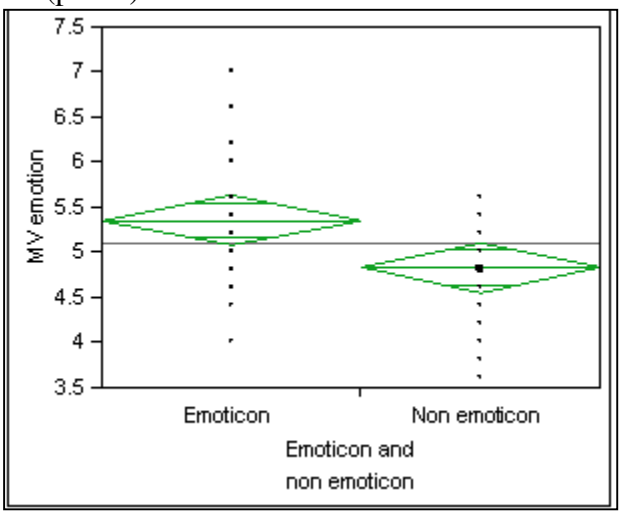

Figure 4. One-way Analysis of MV by Emoticon and non emoticon

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio	Prob > F
Emoticon and non emoticon	1	3.667733	3.66773	7.4998	0.0085*
Error	50	24.452267	0.48905		
C. Total	51	28.120000			

Means for Oneway Anova

Level	Number	Mean	Std Error	Lower 95%	Upper 95%
Emoticon	27	5.35556	0.13458	5.0852	5.6259
Non emoticon	25	4.82400	0.13986	4.5431	5.1049

Std Error uses a pooled estimate of error variance

Figure 5. One-way ANOVA

Additionally, after adding mediator to the model fit, our independent variable became insignificant, which suggests a fully mediation effect of emotional response (Figure 6). Therefore, H2a is supported, but not H2b.

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	1.4937316	0.71394	2.09	0.0417*
Emoticon and non emoticon[Emoticon]	0.1769912	0.103465	1.71	0.0936
MV emotion	0.7378319	0.139325	5.30	<.0001*

Figure 6. Mediation effect of emotional response

Last, gender was demonstrated to be a significant moderator ($p<.05$). Females displayed stronger emotional response towards the use of emotional text, whereas males did not report any differences between conditions in terms of emotional responses. H3 is supported.

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	3	7.674945	2.55832	3.4558
Error	48	35.534286	0.74030	Prob > F
C. Total	51	43.209231		0.0235*

Figure 7. Moderation effect of gender

Discussion

In this study, it was found the use of emotional text in online customer service chat has a positive impact on perception of character traits. Individuals who used emotional text were rated more social than those who did not include emotional text in their conversations. Emotional text may have enhanced connectedness between sender and receivers. This finding indicates that emotional text is an observable cue that does impact the perceptions of others. Since individuals were "chatting" for the first time, the inclusion of emotional text may have acted as a strong signal to an individual's socialibility, but not reliability. This finding is consistent with Social Information Processing (Walther, 1996).

In addition, this study found that emotional response fully mediated the relationship between emotional text use and perception of character traits, which supports the important role of emotional response in the evaluation process for the study of service encounters. As expected, gender exhibited a significant moderation effect on customers' emotional response. That is, female is more in tune with the use of emotional text than male.

Implications to practice

As previously stated, the use of online customer service chat in hospitality industry is increasing. Typically, this type of live chat is text-based communication, which is not as vivid as face-to-face interaction since certain facial expression does not exist in this process. Without such emotional cues, it is difficult for customer to form evaluative judgment, which has been argued to rely on the affective state of customers. As such, use of emotional text during service encounters may help establish the connection between service agents and customers. Our findings suggest that service agents who used emotional text were rated more social and had the ability to invoke stronger emotional responses. Conversely, emotional text does not change customers' perception of the reliability of service agents. Hence, service agents in certain industries such as banking and insurance that lives on reliability may want to avoid using emotional text during online customer service chat.

Limitations and Future Research

A number of limitations associated with this study should be addressed. First, while it was important to control the conversation between confederates and experiment participants, in order to ensure participants had similar experiences, the static nature of the conversation may have been too dissimilar from a typical online customer service chat and may have seemed unnatural for participants. Second, using students sample creates another problem. Although students are main component of online shoppers, additional data should be collected from real customers.

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