


Reply Speed as Nonverbal Cue in Text Messaging with a Read Receipt Display Function: Effects of Messaging Dependency on Times until Negative Emotions Occur While Waiting for a Reply

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ABSTRACT

In text messaging via mobile devices, many users face pressure to rapidly exchange messages. This study investigates reply speeds in smartphone messaging, focusing on messaging with a read receipt function, which notifies the sender of whether the recipient has read a sent message. Using a questionnaire targeting 213 female college students in Japan, we investigate the time until negative emotions (sadness, anxiety, anger and guilt) which occur while waiting for a reply. The authors also address factors of messaging dependency, and find that negative emotions arise in significantly less time when waiting for a reply to a read message than an unread one. Further, most negative emotions occur significantly earlier in high-dependency groups than in low-dependency groups when waiting for a reply in either status. These effects differed in part depending on the type of emotion and recipient. The authors discuss these findings in the context of reply speed as a nonverbal cue.

KEYWORDS

Emotion, Nonverbal Cue, Read Receipt Function, Reply Speed, Text Messaging, Text-Messaging Dependency

INTRODUCTION

Elimination of temporal and spatial restrictions is one of the revolutionary advantages of computer-mediated communication (CMC). Indeed, by using the Internet, people can communicate anytime, anywhere. Especially in text-based asynchronous forms of communication, such as emails and electronic message boards, users can communicate at their convenience (Katz & Aakhus, 2002; Tyler & Tang, 2003). However, this freedom from temporal restrictions, one of the two restrictions relieved by CMC, is reduced by the recent advent of messaging. Expansion of communication devices from PCs to mobile phones and smartphones has greatly contributed to this. For example, people looking at their phones while walking are now a common sight on the street and in train stations (Pešić, Antić, Glavić, & Milenković, 2016; Lamberg, & Muratori, 2012). Although they do so for a variety of reasons, it seems that many are texting while walking in order to quickly reply to received messages (Lim, Amado, Sheehan, & Van Emmerik, 2015; Schwebel, McClure, & Porter, 2017). In

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text-messaging with mobile phones and smartphones, many users face pressures to rapidly reply (Kato & Kato, 2015). However, there are few studies on response speeds required for text-based interaction. To clarify demands for rapid response in text messaging, this study investigates reply speeds in messaging via smartphone from the viewpoint of time until negative emotions arise while waiting for a reply.

Text Messaging Used on Smartphone

Smartphone apps offer various functions, one of which is social media. Social media use on smartphones is a means of daily communication that is particularly popular with young people today. Some social media have text-messaging services. One of the most used messaging apps in the world is WhatsApp, with 1.2 billion users as of January 2017 (Statista, 2017d). WhatsApp, which developed in the US in 2009, is especially popular in Europe, North America, South America, and Southeast Asia (Ahad & Lim, 2014; Church & Oliveira, 2013). Facebook, which reportedly had 1.94 billion users in the first quarter of 2017 (Statista, 2017b), has an associated messaging application called Facebook Messenger. The number of Messenger users in April 2017 was 1.2 billion (Statista, 2017a), tying it with the number of WhatsApp users. The most popular messaging application for young people in Japan—the target of this study—is LINE (Ministry of Internal Affairs and Communications, 2016), a social media messaging app developed in Japan in 2011. In the fourth quarter of 2016, there were 217 million LINE users worldwide, mainly in Japan, Thailand, and Taiwan (Statista, 2017c). LINE functions are nearly the same as those of Facebook Messenger. Messaging apps like these are rapidly replacing traditional mobile phone email as the preferred mode of daily text-based communication (Faulkner & Culwin, 2005; Skierkowski & Wood, 2012).

In text-based communication such as conventional email, it goes without saying that there is no interaction while a message sender waits for a reply. However, messaging apps such as Facebook Messenger and LINE have read receipt functions, which notify senders when recipients have read a sent message, allowing senders to know that recipients have read the message before any reply arrives (Kato, 2016). In such exchanges, many senders will be concerned not only about the time spent waiting for a reply, but also the time until the read receipt appears (Kato, 2016). For example, the sender may suspect that the recipient is ignoring the message if the read receipt is not displayed after an extended time (“ignored unread”), or if no reply is received long after the read receipt has been displayed (“ignored read”). Conversely, recipients may worry about being misunderstood if messages are left in an “ignored unread” state when messages cannot be read immediately, or of “ignored read” states when unable to immediately reply to read messages. We hypothesize that read receipt functions are deeply associated with interaction speed. In this study, therefore, we focus on relations between this display function, which does not exist in conventional mobile phone email, and requirements for response speed.

Novel Nonverbal Cues in Text-Messaging

Early studies of Internet-related psychology cited a lack of nonverbal cues and visual anonymity as characteristics of text-based communication on PCs (Joinson, 2001). A number of studies on CMC have discussed these characteristics of text-based CMC exchanges, in terms of the absence of facial expressions and gestures like those involved in face-to-face conversation, and the absence of nonverbal cues such as tone of voice (e.g., Kiesler, Siegel, & McGuire, 1984). These characteristics form the basis of various models and theories in CMC research conducted prior to the 1990s. For example, the social presence model posited that when media conveys little nonverbal information, the sense of the other party as an actual person becomes less distinct, resulting in cold, impersonal communication (Short, Williams, & Christie, 1976). In media selection, media richness theory recommended using rich media that can transmit sufficient information for unequivocal communication (Daft & Lengel, 1984; Daft & Lengel, 1986). However, subsequent CMC studies have shown many examples of socioemotional communication that can deepen personal relationships, even in text

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