November 2015 Paris Terrorist Attacks and Social Media Use: Preliminary Findings from Authorities, Critical Infrastructure Operators and Journalists

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ABSTRACT

Crisis communication is a key component of an effective emergency response. Social media has evolved as a prominent crisis communication tool. This paper reports how social media was used by authorities, critical infrastructure operators and journalists during the terrorist attacks that hit Paris on 13th November 2015. A qualitative study was conducted between January and February 2017 employing semi-structured interviews with seven relevant stakeholders involved in this communication process. The preliminary critical thematic analysis revealed four main themes which are reported in the results section: (1) social media is used in crisis times; (2) authorities gained situational awareness via social media; (3) citizens used social media to help one another; and (4) communication procedures changed after these critical events. In conclusion, authorities, citizens and journalists all turned to social media during the attack, both for crisis communication and for increasing situational awareness.

Keywords

Social media, crisis communication, situational awareness, Paris terrorist attacks, terrorism.

INTRODUCTION

On the night of Friday 13th November 2015, Islamic State in Iraq and Syria (ISIS) gunmen and suicide bombers attacked almost simultaneously a major stadium, restaurants and bars, and a concert hall in Paris. The atrocities left 130 people dead and 368 wounded. The first of three explosions occurred outside the Stade de France stadium on the northern fringe of Paris where the national football teams of France and Germany were playing a

friendly match. A man wearing a suicide belt was reportedly prevented from entering the stadium after a routine security check detected the explosives. The man backed away from security guards and detonated the explosives. The game, attended by then President François Hollande, was being broadcast on television. After a second man detonated his suicide vest outside a different stadium entrance at 21:30, the president was rushed to safety. A third suicide bomber blew himself up at a fast-food outlet near the stadium at 21:53. The attackers all wore identical explosive vests. Meanwhile, other attacks were unfolding nearer to the centre of town around popular nightlife spots. The first took place at about 21:25 in the 10th district, not far from the Place de la Republique, where driveby shootings aimed at people sitting on restaurant terraces occurred. Then, three heavily armed gunmen broke into the Bataclan, a concert venue, during a rock group performance at 21:40. They killed 90 people at the venue and critically injured many others. A map of the events is presented in Figure 1. (BBC, 2015).

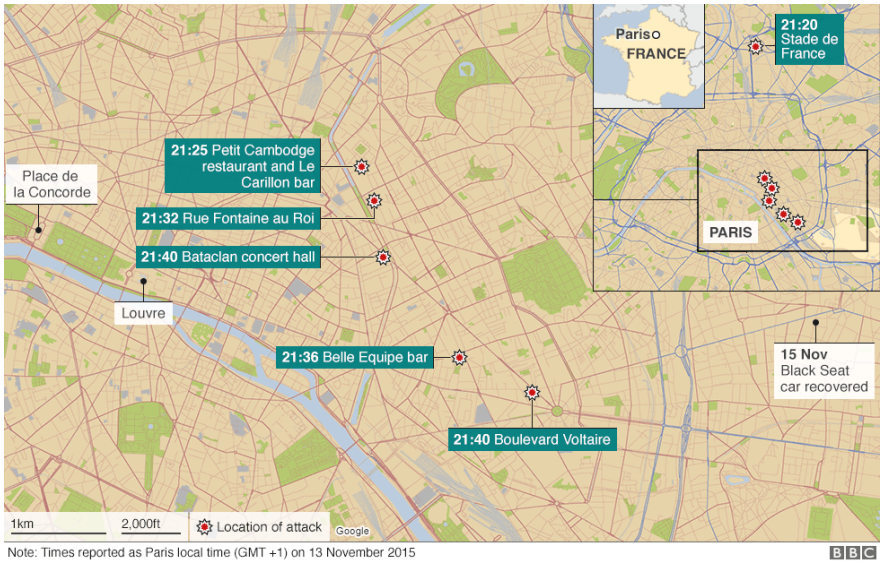

Figure 1 Map of the Paris Terrorist Attacks from the BBC (http://www.bbc.co.uk/news/world-europe-34818994)

Responses to the attacks happened in real time on social media platforms, especially Twitter. Authorities, citizens and journalists all turned to social media during the event. The French National Audio-visual Institute (INA), which is one of two French bodies that have the legal authority and responsibility to archive the Internet, started an emergency collect, amassing 11 million URLs and, starting at 23:00, over 20 million tweets with related hashtags (Shaefer, 2016). For the 13th of November, there is no main hashtag as had been the case for previous events and several are used: #parisattacks #paris #bataclan #fusillade #prayforparis #porteouverte #jesuisparis #FluctuatNecMergitur #NousSommesUnis, among others (Truc, 2016). Sense making for the attacks appears to happen on social media instead of on live TV, as was the case for previous terrorist attacks. This could be due to the fact that some of the events, like for example the drive by shootings, were first reported on Twitter. Furthermore, the French emergency phone lines were quickly overwhelmed by the number of callers, and so citizens turned to social media to communicate.

Paris firefighters (@PompiersParis) also used social media, for example to encourage people to only call the authorities if there is a real need in order to avoid saturating the network as seen in this tweet (Figure 2). The city of Paris (@Paris) published on their Twitter information pertaining to the shooting (Figure 2), and in the early hours of the morning changed their background and profile picture to black to demonstrate mourning (Leclere, 2015).

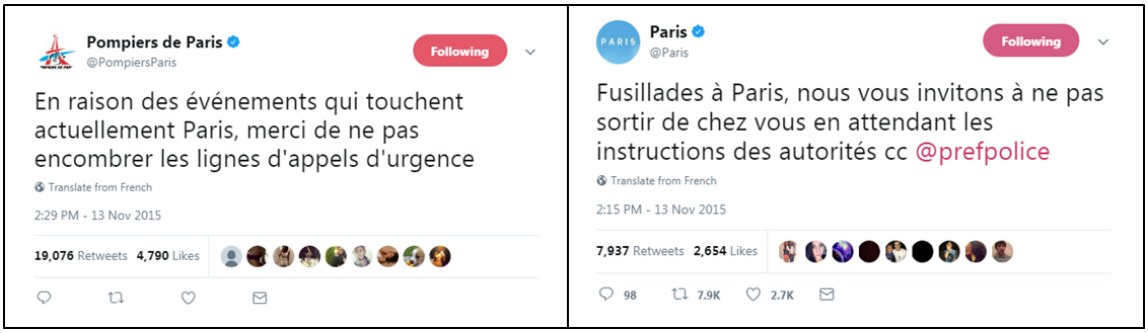

Figure 2 Tweets from Parisian Firefighters and the city of Paris. Translates as, on right, "Due to recent events going on in Paris, please do not saturate the emergency lines," and on left, "shootings in Paris, we invite you to stay indoors and await instructions from the authorities cc @prefpolice."

Institutions were also active on Twitter after the event, with the German government among others using #NousSommesUnis and Anne Hildalgo, the mayor of Paris, using #FluctuatNecMergitur (Truc, 2016). Following the events, institutions official Twitter accounts saw a huge increase in followers. For example, the Préfecture de police (@prefpolice) saw an increase in 200,000 followers in the week following the events (AFP, 2015). The use of Facebook during the 13 November 2015 terrorist attack has been studied less by researchers, mainly due to the more private nature of the platform. However, it was also heavily used during the attack; with 4.1 million Facebook users activating the SafetyCheck feature.

This paper aims to study how social media was used by authorities, journalists and critical infrastructure (CI) operators during the November 2015 Paris terror attacks. In order to achieve this objective, a qualitative study was conducted employing semi-structured interviews with relevant stakeholders involved in this communication process. The study was designed to reveal the in-depth processes, as well as the lessons learnt and the communication barriers during this case study. In the following part of the paper we clarify the theoretical concepts used, describe the method and the preliminary results of the qualitative analysis, and finally we discuss the main themes revealed by our analysis.

Social Media and Crisis Communication

Crisis communication is a key component of an effective emergency response. The main aims of crisis communication are to explain to the public the event and the effects, whilst also providing information to mitigate harm (Reynolds & Seeger, 2005). Information and communication technologies (ICTs) have played an increasingly prominent role in disaster information flows over the past decade (Procter et al., 2013; Simon et al., 2015). One of the main reasons for this is that compared to traditional media (television, newspaper and radio) and other means of communication (telephone landlines, face-to-face) the use of the Internet and social media allows easy and instantaneous access to real time information (Bossu et al., 2018; Reuter & Spielhofer, 2017; Bossu et al., 2015; Gupta et al., 2013; Lerman & Ghosh, 2010). Furthermore, the ability of social media to push and pull information differentiates it from traditional media. Despite the potential use of these platforms to share disinformation and rumours, it is generally recognised that blue light organisations can leverage the connective affordances of social media to enhance emergency response.

Social media can also be seen as an amplifier for crisis information. Messages that are deemed useful to an online community can be retweeted or reposted by members and many official authorities retweet one another. For example, during the 2013 Westgate Mall Terror Attack in Kenya, all emergency related organisations and officials actively used Twitter to retweet one another (Simon et al., 2014). Indeed, studies have shown that repetition of crisis information via different channels is more likely to both reach a wider audience and convince people to take appropriate action to protect themselves and their communities from harm (Tierney, 2009; New Zealand, the Ministry of Civil Defense & Emergency Management, 2010; Stephens et al., 2013).

There is already significant evidence that citizens are turning to the social media channels of emergency services to obtain information during crisis situations (Lindsay, 2011). The authorities are responding to the public's expectation that they use social media to disseminate crisis information, and many official guidelines[1] exist. Indeed, when surveying emergency services, Reuter and Spielhofer (2017) found that 60% of respondents felt

[1] See for example, Belgium Federal Interior Minister White Paper (http://centredecrise.be/sites/default/files/brochure_sociale_media_fr.pdf) or the French Ministry of Interior's crisis communication kits destined for Prefectures (http://www.interieur.gouv.fr/Actualites/L-actu-du-Ministere/Votre-prefecture-presente-sur-les-reseaux-sociaux).

that social media is important for their organisation, with sharing information to the public being an important use case. During the 2013 Boston Marathon Bombing in the USA, local, State and Federal agencies successfully used Twitter to share information with the public about the hazard impact, guidance on how to protect oneself, and public safety advisories (Sutton et al., 2014).

Twitter in particular has also been increasingly used by emergency managers as a tool for crowdsourcing crisis information that helps build situational awareness during such incidents (Latonero and Shvlovski, 2010; Potts, 2014). It was used by authorities to crowdsource information about the identity and whereabouts of the terrorist who committed the Boston Marathon Bombing (Sutton et al., 2014) and it was also used by authorities to crowdsource information related to potential hostages during the Westgate Mall Terror Attack (Simon et al., 2014). Recent studies on citizens' expectations towards infrastructure operators and crisis communication show that they expect operators to provide crisis-related information to the public via both traditional and social media (Petersen et al., 2017a, 2017b, 2017c, 2017d).

Another way citizens are finding information and authorities are providing it is via disaster applications for smart phones. Indeed, disaster related apps have multiplied over the past five years and meet the public's timely information, alert and safety tip needs (Bachmann et al., 2015). Some examples include the *LastQuake* app by the European Mediterranean Seismological Centre (EMSC) that provides real-time earthquake information based on crowdsourcing (for more, see Bossu et al., 2018), and the French government's alert app, SAIP (acronym for Public Alert and Information System), which was launched following the 13 November 2015 terrorist attacks for the 2016 UEFA European Championship.

METHOD

This study set out to add to the limited empirical data on the role of social media in the information flows that emerged during the Paris terror attacks by exploring the perspectives of key stakeholders including critical infrastructure operators, blue light organisations and journalists. Semi-structured interviews were conducted with seven relevant stakeholders between January and February 2017 in order to explore these issues. The interview guide was developed during the EU Horizon 2020 project IMPROVER (Improved risk evaluation and implementation of resilience concepts to critical infrastructure; http://improverproject.eu) and included 10 open questions. The participants were contacted by email or phone and invited to participate in this study. All interviews were conducted at the International Union of Railways Headquarters, in Paris, either face-to-face or by phone. Interviews were conducted in French and translated into English for data analysis by a certified bilingual speaker. According to the participants' availability, two different interview schedules were developed and used to explore the perspectives of CI and emergency management professionals, and journalists in relation to disaster information flows during the attacks, and how social media might be used during future such incidents. CI and emergency management professionals were also asked about how traditional and social media were used in tandem during crisis situations, what feedback is collected, and what audiences they hoped to reach using different platforms. Sylvain Lapoix (hereafter SL), the journalist widely credited with creating #PorteOuverte, was interviewed as part of the study in order to explore the inspiration behind this hashtag and how it intersected with the crisis communication strategies of other key stakeholders during the attacks. Marina Tymen (hereafter MT) works with VISOV (Volontaires Internationaux en Soutien Opérationnel Virtuel), a French VOST (virtual operations support team) association that gathered and analysed social media for the authorities during the attacks. Also interviewed were a representative from DGSCGC / COGIC (Direction générale pour la sécurité civile et la gestion des crises - general directorat for civil security and crisis management/ Le centre opérationnel de gestion interministérielle des crises - the operational centre for interministry crisis management), a representative from the Crisis Communication Unit at the Minister of Interior, a firefighter captain representing the operational side of SDIS (Service départemental d'incendie et de secours - departmental firefighting and rescue service), and a crisis communication representative of a critical infrastructure operator.

Our study focused on three research questions:

RQ1: What role did social media play in the crisis communication practices of key stakeholders during the November 2015 Paris Terrorist Attacks?

RQ2: What role did these organisations play in the creation and promotion of #PorteOuverte?

RQ3: How, if at all, did procedures change following the Attacks?

Ethics approval was sought and obtained from the host institution prior to data being collected and it was agreed that those participants who wished to remain anonymous would not be identified in subsequent publications. Themes that emerged from the data were identified and explored using the six phases of critical thematic analysis proposed by Braun and Clarke (2006). Two coders read each transcript and compared notes in order to

identify the communication practices that these interviewees believed would help build critical infrastructure resilience.

It should be acknowledged that the data presented below is based upon a self-selected sample and could not be considered representative of how every organisation involved in the response to the terrorist attacks used social media for crisis communication during this incident. However, the participants helped us build the overall picture of how social media responses emerged and developed during and immediately after the Paris terrorist attacks. They were also able to draw on their experiences of working with other organisations in order to explore the lessons that could be drawn from the attacks.

RESULTS

The critical thematic analysis revealed four themes which are presented below.

How Interviewees Use Social Media in Crisis Times

All interviewees shared that social media is used in crisis times by their organisation, to varying degrees.

The Ministry of Interior (MoI) is responsible for crisis communication with the public and the media, and for them, social media is seen as just another channel for crisis communication.

Originally, in order for social media monitoring to even be used at COGIC, one person had to, unknowingly, break the rules by creating a twitter account in order to communicate with the people stuck in the March 2013 snowstorm crisis. By doing so, this person demonstrated that the existing procedures prohibiting social media use were not compatible with the fast paced, citizen response to crisis. However, by the time of the 13th of November terrorist attacks, social media monitoring had been more or less established. COGIC does not communicate directly with the public, and instead it is the MoI that uses their social media monitoring in order to then communicate crisis information via social media (among other channels).

While in France crisis communication must come from the Préfet and other official channels, certain firefighting stations do have a social media presence. They use it not only to promote prevention, but also to communicate about their ongoing actions. The interviewee from SDIS provided an example that certain firefighting stations might use, “Don't go in a certain zone because currently we are there on the ground intervening.” SDIS does not have official social media accounts. While they also try to keep an eye on social media, their strategy is always to intervene first, and check social media after. The official stance of both the MoI and firefighters is to encourage the public to continue to use the emergency number 18 to contact the authorities. However, the interviewees recognized that if people can’t get through on the telephone, they will use social media and are already doing so.

MT explained that while VISOV has a twitter account, when something happens they “are the last to share the information,” choosing instead to perform social media monitoring expressly for the authorities; “[our work] is not aimed to go public, because we do our work, let's say, in a private way, to go to the authorities first.” As explained by MT, “We do have a sort of methodology. But one must also tell people to not just look at Twitter and Facebook. That there are also Instagram, YouTube, Dailymotion. One must also try to see what is happening elsewhere.” They use Google sheets to document the social media messages. There, they put the name of the person who found the information, from where and at what time they accessed the information, what the information consists of (if there is a photo, what it looks like, etc.), and whether or not the information appears credible. As information on social media evolves very quickly and may become invisible (i.e. deleted) equally fast, the methodology insists on traceability. When they do use Twitter for crisis communication, they use it to amplify official channels by retweeting.

The interviewee representing the critical infrastructure operator shared that their crisis communication team also uses social media, especially Twitter, to communicate about ongoing events. “There really is, just by how things are, a crisis management system that is really well developed, able to be used at all times, and that relies on social media on the one hand to listen and also to spread information, because… [people] need information and that we understand.”

SL hadn’t used Twitter for crisis communication before the 13th of November attacks, but upon seeing some of the reactions on social media, decided to take action on Twitter and share best practices. “So I started a series of tweets… trying to bring something resembling reasonable precaution to the situation that was completely absurd and unusual… typically, don't expose yourself to danger, stay inside rather than going outside… Stuff that comes from, well I wouldn't say common sense but more from the basis of rescue services…The basics.” This also led him to the creation of the #PorteOuverte hashtag, which will be discussed in more detail later on.

How Situational Awareness Was Gained for Authorities via Social Media

The interview analysis revealed how the authorities work together with VISOV to increase situational awareness during crisis events, including the 13th of November terrorist attacks. The head of COGIC asked the interviewee from COGIC if he could find information on social media about what was going on, as well as if it was possible to do a summary of the victims. As such, the interviewee used his personal contact with VISOV to see if they would be willing to help. While originally intended to be a group that focuses on natural disasters, the immediate human reaction of the VISOV volunteers was to also help out emergency services in the case of a terrorist attack. As the representative from VISOV explained, "The 13th November, the Friday at 21:30 we were 43 in five minutes in our WhatsApp chatroom… but it wasn't specifically in our charter to go and look where is there shooting? Where are they being shot at? etc." Thus, they decided to implement their methodology to follow the events on social media. About an hour after VISOV had started collecting social media data, the COGIC interviewee contacted them, only to discover that "they had already made a spreadsheet, line by line, minute by minute, the trustworthy information, less trustworthy, underlined in red, with question marks, is this a rumour?" But instead of simply collecting all the relevant social media posts, as did INA, VISOV does a preliminary analysis and sorts the information. "Out of the 1 million tweets from 13 November, our Google doc, after about four hours, there were only 500 tweets. Because, us, our interest is to funnel the information." According to our interviewee from COGIC, the VISOV analysis provided them with "90% of the interesting tweets." COGIC then shared the information that they had received and verified from VISOV with the Ministry of Interior.

How Citizens Used Social Media to Help One Another: #PorteOuverte

The hashtag #PorteOuverte, which means "OpenDoor" in English and was first used during this attack (and subsequently reemployed for other attacks), enabled people to either ask for a shelter if they were in an unsecured area, or offer shelter, providing it to people in the streets (McHugh, 2015). Journalist SL used his understanding of the functionality of Twitter to create the #PorteOverte hashtag in order to help people who were offering shelter and needing shelter in the wake of the terrorist attack to connect (Figure 3). In his own words, "What happened is after a bit I saw two tweets on my [Twitter] feed, just by chance on my timeline, almost one on top of the other, with just seconds between them. So the first tweet was something like, 'if you are on the street Rue de Chemin Vert, I can put you up, provide shelter'… And then just below that, but really just below, someone who said 'I'm currently at the doorway of a restaurant at Square Maurice Gardette, I am outside, can you help me?' It was something like that… And so then I told myself, well actually these two people could [help each other], well really there just wasn't any matchmaking… [I did a] tweet straight away where I said, well I no longer remember the exact words, but it was something like, 'if you are looking for or offering shelter due to the Paris attacks, add the hashtag PorteOuverte.' And that's where it all started."

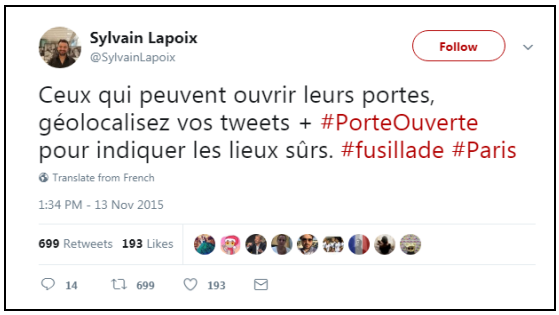

Figure 3 Tweet from Sylvain Lapoix about #PorteOuverte. Translates as: Those who can open their doors, geolocate your tweets + #OpenDoor to indicate safe places. #shooting #Paris

According to SL, there were mainly three types of users of his hashtag: retransmission or relay tweets that consisted of people recommending to use the hashtag or simply retweeting him; use-tweets that consisted of people actually using the hashtag to find/give shelter; and collective reassurance tweets that consisted of people expressing what a good idea it was. As SL said, "well it was someone who said that in such a moment, the fact to see the movement, to have something like #PorteOuverte, and to have so many people latch onto it and use it to really take action, well for him it was a light in the darkness." Furthermore, SL believes that the use tweets were in the minority, if for nothing else than out of 300,000 tweets with the hashtag, there were not 300,000 people "with their mobile phones on Twitter looking for shelter." Instead, not only was the hashtag useful to people who needed shelter, but it also provided a means to become an actor in the crisis and "pass on something positive." When asked about how the tweet became so viral, SL explained that "I just wrote the right hashtag in maybe the right quarter hour" and at first wasn't even sure if he really was the person who came up with the

idea (however this was later verified). His understanding of twitter as a journalist also helped him spread the hashtag, as he asked people with lots of followers (known as influencers) to retweet his #PorteOuverte tweet. He also insisted on Twitter as being the appropriate medium for such kind of communication among citizens, especially considering the fact that the phone lines were overwhelmed and the emergency lines were saturated. Lastly, he acknowledged that the authorities cannot be expected to ask people to potentially put themselves in a dangerous situation, as may be the case by using this hashtag, and thus it needed to come from the citizens themselves.

How Procedures Changed Following the Attacks

Following the attacks, the firefighters updated the calling system for the main emergency telephone number 18 in order to ensure redundancy and attempt to eliminate call centres being overwhelmed with callers, as was the case during the 13 November Attacks. As put by our interviewee, "the, I don't know how many, millions of calls that were lost, now they will come through, whether that be in Marseille or Toulon. And there will be someone to answer, and say, 'don't worry, we're sending people.'" SDIS is currently reviewing best practices of social media use by firefighters and hopes to be able to use social media for crisis communication shortly. Furthermore, COGIC got the authorisation to start work on a social media monitoring tool that uses keywords to detect crisis. As our interviewee put it, "Actually, it's been four years that I've been asking for this tool and we had to have the 13th of November in order for us to have access to it."

The #PorteOuverte hashtag was subsequently used in following incidents of terrorist attacks, for both the Brussels and Nice Attacks. As SL said, "today, when we see a situation where people are stuck in an unusual and dangerous situation elsewhere than where they are from and they don't have any resources…well, we've seen that some people have relaunched #PorteOuverte." When asked about the future use of the hashtag, MT explained "It's part of history now." While citizens have continued to use the hashtag, according to SL there remains a personification of the hashtag. "During Nice [someone] sent me a message saying, 'go go go Sylvain!' … So in other words, my position as an influencer was still expected."

The interviewee from the MoI brought up the SAIP app, which was created following the attacks and is supposed to send alerts notifications on all smartphones on which the app is currently running. While there have been some critiques of the app (especially following the 14th of July 2016 Nice terrorist attack where the alert was sent out very late) (Fallou, 2017), the MoI representative informed us that "we have had a peak of downloads that was higher than the uninstalls after the events."

DISCUSION AND CONCLUSION

This study investigated the perspectives of CI and emergency management professionals, and journalists in relation to disaster information flows during the 13 November Paris terrorist attacks, and explored how social media might be better used during future such incidents.

Our analysis revealed that authorities, citizens and journalists all turned to social media during the 13th November 2015 Paris terrorist attacks, both for crisis communication and for increasing situational awareness via monitoring. Authorities such as the Prefecture of Police, the Paris firefighters and the city of Paris used social media for crisis communication, as did the Ministry of Interior. COGIC partnered with VISOV in order to do social media monitoring of the events, increasing situational awareness and sharing this information with the Ministry of Interior. Journalist Sylvain Lapoix used his knowledge of social media in order to create the #PorteOuverte hashtag, which enabled citizens offering shelter and needing shelter to connect. The fact that the hashtag propagated so quickly could be explained not only by its usefulness, but also by its positive nature. Indeed, most tweets with #PorteOuverte were not use-tweets, and previous research about the 2013 Woolwich, London terrorist attack found that members of the public using twitter chose to mostly distribute positive and supporting content (Burnap et al., 2014). While the hashtag was not promoted by authorities, SL pointed out that as the hashtag could potentially lead citizens to danger, the authorities couldn't endorse it. However, he was critical of the fact that the hashtag was not promoted by the media during the events (and only afterwards was it talked about as a 'phenomenon'). That said, the media engagement with the hashtag as a phenomenon could explain why it remained in collective memory and was reemployed in subsequent terror attacks. More research is needed to confirm this. Since the attack, interviewees have changed their procedures in order to better respond to any future crisis.

While social media was heavily used during the 13th November attacks, a recent survey by the French Research Institute for the Study and Monitoring of Living Standards (CREDOC) found that only 6% of respondents found out about the events via social media, compared to 81% via traditional media (Ory, 2017). One explanation for this finding might relate to the large television audience for the international football friendly being played at the

Stade de France that evening (an estimated 5.75 million people were said to be watching). Moreover, according to the Standard Eurobarometer 84 survey, radio and television remain the most popular and trusted media in France, with 100 percent of participants stating they had access to at least one television set. That said, studies show that people tend to use a combination of both traditional and social media to obtain information about crisis situations (Petersen et al., 2017a). Thus it is important to keep in mind that social media was neither the only information source nor the only channel for crisis communication for this event.

In summary, crisis communication on the 13th of November can be seen as a matter of cooperation between different types of actors, who have different means of actions and different constraints.

The results reported above have a number of limitations that should be acknowledged. Most of the limitations are inherent to the qualitative methods used. Semi-structured interviews can leave room for subjective answers and the critical thematic analysis for subjective interpretations. Furthermore, the self-selecting sample is made up of a low number of interviewees that did not include all possible stakeholders. While the findings may be relevant for recent terrorist attacks in France, they are difficult to generalize to other critical events or contexts. However, this paper does showcase the big picture of how social media was used during the Paris terrorist attacks for both crisis communication and increasing situational awareness of authorities and to the best of our knowledge is the first paper to do so. Previous research on social media use during terrorist attacks has also tended to focus on the tweets themselves instead of the perspectives of social media users and this paper attempts to help fill that gap.

Future work will continue to apply the critical thematic analysis proposed by Braun and Clarke (2006) on this corpus of data in order to analyse the latent level of the content (e.g. the underlying ideas, assumptions, and conceptualizations). Future work should also include further interviews. Other studies could further compare the results of this study with how social media was used during other critical events in France or other European terror attacks, or how social media was used in tandem with other crisis communication channels during this event.

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