

"Turn that frown upside-down": A contextual account of emoticon usage on different virtual platforms

Author Kaye, Linda K, Wall, Helen J, Malone, Stephanie A

Published

2016

Journal Title

Computers in Human Behavior

Version Accepted Manuscript (AM)

DOI 10.1016/j.chb.2016.02.088

Downloaded from

http://hdl.handle.net/10072/392072

Griffith Research Online

https://research-repository.griffith.edu.au

"Turn that frown upside-down": A contextual account of emoticon usage on different virtual platforms

Abstract

Evidence highlights the prevalent usage of emoticons within digital forms of textual communication and the impact on the recipient. However, little evidence demonstrates the interpersonal functions for the user and whether this varies as a product of virtual platform. This formed the basis for the current study in which participants (N = 92) provided open-ended accounts of their reasons for using emoticons across three virtual platforms (email, text message, and social networking site), and their general emoticon usage across these. Responses revealed a number of themes on reasons for emoticon usage. The first was; "aiding personal expression", with sub-themes of; "establishing emotional tone"; and "to lighten the mood". Other themes were "reducing ambiguity of discourse" and "appropriateness of context". Overall, there was consistency across platforms, on both the personal and interpersonal functions which emoticons served. However, some disparity was identified as email platforms were deemed inappropriate for emoticon use, regardless of the fact that emoticons were recognised as important emotional aids for communication. Taken together these findings highlight the importance of emoticon usage for the user, through a contextual lens to recognise the influential factors upon these behaviours and the implications this has for digital text-based communication. In this regard, this contributes further conceptualisation of one aspect of hyperpersonal communication within virtual interactions, and how different platforms may permit these self-presentational efforts to a greater or lesser extent.

Keywords: Emotional expression; emoticons; social context; interactions; cues

1. Introduction

The role of context in emotional expression is by no means a new phenomenon. Indeed, previous research highlights the role of social contexts on expressive emotional behaviours (Friedman & Miller-Herringer, 1991), particularly for portraying positive emotions (Chapman & Wright, 1976; Kraut & Johnson, 1979). A more recent enquiry however, is the extent to which emotional expression through text-based communication, typically via digital platforms, may function on both an individual and interpersonal level (Derks, Arjan, Grumbkow, 2007; Huang, Yen & Zhang, 2008). One means of conveying emotional expression within text-based communication is through the use of emoticons or "emojis." These offer the user an opportunity to portray emotional information that may otherwise be restricted in contexts beyond traditional face-to-face interactions.

The increase in textual forms of communication such as emails and social networking sites (SNSs) has led researchers to compare the different ways people communicate and express emotion on virtual platforms compared to face-to-face interactions (Mark, Iqbal, Czerwinski, & Johns, 2014; Wall, Taylor, Conchie, Dixon, & Ellis, 2013). Of particular interest are the behaviours that are unique to text-based communication such as emoticons. Previous evidence, for example illustrates how emoticon usage enhances relationship development with others (Utz, 2000), varies across culture (Park, Barash, Fink, & Cha, 2013) and enhances recipients' positive affect (Gacey & Richard, 2013). Within this research enquiry, a great deal of focus has been on understanding how such emotional cues impact the recipient of the message. More recently Skovholt, Grønning and Kankaanranta (2014) found that emoticon usage enhances recipients' positive affect. However it remains less clear how emoticons may function for the *user*. That is, why do people use emoticons? As noted by Walther and D'Addario (2001; see also Walther & Parks, 2002) emoticon use may support the user in expressing themselves as

they intended, similar to the role of nonverbal cues in face-to-face interactions. The present study considered a key factor that may increase our understanding of why people use emoticons: namely the role of the specific virtual platforms (e.g., text, email, social networking sites) on usage behaviour.

Within the context of text-based communication, scholars have previously identified two key functions of emoticons; to portray emotional or social intent (Derks, Bos, & von Grumbkow, 2007; Kruger, Epley, Parker & Ng, 2005) and to reduce any potential ambiguity associated with the transmitted discourse (Ganster, Eimler, & Kramer, 2012). In this way, it could be argued these digital manifestations of emotions serve largely equivalent functions to those of facial expression within face-to-face interactions (Derks et al., 2007). However, it is of interest to consider the extent to which digital forms of text based communication serve a function for the user beyond that of traditional emotional expression. Indeed it has been argued that emotional "facial" displays, in the form of traditional non-verbal communication, go beyond manifestations of underlying motivational-emotional states (Buck, 1994) and serve an important function for the user that may vary in context-specific ways. In support, previous research has identified the role of different levels of social analysis (e.g., dyadic, group, individual) on the displays of emotion (Keltner & Haidt, 1999), and that people tend to display more positive facial expressions when engaging in a joint task with peers than when solitary (Fridlund, 1991). Therefore the nature of different social affordances across contexts may result in there being distinct individual functions for emoticon usage which vary across digital platforms.

Moreover, numerous studies have asserted that context shapes behaviour in important ways (Funder & Colvin, 1991; Wall, Taylor, & Campbell, 2016); thus, the impact of variations in online platform on emoticon usage is worthy of examination. Importantly, the extent to which emoticons are used in "simple" text-based platforms such as text messages (SMS), compared to those with more diverse and complex variants, such as social networking sites (SNSs) remains open to question. These platforms differ along numerous dimensions, for example privacy of interactions and complexity of features. Taken together, the current study aims to enhance our theoretical understanding of individual emotion usage and how this varies across the digital platforms of text messages (specifically, SMS), email and SNS (Facebook). Accordingly, we adopted a contextual lens to address the following research questions:

- 1. To what extent does emoticon usage vary across text-based communication?
- 2. Why do individuals use emoticons within text-based communication?

2. Method

Participants (N = 92), were first year undergraduate psychology students taking part for course credit, and were asked to complete an online questionnaire for a study interested in "The relationship between the self and online presentation¹" which took place between March and November 2014. Participants were directed via a web-link to an online questionnaire, in which one section included questions asking them to indicate the extent to which they used emoticons on each of the different virtual platforms (e.g., "Using the rating scale, please indicate the extent to which you use emoticons on email/text messages/Facebook"). After self-reported scores in emoticon usage were obtained on a 5-point scale (1 = never, 5 = almost always), additional open-ended responses were gathered. This specifically asked participants to explain why they used emoticons on these platforms. Therefore participants provided three separate accounts for the three virtual platforms.

¹ The results reported here represent one part of a larger research project.

3. Results/ Discussion

To examine the impact of virtual platform on differences in the amount of emoticon usage, a one way repeated measures ANOVA was performed using self-reported scores in emoticon usage as the DV. A main effect of platform was found, F(2, 160) = 125.16, p < .001, $\eta_p^2 = .96$ in which a greater use of emoticons were used in text messages (M = 4.30, SE = .09) than email (M = 2.12, SE = .13) and in the social networking site (M = 4.00, SE = .16).

Analysis of the open-ended responses pertaining the reasons for emoticon usage was undertaken using thematic analysis. In line with Braun and Clark's (2006) analytic strategy the written responses were repeatedly read by two naïve coders to enable familiarity with the responses. Subsequently, each coder independently identified initial themes, which were then scrutinised by identifying codes within the data. A theme was determined as characterising a response pattern in which the phenomena of interest is at least described within the narratives (Boyatzis, 1998). From this, it is possible to gain an insight into the extent of frequency of each theme, to enable additional quantitative analysis. Following this, the data was reviewed again in line with these themes to increase the validity of the coding procedure. This review process was undertaken concurrently with the development of a "codebook" as a means of organising the narratives for a more full interpretation (Crabtree & Miller, 1999). Finally, relevant extracts were selected to represent these. The first main theme to be identified was "aiding personal expression", with sub-themes of; "establishing emotional tone"; and "to lighten the mood". The second main theme was "reducing ambiguity of discourse." The final main theme was "appropriateness of context". Table 1 below shows the frequency in which each of these themes were discussed within the three virtual platforms.

[Table 1 about here]

Most noteworthy, "appropriateness of context" was identified substantially more within participants' accounts of emoticon use in emails relative to the other platforms. A discussion of the key themes is considered in the subsequent sections.

3.1. Aiding personal expression

Emoticons within all three virtual platforms were discussed in reference to their interpersonal function for aiding emotional expression. However, this appeared to operate in distinct ways; firstly through providing a personal function for establishing an emotional tone but also for creating a positive or "lighter" mood.

3.1.1. Establishing emotional tone

A commonly identified theme in all platforms was the extent to which emoticons could promote a relevant emotional tone to the communicational transmission. This was discussed in reference to the limitations of text-based communication for transmitting emotions and supports Walther's Cues-filtered-in approach which asserts that the absence of nonverbal cues does not necessarily restrict the exchange of interpersonal information (Walther & Parks, 2002):

"To emphasise certain emotions which are sometimes hard to establish over a text message" (Text messages)

"Helps to express the tone of what I am saying. Sometimes it is difficult to show the tone over text based communication (e.g., sarcasm, dry wit), emoticons help to counter this." (SNS) Additionally, it was identified that they served as a more effective method for portraying emotions rather than providing a verbal explanation:

"Makes people know how you're feeling a lot easier rather than you having to explain to them" (Email)

In this way, these findings indicate equivalent functions for the individual to that of face-toface emotional expression, yet offer insight into the benefits perceived to be afforded to the recipient in this transmission. This was also characteristic of the subsequent theme, which provided insight into the interpersonal benefits of emoticon usage.

3.1.2. To lighten the mood

In a similar vein, particularly for the portrayal of positive emoticons, these were frequently discussed as serving a function to lighten the mood of the transmission. This sub-theme was cited within participants' accounts across all three virtual platforms:

"Makes the conversation more light-hearted and easier to express what I am trying to say" (Text messages)

"Makes conversation less formal, more chatty" (SNS)

"To show what I'm saying is less serious, more friendly" (Email)

Interestingly within social networking sites, some participants' accounts extended beyond this by considering how emoticons could also add an extra element of "personality" to the discourse as well as ensuring the communication was more exciting;

"....to lighten the mood of the message, and it can demonstrate personality within messages as you cannot see facial expressions" (SNS)

"To come across as friendly because a message without emotions seems dull and emotionless" (SNS)

These sub-themes within "aiding personal expression" highlight a common motivation for individuals in their emoticon usage, particularly for promoting positive interpersonal interactions, and suggest little difference in this function between different virtual platforms. This is in line with previous research on emoticons in emails and how they increase recipients' positive affect and serve to enhance interpersonal relations (Skovholt, Grønning, & Kankaanranta, 2014). Both of these sub-themes have been reported to serve individual functions in that they allow the user to communicate their personality over and above what is possible through written expression alone. Furthermore, they enhanced the interpersonal communication by helping to set the tone of the communication. In reference to theories surrounding computer-mediated-communication, these findings support the notion that emoticons support the user in transmitting text-based discourse (Walther & D'Addario, 2001; Walther & Parks, 2002). Critically, this appears to have been a primary motivation across virtual platforms and highlights the personal and interpersonal function for the user. This is largely in line with the "cues-filtered-in approach" (Walther & Parks, 2002), suggesting how users tend to place greater weight on available cues and may even use these as a substitute for otherwise inaccessible nonverbal behaviours. In this way, the current findings show how emoticons serve as much for the user as the recipient, in functioning beyond emotional expression, and extend previous literature which has focused more on recipient impressions from such cues (Walther, 1992).

3.2. Reducing ambiguity of discourse.

The second main theme pertained to emoticons serving to reduce ambiguity in the transmitted discourse, to ensure the recipient understood the underlying emotional intent behind the textual information. Similar to the previous sub-theme, this theme related to all platforms and was most relevant in portrayal of positive emotions in an attempt to promote positive interpersonal interactions;

"To convey happiness or to ameliorate what might be perceived as a negative message and to add nuance." (Text messages)

"I want to make them feel good, happy and trying to avoid being misunderstood" (Text messages)

"So my messages don't come across as blunt/rude. Wink and tongue face is used to signal I was joking." (SNS)

"To make sure that the message I am sending isn't interpreted sarcastically or that I seem irritable." (Email)

"I am very hyper-vigilant when sending messages as they can be taken the wrong way. For example, when talking to someone in person, you can gauge their facial expressions and emotions. Yet, in an online interaction, it is sometimes hard to understand if someone is being serious or making a joke, is being nasty or is being nice. I therefore use emoticons to diffuse any situations which may be taken the wrong way, and to make the other person happy." (Email)

All accounts that pertained to this theme discussed how emoticon use can enhance positive interactions. Specifically, emoticons were used to ensure that recipients interpreted the message as the user intended, rather than the messages being interpreted with potential negative connotations. Interestingly, this was only evident in instances for reducing ambiguity against negative consequences. More specifically, no accounts were found where participants used negative emoticons to ensure that a negative message was transmitted (e.g., using an angry emoticon to make it evident that the user was annoyed). As with the previous theme, emoticon use served both individual and interpersonal functions. That is, users were able to ensure that their individual message was communicated with clear intention, while supporting a positive interpersonal interaction. Interestingly, these findings would appear to suggest a considered approach by users in their emotion behaviours. That is, rather than being used in an automatic way as manifestations of emotional state, usage here arguably represents a more considered behaviour, in which users acknowledge their behaviours in respect to its impact on others. This highlights some distinctions from traditional face-to-face interactions, in which emotions are arguably more spontaneous and automatic (Buck, 1994).

3.3.(In)appropriateness of context

The final theme develops the aforementioned theme by providing additional evidence to the effect of "considered" emotional behaviour, yet also extending this by suggesting contextual variations which were not previously identified. In all cases within the accounts of email-related contexts, emoticon usage related to participants' perceptions about the appropriateness of this form of expression within a context which was perceived as being more professional in nature;

"I do not use emoticons in this context. I tend to send emails only to people of authority or professional people such as at work (area managers, line managers, supervisors, other stores, etc.) and to university lecturers. I see emoticons as something to be used in a general or casual conversations not in professional emails" (Email)

"I don't because emails are more of a way of communicating to managers at work or tutors so can't be as casual as a Facebook message." (Email)

"I often email tutors so avoid emoticons as it is not professional to do so." (Email)

Interestingly, only two of the accounts from the remaining platforms, specifically within social networking sites alone, did participants allude to differential emoticon usage from other virtual platforms. Here, this referred to the more casual and informal nature associated with SNS;

"Better to use in social networks/texts than using a full stop (less serious) – Mostly everyone else also uses emoticons" (SNS)

"Mainly to let other people know how I am feeling and in what context I am saying things. Also on Facebook it's mostly to try and make people laugh." (SNS)

These findings suggest there is a contextual demand which influences the extent to which emoticons are used within email communications, but not within the other virtual platforms. This is interesting and presents some disparity in the overall findings. That is, although users identified some important personal and interpersonal functions of emoticons across all platforms, they also highlighted this as being inappropriate for professional-based communication, such as emails. This may be reflective of previous commentary highlighting differential emoticon usage as a result of task versus social-emotional oriented contexts (Derks et al., 2003; Xu, Yi & Xu, 2007). In the case of emails and indeed other forms of Computer Mediated Communication in task-oriented or professional contexts, this questions the extent to which interpersonal harmony is established or maintained when emoticons appear to be largely recognised as important positive aids in virtual communication. Given the increasing use of digital forms of text-based communication, one could speculate whether there will be a shift in societal acceptance of emoticon usage in such contexts. This may subsequently benefit a number of individuals. For example, users of distance learning programmes may only have access to written forms of communication with course tutors. When viewed with the perception that emoticons are inappropriate in a professional context, this may limit the extent to which these users establish positive tutor-student relationships and potentially have wider negative outcomes on course satisfaction (Hill, Lomas, & MacGregor, 2003). This is clearly an issue of societal interest and raises interesting implications for the development of future technologies, which may alleviate the use of textbased communication, to avoid these sorts of issues.

One limitation of the current study is that we did not establish participants' perceptions of the ease of use in using emoticons within the different platforms. Given that different digital platforms consist of different complexities of textual input and mechanisms for using emoticons, this may be inherently related to their usage. For example, previous evidence highlights the role of ease of use, for example, as one determinant of technology usage (Davis, Bagozzi, & Washaw, 1989; Teo, 2009). Therefore, the current findings can be brought into question when critically considering the factors related to usage. However, this

was not a primary issue of enquiry, particularly as we were concerned with self-reported perceptions rather than actual usage. Additionally, no evidence was forthcoming to suggest functionality or ease of use to be influential to the reasons for using (or not using) emoticons, however this issue should be acknowledged in light of the current findings.

A final limitation worth noting is the extent to which the open-response questionnaire method revealed the depth of the relevant issues. Specifically, face-to-face interviews or focus groups may provide more opportunities for greater, in-depth accounts of the phenomena of interest than in open-ended questionnaire-based responses, for example De Leeuw and van der Zouwen (1988). However, the results reported here were collected in the context of a larger research project and additionally, offered the opportunity for wider sampling through online methods. Therefore, although we may have experienced restrictions on the extent of depth in responses, we feel the themes observed remain valuable and valid accounts of the research issue.

4. Conclusion

The current findings have important theoretical implications as they support previous research on the functions of emotional expressions for aiding communicational transmission and reducing ambiguity of discourse (Derks et al., 2007; Ganster et al., 2012; Kruger et al., 2005). The findings also offer insight into a more contemporary form of emotional behaviour (i.e., emoticons on digital platforms). Specifically, we identify some contextual restrictions for individuals in portraying textual forms of emotional expression, particularly within email communication. Social norms and values pertaining to professionalism appear to be relevant in users' acceptance of their usage (or lack of) in this context, even though they simultaneously allude to emoticons as serving positive interpersonal functions, regardless of

virtual platform. This is interesting and presents new insight into the more considered and conscious portrayal of emotional expression which has previously been portrayed as an automatic, spontaneous process (Buck, 1994; Schmidt, Cohn, & Tian, 2003). These findings highlight the importance of considering unique online behaviours such as emoticon usage, and indeed other forms of online behaviour, through a contextual lens, so that the communicative function for the user can be understood. Evidence from this perspective previous research has been more focused on traits of the user which may be relevant in this regard, such as gender and dimensions of personality (Fox & Rooney, 2015; Wolf, 2004). The current study instead considers motives from the user's perspective and how this may be a considered process within different contexts. Indeed, this adds to the developing conceptualisation of hyperpersonal communication, often afforded to online interactions (Walther, Van Der Heide, Ramirez, Burgoon & Peńa, 2015) and extends these insights into this specific form of behaviour and how different platforms may permit these selfpresentational efforts to a greater or lesser extent than others (particularly for the case of email communication). Taken together, the notion of "turning that frown upside-down", in respect of using emoticons through digital platforms has a benefit both for the recipient and the user, but the extent to which these are employed has a contextual restriction in some contexts.

Author Disclosure Statement

No competing financial interests exist

References

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77–101

- Boyatzis, R. (1998). Transforming qualitative information: Thematic analysis and code development. Thousand Oaks, CA: Sage
- Buck, R. (1994). Social and emotional functions in facial expression and communication: The readout hypothesis. *Biological Psychology*, 38 (2-3), 95-115
- Chapman, A. J., & Wright, D. S. (1976). Social enhancement of laughter: An experimental analysis of some companion variables. *Journal of Experimental Child Psychology*, 21, 201-218
- Crabtree, B., & Miller, W. (1999). A template approach to text analysis: Developing and using codebooks. In B. Crabtree & W. Miller (Eds.), *Doing qualitative research* (pp. 163-177). Newbury Park, CA: Sage.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 928 1003.
- De Leeuw ED, & van der Zouwen J. (1988). Data quality in telephone and face-to-face surveys: a comparative meta-analysis. In R. M. Groves, P. P. Biemer, L. E. Lyberg et al. (Eds.), *Telephone survey methodology*. New York: John Wiley and Sons
- Derks, D., Arjan, E. R., & von Grumbkow, J. (2007). Emoticons and social interaction on the Internet: The importance of social context. *Computers in Human Behavior, 23* (1), 842-849
- Derks, D., Bos, A. E. R., von Grumbkow, J. (2008). Emoticons in computer-mediated communication: Social motives and social contexts. *Cyberpsychology & Behaviour, 11* (1), 99-101
- Fox, J., & Rooney, M. C. (2015). The Dark Triad and trait self-objectification as predictors of men's use and self-presentation behaviors on social networking sites. *Personality* and Individual Differences, 76, 161-165. doi:10.1016/j.paid.2014.12.017

- Fridlund, A. J. (1991). The sociality of solitary smiles: Effects of an implicit audience. *Journal* of Personality and Social Psychology, 60, 229-240
- Friedman, H. S., & Miller-Herringer, T. (1991). Nonverbal display of emotion in public and in private: Self-monitoring, personality and expressive cues. *Journal of Personality and Social Psychology*, 61 (5), 766-775
- Gacey, H. J., & Richard, E. M. (2013). Influence of emoticons on perceived negative affect and professionalism in work-related email. *Academy of Management*, 14646. doi: 10.5465/AMBPP.2013.14646
- Ganster, T., Eimler, S. C., & Kramer, N. C. (2012). Same same but different!? The differential influence of smilles and emoticons on person perception. *Cyberpsychology, Behaviour,* and Social Networking, 15 (4), 226-230
- Hill, Y., Lomas, L., & MacGregor, J. (2003). Students' perceptions of quality in higher education. *Quality Assurance in Education*, 11 (1), 15 20
- Huang, A. H., Yen, D. C., & Zhang, X. (2008). Exploring the potential effects of emoticons. Information and Management, 45 (7), 466-473. doi: 10.1016/j.im.2008.07.001
- Keltner, D., & Haidt, J. (1999). Social functions of emotions and four levels of analysis. Cognition and Emotion, 13 (5), 505-521. doi: 10.1080/026999399379168
- Kraut, R. E., & Johnston, R. (1979). Social and emotional messages of smiling: An ethological approach. *Journal of Personality and Social Psychology*, 37, 1539-1553

Kruger, J., Epley, N., Parker, J., & Ng, Z. (2005). Egocentrism over email: Can we communicate as well as we think? *Journal of Personality and Social Psychology*, *89* (6), 925-936

- Mark, G., Iqbal, S., Czerwinski, M., & Johns, P. (2014, February). Capturing the mood: facebook and face-to-face encounters in the workplace. In *Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing* (pp. 1082-1094). ACM.
- Park, J., Barash, V., Fink, C., & Cha, M. (2013, June). Emoticon Style: Interpreting Differences in Emoticons Across Cultures. In *ICWSM*.
- Schmidt, K. L., Cohn, J. F., & Tian, Y. (2003). Signal characteristics of spontaneous facial expressions: Automatic movement in solitary and social smiles. *Biological Psychology*, 65 (1), 49-66
- Skovholt, K., Grønning, A., & Kankaanranta, A. (2014). The communicative functions of emoticons in workplace emails. *Journal of Computer-Mediated Communication*, 19 (4), 780-797
- Teo, T., Ursavas, O. F., & Bahcekapili, E. (2014) Efficiency of the technology acceptance model to explain pre-service teachers' intention to use technology. Campus-Wide *Information Systems, 29* (2), 93-101
- Utz, S. (2000). Social Information Processing in MUDs: The development of friendships in virtual worlds. *Journal of Online Behavior*, 1 (1): Retrieved August 26, 2015, from http://www.behavior.net/JOB/v1n1/utz.html
- Wall, H. J., Taylor, P. J., & Campbell, C. (2016). Getting the balance right? A Mismatch in Interaction demands between Target and Judge Impacts on Judgement Accuracy for Some Traits but not Others. *Personality and Individual Differences, 88,* 66-72. doi:10.1016/j.paid.2015.08.037
- Walther, J. B. (1992). Interpersonal effects in computer-mediated interaction: A relational perspective. *Communication Research*, *19* (1), 52-90

- Walther, J. B. (2001). Virtual audiences. In T. O. Sloane (Ed.), *Encyclopedia of rhetoric*. (pp. 72-75). New York: Oxford University Press
- Walther, J. B., & D'Addario, K. P. (2001). The impacts of emoticons on message interpretation in computer-mediated communication. *Social Science Computer Review*, 19, 323-345.
- Walther, J. B., & Parks, M. R. (2002). Cues filtered out, cues filtered in: Computer-mediated communication and relationships. In M. L. Knapp & J. A. Daly (Eds.), *Handbook of interpersonal communication* (pp. 529-563). Thousand Oaks, CA: Sage
- Walther, J. B., Van Der Heide, B., Ramirez, A., Burgoon, J. K., & Peńa, J. (2015). Interpersonal and hyperpersonal dimensions of computer-mediated communication. In S. S. Sundar (Ed.), *The Handbook of the Psychology of Communication Technology*. Pondicherry. India: John Wiley and Sons
- Wolf, A. (2004). Emotional expression online: Gender differences in emoticon usage. CyberPsychology & Behavior, 3 (5), 827-833. doi:10.1089/10949310050191809
- Xu, L., Yi, C., & Xu, Y. (2007). Emotional expression online: The impact of task, relationship and personality perception on emoticon usage in Instant Messenger. Proceedings of Pacific ASIA Conference on Information Systems 2007. Retrieved October 21, 2015, from

http://aisel.aisnet.org/pacis2007/79/?utm_source=aisel.aisnet.org%2Fpacis2007%2F7 9&utm_medium=PDF&utm_campaign=PDFCoverPages