



## Full length article

## Self-correcting mechanisms and echo-effects in social media: An analysis of the “gunman in the newsroom” crisis

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## ABSTRACT

The positive and negative effects of social media in crises are currently receiving an increased amount of scholarly attention. This study focuses on Twitter users in the context of a crisis in the Netherlands on January 29, 2015. After having made a bomb threat, an armed man managed to get access to the national news broadcasting station around 8 pm, where he demanded airplay to share “an important message” with Dutch citizens. Three weeks after the terrorist attack on Charlie Hebdo in Paris, approximately 1.5 million viewers were anxious that a similar attack was taking place in the television studio. The crisis, also followed by social media users, reached a climax when armed policemen arrested the man, which was later shown on national TV. We analyzed 58,931 tweets, posted in the six hours after the incident. By examining shared facts and rumors during the gunman crisis, we identified an “echo-effect”: the dissemination of older tweets continued after the posting of new facts by the same source. Moreover, we found that two rumors were based on misinterpreted humor in Twitter messages. The study adds insight into the self-correcting mechanism of social media communities when verifying and dispelling online rumors during crises.

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## 1. Introduction

The emergence of social media over the last decade has enormous potential to influence information-sharing within societies worldwide. The amount of information that is being shared through social media has increased and is being shared at a pace and a scale that until recently was difficult to imagine. Little is known about the function of social media in crises (Binder, 2012). According to Alexander social media are used in seven ways: listening to public debate; monitoring situations; extending emergency response and management; crowd-sourcing and collaborative development; creating cohesion; furthering causes (including charitable donations); enhancing research (Alexander, 2014). Alexander has also highlighted two potential negative side effects of social media. They can, on the one hand, undermine

authority and promote terrorist acts, and, on the other hand, disseminate rumors. It is the dissemination of rumors that plays a key role in the current study based on social media traffic during the “gunman in the newsroom crisis” in the Netherlands (hereafter “gunman crisis”).

So far, much of the evidence-based work on crisis communications is based on Coombs' crisis response strategies which protect an organization's reputation during a crisis, represented by what it says and does when a crisis has occurred (Coombs, 2004). This line of reasoning has also been adopted with regard to social media (Ki & Nekmat, 2014; Snoeijers, Poels, & Nicolay, 2014). However, where communication efforts can be described in terms of “webcare” and brand reputation, some crisis situations can be regarded as crises where authorities have other communication goals than image repair alone (Jong, Dückers, & van der Velden, 2016). Research about how social media evolve in the lifecycle of a crisis is scarce (Pang & Ng, 2016). In order to gain a better understanding of the extent to which authorities can exert more or less influence on social media communication, it is necessary to gain insight into the communication mechanisms of online communities during

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particular events.

### 1.1. The gunman crisis

In the Netherlands there are currently (2015) approximately 1 million daily Twitter users. In this study, we analyzed the tweets in messages sent on the Twitter network about a crisis situation in the Netherlands on the evening of January 29, 2015. On that day, a man wielding a fake gun entered the studio of the Dutch public news broadcasting station NOS. The situation caused the main evening bulletins to be canceled. The man, smartly dressed and carrying what appeared to be a long pistol, paced around a studio, demanding airtime. Armed police stormed into the studio and overpowered him.

During the disruption, the TV channel did not broadcast the regular evening news. As such, Twitter users were wondering what had caused the disruption, as the TV news had not been disrupted since 1961. Three weeks after the attack on Charlie Hebdo in Paris, viewers were anxious that a similar attack was taking place in the television studio. The situation in the television studio was intensively discussed on Twitter, which functioned as a “second screen” for many viewers in the Netherlands. In the hours after the incident, two rumors were persistent on the social network. The first rumor was that an identical situation took place in Belgium, involving the evening news broadcast by the Flemish Radio- and Television Network Organization (VRT). When the identity of the gunman became known on Twitter, a second rumor started to develop, suggesting that both his parents were allegedly killed in the MH17 tragedy; an airplane crash in the Ukraine in July 2014 with 298 casualties. Both rumors turned out not to be true.

We will explore the use of Twitter as a social medium during the disruption in The Netherlands. This type of analysis is welcome as the development of theoretical considerations is still meager in this area of research (Takahashi, Tandoc Jr, & Carmichael, 2015) and in order to validate earlier research (Groenendaal, De Bas, & Helsloot, 2013). Internationally, Twitter is a widely used social media platform and is a popular second screen (Yu & Wang, 2015). Users share their real-time reactions and emotions in short tweets (Ji & Raney, 2015; Wang, 2013). Especially during crises, when the appetite for information can be regarded as high, the channel grows in use for informational purposes (Westerman, Spence, & Van Der Heide, 2014). That said, Graham, Avery, and Park (2015) found that the use of social media depends on the type of crises, and that social media were used significantly more for crisis communication during public health crises than for natural disaster, transportation, political, social, or criminal crises. The information spreads fast because it is easily shared by people tend to share the information about crises easily. On the other hand, Twitter is not only known to enable the effective broadcasting of valid news, but also of baseless rumors (Mendoza, Poblete, & Castillo, 2010). Research from the Fukushima incident in Japan tends to show that within this flow of information, false rumors that began to circulate appear to be easily corrected by knowledgeable people (Alexander, 2014). An exploration of the online behavior and rumors during the incident of January 29 might provide us with more insight into this “self-correcting”-mechanism. This will be helpful as it will broaden our scope in terms of crisis communications and the involvement of the general public during crises.

### 1.2. Objective

Our objective is to gain a better understanding of the mechanisms within social media communities in an acute crisis context. Based on this objective, we present the following research question, inspired by earlier research suggesting an important role for

traditional media channels in times of uncertainty (Binder, 2012; Utz, Schultz, & Glocka, 2013).

**RQ1.** How did “breaking news” broadcast by news agencies spread on Twitter?

Shibutani noted that in ambiguous situations, people tend to act as pragmatic problem-solvers by combining their knowledge and information—including data, bits of information from self and others, speculation, and interpretations—through careful deliberation to construct a shared understanding of the situation in question and thus allowing considered concerted action (Miller, 2005; Shibutani, 1966). As the online problem-solving might work both ways (either construct a rumor or debunk a rumor), we also ask:

**RQ2.** Regarding two rumors – concerning a similar course of events at the VRT-studio and the MH17-connection – shared on Twitter during and after the crisis, how were they constructed and were efforts taken within the Twitter community to correct and dispel myths?

In a study of 573,000 lines of pager messages during the events of September 11, 2001 (Back, Küfner, & Egloff, 2010), the authors found that words which expressed anxiety dropped soon after the events. According to them, the immediate recovery from anxiety might be explained by the lessening of uncertainty shortly after each event, as a result of the spread of information. These findings lead us to our last research question:

**RQ3.** Can we identify an online change in mood during the events on the evening of January 29?

## 2. Method

We analyzed content shared on Twitter about this incident. We collected 58,931 tweets which were posted online between 7.40 pm on January 29, 2015 and 2.00 am on January 30, 2015. Tweets were retrieved using Coosto software ([www.coosto.nl](http://www.coosto.nl)), a widely used tool suited to webcare and qualitative online data analysis. The software enabled us to export the tweets captured by using keywords in any given period. Tweets were searched and collected based on the following keywords, not necessarily hashtags: NOS (the name of the public broadcasting station), gijzeling (kidnapping), as well as keywords referring to rumors, the kidnapper, his arrest and/or his background. As the crisis can be considered a “developing story”, new keywords (such as the name, residence and education of the gunman) became relevant as new facts became known to the public. We could capture a massive set of 58,931 tweets from 29,165 individual users (a convenience sample) and used it to explore the Twitter stream during the gunman crisis. Regarding two of the rumors we found in our database, we contacted the Twitter users who posted influential messages. A complete list of all the identified tweets (in Dutch) can be obtained from the first author.

In the sample, we distinguish tweets, retweets and mentions. A tweet is an original remark posted online by a Twitter user. A retweet is similar to a tweet, but consists of a message from a person (user I), which has been copied and resent by another Twitter user (user II). From the 58,931 tweets we retrieved, almost 64.9% can be regarded as retweets (38,248). Both tweets and retweets can be read by all followers in a Twitter timeline. Mentions are messages which start with an “@” and are targeted at a specific user. When “user A” posts a Twitter message starting with “@userB”, only the followers of both user A and user B find this interaction in their timeline. In our database, 2,044 tweets are

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