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Trust-building through Social Media Communications in Disaster Management

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ABSTRACT
Social media provides a digital space – a meeting place, for different people, often representing one or more groups in a society. The use of this space during a disaster, especially where information needs are high and the availability of factually accurate and ethically sourced data is scarce, has increased substantially over the last 5-10 years. This paper attempts to address communication in social media and trust between the public and figures of authority during a natural disaster in order to suggest communication strategies that can enhance or reinforce trust between these bodies before, during and after a natural disaster.

Categories and Subject Descriptors
D.3.1 [**Formal Definitions and Theory**]; K6.1 [**Training**]

General Terms
Management; Documentation; Reliability; Human Factors; Theory.

Keywords
ll

1. INTRODUCTION
Social media provides a digital space – a meeting place, for different people, often representing one or more groups in a society. The use of this space during a disaster, especially where information needs are high and the availability of factually accurate and ethically sourced data is scarce, has increased substantially over the last 5-10 years.

Social media is becoming an integral part of disaster communication plans for emergency management agencies, and many other public and private sector enterprises. However, both the plans and social media are a novelty and as such an important topic of research and development.

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In 1998, one of the first instances of social media use in disaster management was recorded. The journalist Dube used blogging as a medium before, during and after the onset of Hurricane Bonnie. He was working according to the professional communications plan of his North Carolina-based newspaper, *The Charlotte Observer,* owned by one of the major US news-publishing conglomerate, *McLatchy Group*. Dube showed that the use of social media can provide valuable information during a crisis. This is particularly relevant when the information comes from a trusted source with an established, and perhaps trusted, media presence who can tell a story (in addition to communicating a large quantity of facts) [19]. Since Hurricane Bonnie, newer social media technologies, including Twitter, Flickr and Instagram, have been used, sometimes in an ad hoc manner, at subsequent natural disasters.

What has emerged in the last ten years is that the citizen/victim can and does provide valuable information during and after a disaster whilst authorities have failed to use the communications infrastructure effectively [5]. This two-way citizen/authority (interrupted) dialogue is critical for disaster management [20]. The dialogue is a form of communication between an often panic-stricken public and bodies of authority who need to retain order.

For us, the key purpose of the digital space is to develop confidence through bonding over time which during emergencies engenders ***trust*** between groups that have an asymmetric power relationship – between the government agencies and the citizens, or between health care organizations and actual and potential patients, to name but two key groups. Trust is engendered by the use of verbal and non-verbal modes of communications in a state of exception, say, caused by a disaster. In this state emergency managers, such as the police, have a statutory duty first to protect lives, second to protect property and third to safeguard possessions. Accordingly, the police may insist that people in a disaster zone leave their permanent place of abode to a temporary shelter. The citizen has to trust the police to abandon home and leave his or her property to a relatively unknown place, and to trust property/possessions to unknown threats such as nature or looters.

Thus, during a disaster event, where matters of life, limb and property, have to be made on the word of one person – either a disaster operative or a citizen – trust plays a key role. The political scientist, Eric Uslaner, has suggested that 'Trust solves bigger problems than getting people to hang out with people like themselves. It connects us to people with whom we *don't* hang out' [23]. Trust is linked with risk-taking and with developing relationships with unknown actors [6] [8]. Figure 1 shows the number of interacting actors involved in trust communications in

a disaster event. As the figure shows, the sense of place plays a key role.

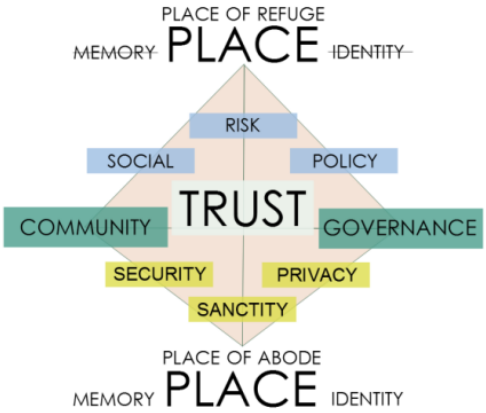

Figure 1 Graphical representation of people's relocation from a 'home' (place of abode) to a refuge during a disaster. It shows the actors and conditions to consider in communications, with an emphasis on the barrier of trust.

The establishment and development of trust is a continuous process and cannot be taken for granted. In order for trust to exist at a time of disaster, the communicator and audience must have a pre-existing relationship. This relationship is a two-way exchange between authorities and the public. Publicly generated social media content is created out of this relationship (see [4]). Many organisations use professional communications agencies to help them manage disaster communications by preparing messages, training spokespeople and coordinating communications output during a crisis (e.g., http://www.fema.gov/training-1; http://www.ready.gov/; http://www.ifrc.org/en/what-we-do/disaster-management/preparing-for-disaster/). By doing so, the communications agency helps the organisation to continuously build trust with the media, key influencers, allies, stakeholders and the general public [12].

The focus of our paper is on the communications strategies used by authority figures in the social media. We begin with three case studies based on disaster communications with a focus on trust building or lack of it. The first observes a senior government official giving a press briefing during Hurricane Sandy, which was then broadcast on both Facebook and Twitter, that was inimical to trust building (Section 2.1). The second examines aspects of how the US Federal Emergency Management Agency manages its communications via social media, and focuses on how language is used, especially when the communication is across linguistic divide (English and Spanish) (2.2). Finally, the third looks at debate and action during Hurricane Katrina (2.3). We close the paper by noting heuristics about trust-oriented crisis communications (Section 3).

Our main purpose is to address the role of verbal and non-verbal language in building a trust-relationshing between the communicator and the audience in distaster communication through the use of social media. While social media communications plans often incorporate language, this study is looking specifically at language that can promote trust. For disaster management organizations this involves having a communications plan and focussing on creating a disaster narrative that people can trust. The factual reliability of messages received through social media is a potential trust barrier between emergency managers and the public. Similarly, the public's trust in emergency managers can be affected by poor communication strategies.

2. TRUST, AUTHORITY AND DISASTER MANAGEMENT

2.1 Trust and Authority: Body Language in Warning Messages

Given that people in the EU and USA have a great personal autonomy and control over their environment, developing confidence which leads to trust authorities has become complex. In our earlier studies of doctor-patient communications, involving matters of life and limb that have resonance with disaster communications [2], it was found that communication issues between doctors and patients can exacerbate trust relationships due to three key barriers (Table 1):

Table 1 Key barriers in authority to public communications

3. Barrier	4. Elaboration
Verbal Barriers	Doctors often use language that is too technical which the patient may perceive confusing materially and domineering psychologically [11]
Non-Verbal Barriers	Given that as much as three quarters of communication between individuals is nonverbal [14], doctors' nonverbal behavior and what they communicate to their patients through their bodies is very relevant in their highly socio-emotional exchanges interaction [16].
4.1.1 **External Interruptions**	Any third party intrusion, physically or remotely via phones for example, distracts the patient and reduces trust between the two actors.

Using this analysis we look at the verbal and non-verbal strategies used by speakers in disaster communications and broadcast in the social media. An example is an 83-second video, featuring Governor Christie (New Jersey) giving a press briefing during Hurricane Sandy in 2012. Though the video was not originally intended for social media, it was then released on Twitter and Facebook. The analysis includes various aspects of the speaker's non-verbal behaviour, including body position and gestures (following [2]), as well as voice intonation and volume [10], [24]. We specifically look for any behaviour (verbal or non-verbal) that may represent a communication barrier, affecting the relation of trust. The analysis method has been previously applied to videos from legacy media, and we have extended it to videos posted on social media.

In the video Gov. Christie can be seen delivering an off-the-cuff speech on the importance for people living in Barrier Islands to move to higher and safer ground during hurricanes.[1] The analysis reveals that Gov. Christie fails to communicate empathy with his audience, endangering the trust relationship. This is shown in his use of body language, tone and intonation, words and discourse structure, which is summarized as follows.

Body stance: The Governor is speaking from a podium. This represents a physical barrier to communication, as it has the effect of increasing the speaker's distance from the audience, potentially reducing his credibility. In order to reduce the distance imposed by the podium, the Governor assumes a slouched position. This has the effect of making him look closer to the people he is talking to, but at the same time lessens his authority and this may impact the gravitas of his message (Figure 2a). While Gov. Christie's slouched position may be compatible with his intentions

[1] (Note that Governor Christie had already spoken in a very blunt manner during Hurricane Irene the year before in 2011 by asking citizens that they should "Get the Hell Off the Beach" http://www.youtube.com/watch?v=PHy6S5u7M3w

(i.e., to appear informal and amicable), the circulation of the decontextualized clip through the social media may favour criticism towards him and promote social mistrust in his message.

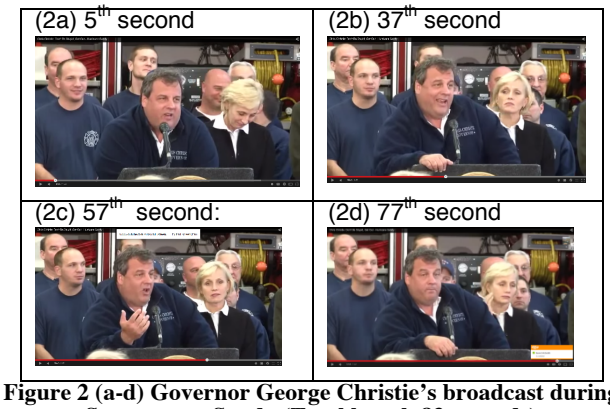

Figure 2 (a-d) Governor George Christie's broadcast during Superstorm Sandy (Total length 83 seconds) [www.youtube.com/watch?v=TltT7C9fcbw]

Tone and intonation: The tone of voice and intonation are an important means of conveying a message. They encode linguistic meaning, and at the same time reveal the speaker's emotional state, attitude, and concern for the audience. The Gov.'s voice is rather monotonic and nasal. His words are muffled, difficult to make out. His intonation does not emphasize any particular word. Overall, Gov. Christie's voice is inappropriate in the situation: while it communicates little empathy to the audience, it is also not a voice that moves to action.

Message content and word choice: In a speech, the message and content are most important. Governor Christie's message is an appeal or an address to those citizens who, in the event of a hurricane, refuse to leave their houses, thus risking their own and other people's lives. The discourse structure and choice of words are rather informal. This is appreciable: Gov. Christie clearly wants his message to be simple enough to be understood at all levels. However, the word 'stupid' is used 5 times to refer to the people who don't want to leave their houses in an emergency situation. After calling people 'stupid' he tries to regain ground, by smiling and justifying himself ('I just don't know any other way to put it I guess') or using humour. As for his discourse, his persuasion strategy seems to rely on a worst-case-scenario threat, using fear as motivation, instead of focusing on the positive aspects of staying safe. Overall, through his choice of words and discourse the Governor does not convey authoritativeness; rather he seems to be patronizing his audience. The effect is, again, to reduce the import of what he is saying.

This sample analysis exemplifies the many levels at which decisions regarding the communication of information in emergency situations must be made. In the context of social media, the relevance of these points on building trust through communication is broad. While the use of verbal language and clear messaging in an emergency situation has obvious implications when analysing textual information on social media, it is also important to assess non-verbal communication due to the capacity of social media to spread videos or images swiftly to a large audience. The verifiability of information on social media can be enhanced through images/video from official sources, such as this video of Gov. Christie, released on social media streams.

4.2 FEMA Case Study

We have analysed the communication strategy of American FEMA (Federal Emergency Management Agency) and other emergency management agencies (Canada, Australia and New Zealand) and in particular how FEMA bonds with the public and prepares them before emergencies so that when disasters strike they have their trust. FEMA has elaborated a five-point communication guideline, which can be summarized as follows:

1. **Identify key information that needs to be communicated to the public;**
2. **Craft messages conveying key information that are clear and easily understood by all, including those with special needs;**
3. **Prioritise messages to ensure timely delivery of information without overwhelming the audience;**
4. **Verify accuracy of information through appropriate channels;**
5. **Disseminate messages using the most effective means available. [9]**

Moreover, FEMA does not only establish contact with the public by providing accountable reports, information and support at the time of emergencies, but also bonds with the public – i.e. tries to ensure engagement in order to get people involved in education and training in a kind of lifelong learning during and after disasters.

FEMA uses its official website to develop and maintain confidence which, in turn, nurtures trust with the public during emergencies (www.fema.gov). This is presented as an authoritative source of information with external links to a variety of social media that provide information, recommendations and opinions (Figure 3).

Figure 3 FEMA web site with inclusive messages like "Get Involved" (19/01/2015).

There are messages both on the website and social media on how to plan, prepare for and mitigate emergency, devoting attention to the audiences' needs [9]. FEMA's strategy for connecting with its audience is by keeping them updated, getting them to learn about emergencies and training them for disaster management, a form of reciprocal communication that bonds and engenders trust [18].

Language plays a key role in trust building. As part of our ongoing project we have collated and analysed texts from the FEMA website including blogs (c. 0.4 million words) and Facebook & Twitter messages, together with news reports about major disasters in the USA. Our corpora comprise both texts in English (c 1.1 m words) and Spanish (0.4 m words). It appears that FEMA chooses language according to the type of social media used (*Facebook*, *Twitter*, blogs); whether the agency is communicating through text or speech (report, warning, etc.); which effect it wants to achieve (inform, call for action, …); and which medium it uses (radio, TV, video, …). Furthermore, the use of a fully developed, consolidated terminology prevents the public from misunderstanding messages and receiving incorrect or inaccurate information.

Here we use our 'core' corpus of FEMA documents to show the range of registers covered in the FEMA and its associated websites. As far as social media are concerned, information is maximally compressed in Twitter messages where most references are provided through hash tags or links to blogs and other documents. Facebook is perhaps intermediate in size, as it includes more visuals and longer texts, whereas blogs are a type of ultimate destination for lay people wishing to get full but

accessible information on a topic. The corpus is shown in Table 2 below.

Table 2 Components of the disaster management corpus including three sub-corpora of social media

Text type	Source	Language	Tokens
Facebook	FEMA	English	38,448
Twitter	FEMA	English	60,531
Blogs	FEMA	English	67,481
Fact sheets	FEMA	English	103,839
Documents on emergency management	FEMA	English	93,943
Lessons learned from Hurricane Sandy	FEMA	English	34,061
Twitter	FEMA	Spanish	19,913
TOTAL			**418,216**

FEMA's use of language is aimed at emphasizing the positive, the reassuring, rather than the negative, the discomforting. For example, people affected by disasters are referred to as "survivors" rather than "victims"; deaths are addressed as "casualties". English has an impact on the other language used by FEMA, Spanish, as can be seen in the Spanish tweets, where lots of terms and sometimes even slogans are more or less literally translated. Key concepts and messages are more often than not accompanied by their English equivalent – an important step to bond with and engender trust in the Hispanic community who have to function in two languages. An example in Spanish is in the following Tweet, where *severe weather* is first translated literally as *tiempo severo (*also *clima severo*) but in the message the standard Spanish term *mal tiempo* is used. Moreover, English *preparedness* simply becomes *preparación* (preparation) in Spanish (see Figure 4).

Figure 4 English/Spanish Twitter comparison (FEMA)

Finally, slogans are often used as they help people remember specific messages or keywords more easily (e.g. 'Get ready!', 'Get prepared!'); moreover, slogans are also effective to bond and to lead people to take concrete action.

4.3 Trust and Place

Developments in communication technologies have given more scope for community and authority communication in recent years. In discussions about Hurricane Katrina it has been argued that bloggers had a structured and crucial role to play in the emergency management procedures during Hurricane Katrina in 2006 [15]. A number of commentators became involved in the digital public debate about emergency management at Hurricane Katrina, and the digital platform allowed for commentary from people who were not necessarily present at the places affected by the disaster. This collective civic action arose as a result of the management of a disaster in a place that was suffering from a sudden shift in levels of risk and trust [1], and the resulting digital community engagement led to physical action such as protests and volunteering.

The events of Hurricane Katrina provide a localised example of the overlap between trust and place. The home, for some authors, is the place 'of greatest personal significance in one's life' [17]. Home, in reference to security and refuge, is relevant as it is one key place that comes under strain in disaster situations. During Hurricane Katrina many people refused to leave their homes for two main reasons. Firstly, due to exaggerated government reports on looting from which people felt they had to protect their homes, and secondly from a lack of trust in the military and governmental orders that were being delivered 0. The lack of trust was compounded by the excess of incorrect information, and both issues led people to stay in their homes where they felt a higher sense of security. This was based as much on the idea of trust in home as it was on the mistrust of authority figures and messages.

Arguably, the individual belief of a home-place as a secure space had a large part to play in the choice to stay or leave, but the ability of authorities to properly communicate the risk was crucial. The connection to home needs to be mitigated carefully in order to encourage people to evacuate. The choice to evacuate is a choice to leave home or stay as the potential time to evacuate decreases [7]. Communications during an evacuation subsequently need to be clear – any doubt or ambiguous communication about the necessity to evacuate can reduce the authority of an emergency manager. Without authority in these communications, public trust can be affected, as highlighted in the case study of Gov. Christie.

The potential for social media to bridge communications between emergency managers and the public before, during and after a natural disaster can potentially mitigate issues of trust such as those seen in the evacuation orders at Hurricane Katrina. A dialogue between an active public (bloggers, social media users) and emergency managers can help this trust develop and can assist in the widespread dissemination of a message. Direct communication can help in creating a sense of community, but lack of community togetherness can similarly create in-group/out-group relationships that can cause mistrust between actors [22]. Reciprocal communication can therefore reduce tensions between groups who feel that they are separate from one another (such as emergency managers and the public).

As illustrated with the communication strategies of FEMA, informal and direct language can be useful in gaining a sense of trust before an emergency. Rather than using a centralized communication system, such as video/television, the reciprocal communication between actors can be used to develop trust through ongoing communication that reduces tension and mistrust [6]. This trust can then carry over into a time when a natural disaster is occurring, and it is the dialogue that social media offers that can help to build trust through reciprocal acts of communication and trust-building.

5. PLANNING CRISIS COMMUNICATIONS

One of the doyens of US journalism, Ed Murrow (1908-1965), has reportedly said that 'The newest computer can merely compound, at speed, the oldest problem in the relations between human beings, and in the end the communicator will be confronted with

the old problem, of what to say and how to say it' (cited in [13]). Marken goes on to suggest that blogs can be treated as a major vehicle for starting a two way communication between an enterprise and its various stakeholders.

A compelling message resonates deeply and has a lasting effect. In the case of emergencies particular care needs to be taken in creating and delivering messages, so as to avoid miscommunication or spreading panic. Messages need to provide clear, accurate, verified and timely information that is suitable to the specific medium and audience and that has clear aims (i.e., provides information, requires specific action steps, reduces anxiety levels, facilitates relief efforts, …). It is therefore essential that organisations prepare their key messages in advance of any media appearances or interviews. A spokesperson should have authority and credibility, otherwise the audience will not trust information nor follow instructions if given by somebody they think is not reliable. In the case of Twitter/Facebook accounts, the spokesperson may be the digital identity of an emergency management group such as FEMA, however the clarity of messages and ability to deliver these messages is still paramount.

We have looked at the communications strategies of four emergency management groups (Police Service of Northern Ireland, UK, Garda Síochána, Ireland, Budenskommando Leipzig, Germany, and Protezione Civile Veneto, Italy) together with strategies of FEMA and emergency management organisations in Australia, Canada, New Zealand and the UK. Almost all these organisations have been evolving their disaster communications strategies to incorporate social media. Our initial observations relate to the target audience and the five key questions that have to be considered to engender trust and maximise the use of technologies that facilitate the two-way communication:

- **What do people know, think or believe now?**
- **What do we want them to know, think or believe?**
- **What obstacles must be overcome in order to get their attention?**
- **What stories, facts or examples will help them to understand?**
- **What do people need to do?**

6. CONCLUSIONS

Our conclusions relate to the practical issues of how disaster messages should be broadcast through social media to build a trust relationship with the audience. Based on past research and the findings of this paper, we propose that disaster communications should follow some basis principles, outlined below:

Simplicity

Messages should be: a) simple; b) be reinforced with evidence; c) illustrated with sound bites, stories and examples.

In disaster communications messages should be easily understood by all people. Messages that are obscure or too technical prevent people from understanding and undermine trust. Similarly, messages that are delivered without authority or consistency can give an incorrect perception of the message.

Relevance

Messages should be relevant to the target audience. They can be tailored to suit different audiences, while still remaining constant.

Goal-focused

Messages should support the main goals.

Also**, DON'Ts**

A message should not: a) be changed often –to have an impact, a clear message should be repeated over and over again; b) contain more than three or four concepts –to avoid confusing people.

Studies have shown that trust-building is associated with risk-taking and developing relationships with unknown actors. Trust-building is also the result of open, clear and effective communication. Thus, in disaster management a strong communication plan is perhaps the best way to develop trust relationships. The potential for developing confidence in authorities through the two-way reciprocal communication of social media provides an avenue for trust-building that arguably was not provided by previous authority/public communication media.

7. ACKNOWLEDGMENTS

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