Crowdsourcing Investigations: Crowd Participation in Identifying the Bomb and Bomber from the Boston Marathon Bombing

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ABSTRACT

In this paper the authors illustrate the ethical dilemmas that arise when large public investigations in a crisis are crowdsourced. The authors focus the variations in public opinion concerning the actions of two online groups during the immediate aftermath of the Boston Marathon Bombing. These groups collected and organized relief for victims, collected photos and videos taken of the bombing scene and created online mechanisms for the sharing and analysis of images collected online. They also used their large numbers and the affordances of the Internet to produce an answer to the question, “who was the perpetrator; and what kind of bomb was used?” The authors view their actions through public opinion, through sampling Twitter and applying a sentiment analysis to this data. They use this tool to pinpoint moments during the crisis investigation when the public became either more positively or negatively inclined toward the actions of the online publics. The authors use this as a surrogate, or proxy, for social approval or disapproval of their actions, which exposes large swings in public emotion as ethical lines are crossed by online publics.

Keywords: Boston Marathon Bombing, Crowdsourcing, Ethical Participation, First Responders, Social Responsibility, Twitter

INTRODUCTION

The purpose of this paper is twofold. First, we illustrate the ethical dilemmas that arise when large public investigations in a crisis are crowdsourced. We do this by highlighting the case of the bombing of the Boston Marathon in April 2013. Secondly, we employ a new tool, sentiment analysis of social media data, to bring these ethical dilemmas to light. We use this tool to pinpoint moments during the crisis investigation when the public became either more positively or negatively inclined toward the actions of the online publics. We use this as a surrogate, or proxy, for social approval or disapproval of their actions, which exposes large swings in public emotion as ethical lines are crossed by online publics.

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Much discussion has been made about the potential value of bystander data contributions via social media to police and emergency responders (Palen, 2008; Starbird, 2010; Rizza, et al. 2012). Social media has allowed an unprecedented level of participation in crisis response and crime scene investigation, which helps facilitate the capturing and sharing of information, videos, and photos between officials, bystanders and interested parties.

What are missing or under-reported in this discussion are the questions of ethical behavior in investigations; media, as truth mediators; and social responsibility. We note the powerful role the traditional national and international media have adopted for themselves as arbiters of truth as they filter the products of these online discussions, then feed the results to the national stage. In addition, this online discussion, intervention, and action have had significant real-world implications that demand socially responsible, careful, considered action for future emergency responders. The participants, both bystander and media, are participating in a policing investigation without the same training, constraints or awareness as officials have; however, despite that lack of training, these participants perhaps have more power and reach than official responders can obtain.

Our case study comes from the immediate aftermath of the Boston Marathon Bombing. We focus on the actions of two online groups, Reddit and Anonymous. These groups collected and organized relief for victims, collected photos and videos taken of the bombing scene and created online mechanisms for the analysis of images collected online (Stableford, 2013; Abad-Santos, 2013). Both groups created online mechanisms to share and analyze the data collected. They also used their large numbers and the affordances of the Internet to produce an answer to the question, “who was the perpetrator, and what kind of bomb was used?” The actions of these two groups were very much in the public eye, and made more so by the focus of the FBI and the national media on the first “crowdsourced investigation.” Because these groups engaged in amassing data, marking-up the data, and proceeding to identify the potential perpetrators, we can now view their actions through public opinion. We do this through sampling Twitter and applying a sentiment analysis to this data. This window into public opinion can be seen as taking snapshots in time of the approval and disapproval of the actions taken by these online groups. We treat this disapproval as a measurement for crossing moral or ethical boundaries.

In the remainder of this paper, we will present a short summary of the events surrounding the bombing of the Boston Marathon and of the investigation. We present a review of literatures concerning the role of social media and crowdsourcing in crisis response, and of bystanders in policing investigations. We present our dataset collected from Twitter and the tool we applied to it. We end with our findings, which include the exposure of moments of ethical challenges during these investigations, and a discussion of the pressure and implications of these challenges.

**CONTEXT: THE BOSTON BOMBING AND CROWDSOURCING TRENDS**

On Monday, April 15, 2013, at 2:49 PM, the Boston Marathon was abruptly terminated when two bombs exploded 210 yards (190 m) from the finish line. These bombs killed three people and injured an estimated 264 others (Kotz, 2013). At least 14 people required amputations as a direct result of the blasts. Police, following emergency plans, diverted the remaining runners away from the finish line to Boston Common and Kenmore Square (LaGronne, 2013). The Massachusetts Emergency Management Agency suggested people trying to contact those in the vicinity use text messaging, instead of voice calls, because of crowded cellphone lines. Cellphone service in Boston was congested, but remained in operation, despite some local media reports stating that cell service was shut down to prevent cell phones from being used as detonators (Waldman, 2013). Within hours of the initial event, the FBI called for bystanders to share images.
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