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ICT mediated rumor beliefs and resulting user actions during a community crisis☆,☆☆

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ABSTRACT

In the context of Internet and Communications Technology (ICT), this research investigates the acceptance of hate rumor and its consequence during a community crisis situation. Extending prior rumor research for this context, we develop and test a refined model using data collected from victims of a large scale (hate) rumor spread incident. Our data analyses present three main findings. First, during the crisis situation, platform characteristics of media synchronicity and richness of expression affected the likelihood of rumor recipients believing the false rumor to be a true message. Second, rumors received from people with closer social ties were more likely to be believed as true. Third, rumor belief during the crisis was associated with greater intensity of informational and behavioral actions. Our findings provide governments with insights to mitigate the spread of hate rumor especially under community disaster situations. Implications for research and policy are discussed. This paper contributes to the IS literature on rumor theory and its implications by explaining how diverse communication technologies are used in a community crisis, thereby opening new avenue for future research to address the negative consequences of using communication media in the complex ICT mediated world. It shows how media characteristics along with social ties affect the "politics of plausibility".

1. Introduction

Recent events have repeatedly shown that the informational and behavioral responses of citizens to hate rumors have significant impacts on the population and hence on governments. For example, in Ferguson, Missouri, U.S., public prosecutor Robert McCulloch stated (Cushing, 2014):

"On August 9, Michael Brown was shot and killed by police officer Darren Wilson. Within minutes, various accounts of the incident began appearing on social media — accounts filled with speculation and little, if any, solid, accurate information … Following close behind were the nonstop rumors on social media. I recognize the lack of accurate detail surrounding the shooting frustrates the media and the general public and helps breed suspicion among those already stressed out by the system."

The negative effects of rumors as a form of false information are well documented in the literature of crisis communications (Burrell, 2013; Danzig, Thayer, & Galanter, 1958; Esposito & Rosnow, 1983; Scanlon, 1977). The capability of managing harmful rumors is imperative to mitigate unanticipated community problems (Rosnow, 1991; Rosnow and Fine, 1976), and the capability becomes increasingly important in today's hyper-connected information society. Recognizing the negative impact of false rumors on crisis management activities, the US Federal Emergency Management Agency (FEMA) has begun to operate rumor control systems to refute false rumors that spread rapidly especially under crisis situations.[1] However, the response of citizens to hate rumors is relatively unstudied in the research literature.

This paper examines the largely unexplored dark side of Information and Communications technology (ICT) in terms of its impacts on rumor belief and subsequent actions at the social level. We theoretically explicate the technological cues of communication media that can affect rumor belief and dissemination. Different from previous rumor research

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[1] http://www.fema.gov/disaster/4117/updates/oklahoma-tornado-rumor-control (Accessed on May 1, 2017).

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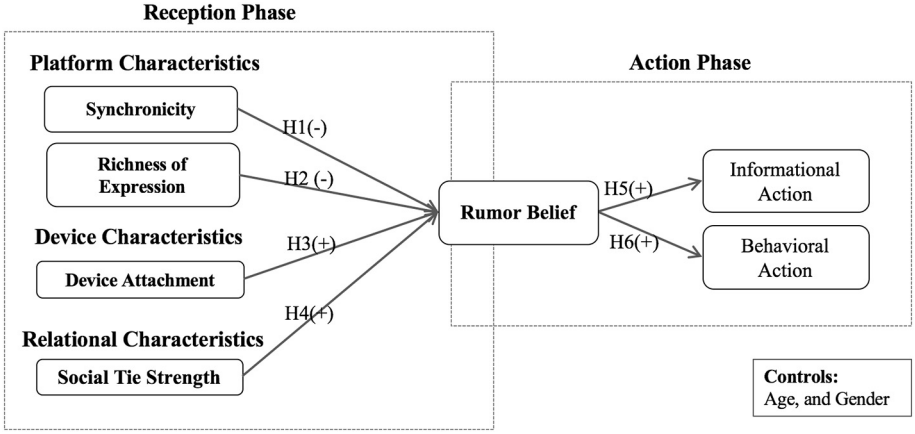

Fig. 1. Conceptual model of the reception and action phases.

that has focused on explaining rumor generation and diffusion mechanisms, we broaden the investigation by measuring the behavioral effects of rumor dissemination on a community targeted by a hate rumor. For this research, we analyzed a unique dataset collected from a real hate rumor spread incident, which engendered the mass exodus of over 15,000 people of a specific ethnic group from the relatively peaceful and highly connected technological city of Bangalore in India in 2012.[2]

This paper contributes to our pressing need to understand the complete life cycle of events (message reception, acceptance and action) in response to a concerted malicious effort to use social media for large-scale disruptions in the population. Unlike much prior research which largely uses perceptual data, in this paper we use data from an affected population, thereby examining actual behaviors, not just perceptions. The focus on the properties of the ICTs and communication channels, allows us to understand how the new communication technologies influence acceptance and response to large scale hate rumors.

In this paper we consider rumor impacts in two phases – a reception phase and a response (or action) phase. The reception phase examines the impacts of media characteristics on rumor belief and the response phase examines the impact of rumor belief on the informational and behavioral actions taken by the rumor recipients. In our two-phase model, the reception phase draws from the MAIN model (Sundar, 2008) and the response phase draws from the extended parallel processing model (EPPM) (Popova, 2012; Witte, 1994).

The MAIN model identifies four technological affordances with significant psychological effects on information acceptance – modality, agency, interactivity and navigability. Its key point is that each of these affordances can convey a variety of cues, which can lead to various cognitive heuristics influencing the credibility assessment of received information (Sundar, 2008). The MAIN model allows explication of the way online users interact with these affordances to drive information acceptance. Accordingly, we draw upon the MAIN model for the reception phase, to explicate the conditions under which online citizens accept false rumor messages as true in a crisis situation.

For the response phase, drawing upon the extended parallel processing model (EPPM), we examine how hate rumor belief generates informational and the behavioral consequences in the target community. EPPM is a well-studied theory to explain the conditions under which fear appeals succeed in generating behavioral responses (Popova, 2012; Witte, 1994). The EPPM treats the cognitive and emotional responses, activated by a fear appeal, as parallel processes, and presents determinants of the different reactions to a fear appeal. This is a useful foundation for our research, which examines the impact of rumor belief on responses. Together, the two phases provide a parsimonious foundation to examine the impacts of rumors disseminated by ICTs.

A significant contribution of this study lies in the measurement of the behavioral consequence of rumor belief under crisis situation. Whereas prior research has generally examined behavioral intentions as a result of information reception in hypothetical situations (Westerman, Spence, & Lachlan, 2009), our study examines behavioral actions taken in response to received rumors in a real community crisis situation. Extending previous rumor research, we demonstrate the relevance of rumor belief as a trigger of extreme collective informational (rumor spreading) and behavioral (safety-seeking) consequences. First, we confirm that people who believe hate rumors as true messages tend to more actively forward the received rumors to others. Second, we find that people who believe the hate rumors as true messages tend to take extreme actions (e.g., rush to leave their own community) rather than mild or moderate actions (e.g., check safety of their acquaintances or stay at home without going outside). Indeed, these findings help us explain why uncontrolled safety-seeking behaviors, prompted by belief in false rumors, led to the chaotic collective behavior of the 2012 mass-exodus in India.

2. Theoretical background and hypotheses

While the mechanisms of rumor generation and diffusion have been well studied, the role of ICTs in rumor transmission has only recently begun to gain attention (Oh, Agrawal, & Rao, 2010; Oh, Agrawal, & Rao, 2013; Oh, Eom, & Rao, 2015). Considering that communication media influence the way messages are packaged, we argue that, in addition to the message content itself, characteristics of message-carrying ICT media also influence the way people perceive the received rumor message. This argument is in line with the inquiry on the material condition of messages that "lead audiences to provisional acceptance of a preferred claim and the possibility of further transmission or action" (Fine, 2009, p186). Specifically, in the context of a community crisis, our inquiry is to understand how the cues expressed by ICT media affect the way online citizens perceive unverified information and how it can bring about various behavioral effects in physical space (Oh et al., 2015; Walther & Parks, 2002).

As depicted in Fig. 1 below, our theoretical model divides rumor response into two phases: reception phase and action/response phase. The reception phase explores the antecedents that drive rumor recipients to believe a false rumor as a trustful message. To explore the antecedents, we pay special attention to the characteristics of message-carrying media that might affect the rumor belief and also theorize the effects of social ties (Sundar, 2008). Hypotheses for the reception phase (i.e., H1, H2, H3, and H4) are built on the basis of rumor theory (Allport & Postman, 1947; Bordia & DiFonzo, 2004; Festinger, 1962; Shibutani,

[2] http://www.bbc.co.uk/news/world-asia-india-19292570 (Accessed May 1, 2017).