Community Intelligence and Social Media Services: A Rumor Theoretic Analysis of Tweets During Social Crises

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Abstract

Recent extreme events show that Twitter, a micro-blogging service, is emerging as the dominant social reporting tool to spread information on social crises. It is elevating the online public community to the status of first responders who can collectively cope with social crises. However, at the same time, many warnings have been raised about the reliability of community intelligence obtained through social reporting by the amateur online community. Using rumor theory, this paper studies citizen-driven information processing through Twitter services using data from three social crises: the Mumbai terrorist attacks in 2008, the Toyota recall in 2010, and the Seattle cafe shooting incident in 2012. We approach social crises as communal efforts for community intelligence gathering and collective information processing to cope with and adapt to uncertain external situations. We explore two issues: (1) collective social reporting as an information processing mechanism to address crisis problems and gather community intelligence, and (2) the degeneration of social reporting into collective rumor mills. Our analysis reveals that information with no clear source provided was the most important, personal involvement the next most important, and anxiety the least, yet still important, rumor causing factor on Twitter under social crisis situations.

Keywords: Twitter, social reporting, social information processing, rumor theory, social crisis, extreme events, community intelligence