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Introducing performativity to crisis management theory: An illustration from the 2003 French heat wave crisis response

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Abstract

This paper draws on theories of performativity to enrich our understanding of crisis dynamics and crisis management. While the current crisis management literature focuses on the necessity of consistent data and shared interpretation to coordinate effectively, our research suggests that to the contrary, in crisis response, efficient information transmission and federating sensemaking are hardly achievable and do not always support crisis response. By drawing on the concept of performativity, we completed an interpretive analysis of the 2003 French heat wave crisis response. Our findings unveil the influence of crisis responders' performance during crisis response, either as positive or negative catalysts for crisis response. Performing in crisis response can support immediate reaction and involvement, but can also generate conflicts, or misunderstandings that can burden coordination.The contribution of this work is threefold. First of all, we enrich the crisis management literature by suggesting performativity as a potential analysis grid of collective action during crisis response. Secondly, we propose some practical directions to benefit from the concept of performativity in crisis training. Finally, we propose a critical perspective on tacitly hedl assumpltions in crisis management.

Key-words: Crisis management, 2003 French heat wave, Performativity.

Introduction

This paper proposes performativity as a conceptual lens to enrich understanding of the influence of crisis responders' behaviors on coordination during crisis response.

In disaster settings, implicit adjustments from coordination standards, if not coordination breakdowns, are likely to occur (Van Veelen, Storms and Van Aart, 2006; Ren, Kiesler and Fussell, 2008). Thus scholars commonly agree that interactions play a crucial role in organizations' coping with environmental threats and organizational dysfunctions (Gonzalez, 2008). It is often presupposed that to meet with an unstable situation, crisis responders have to develop a common understanding of the situation and share information effectively. In line with this reasoning, the crisis management literature has provided significant efforts to identify good practices and technological resources to ease information transmission (Mitroff, Pearson and Harrington, 1996; Pearson, Misra, Claire and Mitroff, 1997; Jefferson, 2006). However, settling a commonly shared picture of the crisis situation can be difficult to achieve. Informational gaps are likely to occur, generating enough confusion to obstacle crisis response (Billings, Milburn and Schaalman, 1980; Milburn, Schuler and Watman, 1983b; Weick, 1988;1993; Weick and Sutcliffe, 2001). In addition, sharing a common interpretation of the situation can suffer from crisis responders' emotional state, distractions and conflicts (Ren et al., 2008), or can lead to cultural entrapment (Weick and Sutcliffe, 2003). Thus our paper addresses the following question: *When efficient information transmission and shared sensemaking do not occur, how to account for coordination in crisis response?*

The 2003 French heat wave crisis response offers a vivid illustration of coordination despite lacking information (Lagadec, 2004; Salagnac, 2007). and divergent interpretation and narratives. Our analysis of the 2003 French heat waveDuring the summer of 2003, 14,802 people died in France from hyperthermia, Most victims were elderlies living in urban regions. Within the organizations involved with the crisis, individuals developed divergent perceptions of the gravity of the situation. In addition, they

To account for coordination in the 2003 French heat wave crisis respone, we propose an alternative crisis management framework based on the concept of performativity (Denzin,

2003a). Performativity was extensively used as an analysis grid in philosophy (Lyotard, 1979; Barad, 2003), economics (Merton, 1948) and research in management (Parker and Kosoksky Sedgwick, 1995; Sweetser, 2001; Hodgson, 2005). Organizational members are both actors and spectators of performances. They perform changes and justifications, interpretations and judgements, while being both sincere and theatrical, rational and emotional. Information transmission is thus shaped by performative characteristics and behaviors that are watched as performances.

This study is explorative and interpretive. We coded three sources of data, e.g. public hearing, interviews, archives, that were previously reduced and triangulated. Our findings reveal that coordination did not solely depend on information transmission or individuals' ability to share meanings. The 2003 French heat wave crisis responders performed by mainly endorsing roles, showing off their professionalism and incarnating emotions. By developing communication strategies, crisis responders contributed to immediate action. However, their performances also played the role of an additional cognitive filter that aggravated conflicts and misunderstandings. Two intrinsic features of performativity can be observed in the interactions between the 2003 French heat wave crisis responders. First, the crisis responders' performance was not directed towards an efficient action but fueled on impression, interactions and personal approach to organizational politics. Second, alternating between the roles of an actor and a spectator, crisis responders were more likely to base their decisions off of an interpretation of others' performances rather than a univocal meaning or a single source of information.

This work is structured as follows. The first section presents our theoretical background in two parts: We first provide a review of approaches to information tranmission found in crisis management literature and then introduce our approach based on the concept of performance. The second section presents our methodology and then the third section presents a chronology of the 2003 French heat wave. The fourth section details our understanding of the communication that took place during the 2003 French heat wave from a performative perspective. More specifically, we detail crisis responders' performance through the narration of five episodes that played the role of milestones in crisis response. The final sections of the paper are devoted to the discussion of the findings and the contribution of this work.

Our contribution to the crisis management literature is three-fold. First of all, we provide additional insights on coordination in crisis response. Our work highlights the subtle role of the performance of emotions and professionalism on coordination in crisis response. While empathy can support individuals' involvement, emotions can also aggravate conflicts. In addition, our analysis demonstrates that the inherent duality of performance, e.g. the roles of an actor and a spectator, influenced the way crisis responders' mobilized and commited into crisis response. Furthermore, we discuss the contribution of the concept of performativity to the crisis management literature. The performative lenses help shed light on phenomena that would remain paradoxical otherwise. Finally, we question three tacitly accepted assumptions in crisis management.

Theoretical background

Coordination, information transmission & sensemaking

Numerous studies within crisis management literature investigate the factors that result in either the failure or success of a crisis response. In particular, the literature outlines the importance to optimize access to information and to support sense making. However, The 2003 French heat wave illustrates a gap between empirical reality and this literature. In this section, we briefly review different perspectives on the factors of success and failure of a crisis response. We then explain this gap between these perspectives and the case under study.

Recently, crisis management scholars have demonstrated that access to updated sources of information can ease crisis response significantly. From a resource-based view, this stream of research has compared the pros and cons with respect to the use of technologies and management tools (Quarantelli, 1997; Turoff, 2002; Quarantelli, 2007). More specifically, scholars have been examining the extent that the Internet (Perry, Taylor and Doerfel, 2003), blogs (Sweetser and Metzgar, 2007), and social media (Plotnick and White, 2010) can practically support mobilization. Other studies focus on (Perry et al., 2003) phones (Brigham and Introna, 2006) and complex systems such as geo-collaborative tools (Cai, MacEachren, Sharma, Brewer, Fuhrmann and McNeese, 2005). Finally, growing efforts to design systems that support the Common Operational Picture (COP) by assembling diverse sources of data in a unified representation illustrates the strong need for information sharing in crisis response.

However, more recent studies have raised criticism against this approach to crisis management. Not only are resources not always available (Dawes, Cresswell and Cahan, 2004) but they also have a tendency to produce irrelevant pieces of information. Crisis responders can deviate from commonly-shared patterns of use and transmission of information when they need to be resilient (Rerup, 2001). Quarantelli's claim that (1988: 376), '*the great number of possible combinations and contingencies necessitates that managers at times of emergencies be creative in devising the tactics to address them*' is particularly relevant when applied to information (Mendonça, Jefferson and Harrald, 2007; Palen, Hiltz and Liu, 2007). The production of a unified set of information hardly seem feasible, all the more as emotional pressure tends to burden information transmission (Singh, Singh, Park, Lee and Rao, 2009). In addition, the ability of crisis responders to coordinate with each other does not solely depend on information access and quality. Some authors are even concerned that technologies endanger an organization's stability when a crisis strikes by virtually spreading collective psychose (Lagadec, 2009). Finally, technologies can fail at providing information crucial to making sense of a critical situation (Boin, 2009).

Echoing this criticism, a second stream of research shifts the focus from information transmission to the behavioral dimension of crisis response (Kiesler and Sproull, 1982; Lanzara, 1983; Mendonça, Webb and Butts, 2010). From this perspective, crisis management relies on crisis responders' ability to converge towards a commonly-shared interpretation. (Roux-Dufort and Vidaillet, 2003). In Weick's in-depth investigation of the Mann Gulch highlights, when no more sense could be shared, the firefighters symbolically abandonned their professional identity. As a result, communication became difficult and coordination collapsed. One of the firefighters survived through improvisation by surrounding himself with a circle of burning grass. This example suggests that sensemaking to develop a shared interpretation, prior to information access and transmission, is the key to efficient crisis management (Weick and Roberts, 1993; Mills and Weatherbee, 2006; Mullen, Vladi and Mills, 2006).

However, the absence of a shared meaning during crisis response can also have positive effects on its outcome. When crisis responders feel that the situation differs from the routine, they start sensing, braketting, and labeling (Weick et al., 2005). which makes crisis responders likely to develop multiple meanings (Steyer, Laroche and Jonczyk, 2010). Their defense of their own point of view and their struggle for meaning-making is a source of action (Hajer and Uitermark, 2008) that eventually promotes sensemaking renewal. It is true that without confronting various interpretations, organizations take the risk of remaining tied into a 'cultural entrapment', which burdens the development of adequate response to the critical situation, as in the Bristol Royal Infirmary case (Weick and Sutcliffe, 2003). If significant details occur outside of the limited framework generated by these shared words, names, or

labels then the interdependent set of responders will not be able to access them till it is too late (Roux-Dufort, 2009; Weick, 2011).

However, in a crisis situation such as the 2003 French heat wave, information transmission and sensemaking can be blocked, or at least considerably slowed down. In 2003 the presence of death and suffering generated mixed feelings among crisis responders. In addition, organizational disparities among crisis responders strengthened the feeling of confusion. In this particular case, we believe that the concept of performativity offers additional insights on crisis response.

From sensemaking to performance as a theoretical lens

Sensemaking refers to interpreting cues, situations, and transforming them into words (Weick, 2011). *'Sensemaking involves turning circumstances into a situation that is comprehended explicitly in words and that serves as a springboard for action'* (Taylor & Van Every, 2000, p. 40). Meaning differs from the concept of sensemaking in that it refers either to a unequivocal signification attached to an event or to existential values (Sievers, 1986).

Drawing on the example of a successful response started by a nurse that saved the life of a baby, Weick, Sutcliffe and Obstfeld (2005) acknowledge four prospective directions for future research to enrich the concept of sensemaking in crisis response. In particular, the authors point towards the connection between sensemaking and performance.

A performance is the doing of an action that is intended to have an effect on those who witness it. A performance simultaneously involves *being*, *doing* and *showing-doing* (Schechner, 2002) and does not represent but unmediatedly presents (Schechner, 2002; Denzin, 2003b). In a performance, speaking, writing or moving do not intend to inform or create a common understanding but to have people consider other views, reflect, take actions and perform at their turn. What gets transmitted is not only informational or cognitive but also emotional, affective, embodied and situated. The performance blurs thinking and doing, interpreting and making, conceptualizing and creating, abstraction and embodiment (Conquergood, 2002). While sensemaking and performativity are related to each other, the two concepts contrast significantly in that they highlight different dynamics of interactions and communication during crisis response. The concept of performativity specifically enriches our understanding of crisis response in five essential ways.

Commentaire [A1]: Mettre la différence avec l'enactement

First of all, the concept of performativity helps us to understand situations in which sensemaking has not yet occurred. The literature on sensemaking has primarily investigated situations where individuals or groups converge (or not) towards a specific meaning. A performance is transformative, which means that performers constantly subvert or create additional senses rather than converging towards one or several meanings.

Secondly, performance defines communication both as an action and as sense. In the sensemaking literature, sensemaking triggers actions (Weick and *al*., 2005), and the initiation of actions is a starting point for sensemaking (Weick, 1998). However, through performance, makes sense by communication, which can also be viewed as an action.

Thirdly, performativity integrates verbal and non-verbal cues into the analysis of interactions. Throughout the sensemaking process, crisis responders translate their experiences into words, labels and frames. However, some cues may remain unnoticed or excluded from, sensemaking (Weick & Sutcliffe, 2003). In a performance, words, labels and frames are only a small portion of what is communicated. Phrases, tones of voices, postures constitute a significant majority of the message as well as emotions, embodiment and tactile or olfactive properties of the message.

Fourthly, performativity is a heuristic concept in that a performance builds on immediate experience, readily accessible resources and the interaction of contrasting viewpoints. In other words, the outcome of a performance is continuously evolving and is dependant on the actions of those involved and the situation at hand. In this respect, performance differs from Corvellec and Riesberg's concept of *mise-en-sens* (2007), which also draws upon a theatrical metaphor, but where one dominant sense is staged in order to be sold to multiple stakeholders. The concept of sensemaking draws from a collective body of past sensemakings (Weick, 1979) where as performance builds as on "open work" (Eco, 1989) from ongoing interactions, actions and myths.

Finally, performativity takes into account the dynamics of power and hierarchy. Sensemaking takes place in the form of a metaphorical conversation between members, during which power relationships are rarely established. From the perspective of performativity, to the contrary, the performer plays his hierarchical role and the spectator's interpretation of the situation is from the beginning imprinted by hierarchical positions and power games. In addition, a performance involves conventions about interpreting rules, where power, hierarchies and positions are pervasive (Rancière, 2004). During times of crisis, improvisations and behaviors diverging from the expected role being performed are intrinsic parts of the overall performance.

To conclude, the concept of performativity provides an excellent opportunity to explore interactions in crisis response.

Methodology

Our study is exploratory and, for this reason, followed a qualitative design. Data collection covered three main sources: public hearings, interviews and archives. The public hearings were committed to the parliamentary chambers because "*the public institutions lack of involvement had been alarming*" (Evin, 2004). These hearings consisted of more than 100 hours of public collective interviewing completed in the aftermath of the heat wave by members of two investigation commissions. We completed 13 semi-structured retrospetive interviews. Archives were composed of internal resources that correspond to the documents that the heat wave crisis responders exchanged, ranging from emails to press releases drafts. We also gathered external archives under the form of essays, academic works, reports and newspapers' documentation on the crisis response to the 2003 French heat wave. Given the important amount of archives related to the 2003 French heat wave, we had to select archival data on the basis of their proximity with the topic of research and their reliability. To handle proximity, we retained documents that dealt with the core of our topics and documents that provided contextual data. While the former documents referred to sources of data that dealt with coordination issues within the Parisian health network, the latter type of document depicted the organizational settings and the health care system functioning. Archives also differed in terms of scientific reliability: some were scientific studies, which conducted us to retain these studies as sources of secondary data (Thiétart, 2007). We treated documents that were not supported by any methodology as testimonies and coded these documents as primary data. opinions. Finally, we analyzed official reports, even though they offer less rigorous methodologies and coded the emails, internal notes, public interviews that they contained.

To support the reliability of our findings, we completed data triangulation on both primary and secondary data. Appendice A provides an illustration of the triangulation process. However, the coding focused on primary sources of data, e.g. emails, faxes, retrospective interviews and public hearings. Given the important amount of data to analyze, we had to complete a data reduction by following a theme dictionary (Thiétart, 2007). Appendice B presents the theme dictionaries used for data reduction.

Data analysis was composed of two main steps. The first step of analysis consisted of defining a chronology of events, followed by the identification of most influential episodes on coordination by relying on Miles and Huberman's guidelines for Critical Incident Charts (p. 115). According to these authors the Critical Incident Chart helps comparing different events that took place in a limited amount of time. The Criticial Incident Chart we used in presented in Appendice C.The second step of analysis consisted of analyzing the performative side of crisis response by repeatedly coding data, writing memos and then confronted our coding to theory. Appendice D presents an segment of the empirical coding of data. In the appendice the four codes that fit into the concept of performance are represented in bolt.

The 2003 French heat wave crisis response

The heat wave, which occurred during the summer of 2003 in Europe, had dramatic effects on the environment and the population and was described as a *"long and deadly climatic episode, in particular for the weakest persons"* (Evin, 2004 #1517). During the months of July and August, there was a spectacular drought. Lakes and rivers were dried-up enough to block energy supplying (Salagnac, 2007). The simultaneous effects of the heat and the drought raised the risk of fires and energy blackouts in electrical and nuclear power plants. The heat wave provoked 70000 fatalities in Europe. In France, the Parisian region was one of the most critically touched by the effects of the heat.

In addition, 14802 persons died of hyperthermia between 1 and 20 August 2003. The number of fatalities caused by the heat wave was the highest among European countries after Italy. The elderlies represented more than 80% of the fatalities (Hémon, Jougla, Clavel, Laurent, Bellec and Pavillon, 2003). With the mortality rates being more than 150% higher than previous years during the two first weeks on the month of August (Hémon et al., 2003; Fouillet, Rey, Laurent, Pavillon, Bellec, Guihenneuc-Jouyaux, Clavel, Jougla and Hémon, 2006), both health and civil protection were deeply disorganized.. Hospitals fall short of fresh water, ice, hydrating solutions, and other equipments. Mortuary chambers rapidly went full and hospitals had to find places to stock dead bodies. In addition, physicians hardly managed to diagnose hyperthermia at the beginning of the crisis. As a result, operationals literally experienced chaos and panic, due to the overwhelming number of patients who were inexorably dying.

Hospitals were not the only type of organizations that were hit by the heat wave. More specifically, the 2003 French heat wave crisis response involved a complex set of 60 organizations (with 23 different types of organizations) that we label here in as the Health Network. In this section, we first provide a short chronology of the events that composed the French heat wave crisis response. We then detail the paradoxes inherent to the transmission of information and requests within the Health Network.

The first stage of the crisis situation corresponds to the emergence of disparate signals from 4 August to 7 August 2003. Emergency organizations and sanitary institutions in Brittany reported suspicious deaths to the heads of the Institut National de Veille Sanitaire (National Institute for Health Watch, labeled INVS) and the Direction Générale de la Santé (Health General Direction, labeled DGS), which are two national institutions in charge of watching and addressing sanitary risks. Thursday morning (6 August 2003), one of the Health ministry's advisers requested the creation of an alert message to health professionals. The day before, local institutions had informally met emergency squad members, who had voiced their concerns about the potential effects of the heat on the elderlies. After the simultaneous appearance of alarming signals, the situation rapidly worsened, which corresponds to the beginning of the coping stage of the French heat wave crisis. On 8 August, health care operational services had to cope with the sudden rise of mortality. Health care operational

actors became overwhelmed with the lack of resources. The Assistance Publique des Hôpitaux de Paris (Public assistance of Paris hospitals, labeled AP-HP) sent an alert asking the hospital staff to help each other with patients and get prepared if the "White Plan" was on the scene (The "White Plan" is the name of the national emergency plan that was developed by the French Health Ministry to organize the response of all official entities (police, fire brigades, hospitals, army, etc.) to face the heat wave). In the afternoon of 8 August, all the emergency squads (also called SAMU-SMUR) were overwhelmed with patients and requests. During the weekend, the situation worsened even more for all emergency squads: emergency units in hospitals, SAMU and SMUR, firefighters, as well as a non profit organization called SOS médecins. During the weekend many field actors developed improvisation practices, ranging from the ad hoc information system between firefighters and SAMU to innovative uses of ice in hospitals. On 10 August, Dr. A, an Emergency Room Technician (ERT), alerted the public opinion on television by asserting that deaths were numerous. On 11 August, the administrative sphere recognized that the situation is out of control. As the catastrophe was taking place, panic strengthened. None of the organizations involved in crisis response had a precise idea of the number of deaths, which resulted into speculation with the media as well as a political debate on the government ability to handle the situation. The hospital's staff was exhausted by the heat and the lack of human and material resources. Transversal meetings between the Direction de l'Hospitalisation et de l'Organisation des Soins (Treatments organization and Hospitalization Direction, labeled as DHOS), DGS, AP-HP, INVS and Health Ministry advisers took place on 11 and 12 August 2003.

The coping stage of the crisis was succeded by a post-crisis stage, which corresponded to the rise of conflicts within the Health Network. Since the afternoon of 13 August, the situation significantly improved in hospitals; the temperatures and the attendance of emergency services simultaneously decreased. However, the administrative sphere was settling into heavy data collection processes on the hospitals' activities, which required hour-per-hour reports from services in critical situations about patients, deaths and temperatures in rooms. In the afternoon the Internal Affairs Ministry officially triggered the "White Plan". From this time on, the effort to compile statistics of death rates start and the political controversy surrounding the government's ability to handle the situation developed. This time corresponded to the end of the organizational crisis but the beginning of a political crisis.

While one can expect a linear relationship between information transmission and uncertainty, the 2003 French heat wave case offers puzzling illustrations of either successful or flawed coordination. Similarly to the Mann Gulch disaster case, crisis responders hardly coordinated while they were provided unambiguous instructions. In addition, they failed at developing a unified view on univocal matters such as statistics on mortality. On the contrary, when the situation was the most complicated or confusing, they surprisingly coordinated in an extemporaneous manner or even developed innovative practices collectively. In a short notice, hospitals' personnel managed to develop and share good practices in relation to hyperthermia. In the following section we provide further detail and analyze these paradoxes by relying on performative thinking.

The performative aspects of the 2003 French heat wave crisis response

This section analyzes the performative dimension of five episodes of the 2003 French heat wave crisis response. Each of these episodes depicts information transmission between crisis responders through diverse media, such as official statement, press release, electronic communication, fax or face-to-face and phone interactions. As described in the methodological section (for more detail see the Critical Incident Chart in the Appendices), these episodes had a significant influence on crisis response and its outcome. Table 1

describes the transmitted information, the initial senders and recipients. We then detail our performative understanding of each episode.

Table 1. Description of the 2003 French heat wave episodes

Episode label	Date	Transmitted information	Initial sender	Initial recipient
An invitation for a memo	6 August 2003	Request for an alert memo towards health care professionals	Health Minister adviser	Administrative managers
An empathic warning	8 August & 12 August 2003	Warning about the situation and recommendations in a fax	AP-HP directors	Operationals
A desperate bid for help	8 August 2003	Request for help in Emergency Rooms (ER)	ERT	Administrative managers
Disputing legitimacy	10 August & 11 August 2003	Alert about the number of fatalities	ERT	DGS director
Informing about what remains unknown	Between 10 & 20 August 2003	Suggestion of a lack of information	DGS assistant director	Public opinion

An invitation for a memo

The top directors of the health network not only transmitted top-down requests but also performed so as to soften the strictness of their requests. Rather than claiming orders, they suggested actions and discussed the feasibility of these requests.

In particular, on 6 August 2003, one of the Health Minister advisers explained to his counterparts his concern about the effect of the heat on citizens' health. Using electronic communication, he suggested to administrative managers – his subordinates - the need to send a recommendation memo about hyperthermia to health care organizations and professionals. Rather than explicitely expressing the urgent need for the memo, he formulated a friendly suggestion that did not sound neither compulsory nor necessary. Using both conditional verbal mode and email as an asynchronous, therefore less abrupt channel, the adviser's tone remained gracious:

"It would be useful to send a memo to recall basic precautions to care for the youngest and eldest patients. There are plenty of studies about the health related impacts of heat waves (...). I think the CDC [Center for Disease Control in Atlanta] reviewed them. It could result into an emergency message".

The performance of the adviser as a soft and corteous superior hindered the gravity of the events that originally motivated his request. Rather than the heat, the request itself attracted the attention of the recipients, who, in turn, reflected about what could be completed with respect to the memo. In their email responses, the administrative managers performed as zealous professionals:

"I called [colleagues] to discuss about what could be done [to investigate the health related impacts of the heat wave]. First of all, we should take into account the feasibility

criterion. We therefore should collaborate with organizations that already have an information system and data from previous years. Here is our idea: trying to bring information up to the INVS rather than settling for a specific data collection system".

However, showing their involvement into the design of future investigation conducted them to delay their initial task: writing an emergency message. Emails were forwarded multiple times and developed a narration of the actions undertaken since the sending of the original email. Their content was of the strategic level, dealing with feasibility as a generic criterion to make decision on whether the strategy should be implemented. However, the interlocutors did not include details on how to implement the strategy.

Eventually, more than 60 hours were necessary to produce a final version of the memo. This means that the actions in response to this request were completed in three days, a delay too extended given the urgency of the situation and the need for an alert. It is interesting to note that the plans for investigation were not fully implemented, even in the aftermath of the heat wave.

In this episode, information was transmitted satisfactorily: emails were promptly exchanged by the individuals involved in the production of the memo. In addition, the episode does not reveal any hiatus between the crisis responders' interpretation of the situation. However, the delayed realization of the memo highlights that interactions, performed as a professional courteoisy, generated enthusiasm but not necessarily immediate action. Both the sender and the recipients. They commited into intense questioning but primarily experienced a professional transaction rather than addressing the gravity of the situation itself. While the intent of the message was to alert, it performatively carried the opposite sense: there is no emergency.

An empathic warning

Emotional discourse performed as both a lever for resources and a strong motivator. The AP-HP directors spontaneously sent a fax on 8 August to transmit guidelines to hospitals. These directions mentioned the need to alleviate the workload of emergency units, by sending the patients whose health was satisfactorily to their homes and canceling previously planned surgical operations. The AP-HP co-director, who was the author of this fax, wrote a personal comment next to the guidelines. In this comment, he expressed his awareness and concern that hospitals were being overwhelmed by challenges:

"The situation is very alarming. I insist that everyone take all the necessary initiatives as soon as you get this message. I am aware that the situation is complicated".

While the comment is alarming, the fax generated strong involvement and mobilization among operationals. Similarly, the DHOS director sent a fax on 12 August recommending that hospitals should be open to *"consider every opportunity to increase beds capacities, even by collaborating with funeral homes".* In other words, the director gave permission to hospital directors to improvise ad hoc solutions to manage corpses. The senders of these faxes were then struck by the responses to their warning:

"What is wonderful in our institution is that people respond immediately to our messages. In a fax I wrote by pen to people that the situation was alarming and that they had to get prepared for it. In the hours following my sending of the message, people were mobilized to do extra-hours, find beds and other resources".

In this case, information transmission was not totally effective. Interestingly, the directions provided in the fax were not exhaustive and did not include details on how to make them practically feasible. In addition, this fax message was a one-shot, unidirectional

communication. As sender and the recipients did not have the opportunity to confront their interpretations of the situation, the emergence of a collective sensemaking was difficult, if not impossible.

However, with the personal view of the sender added on the side of the document, the fax was not only a media but also supported the sender's performance as an empathic, almost fraternal leader. By explaining his awareness of the situation, the sender hinted his personal involvement into the situation. Through the first person narration and the expression of his own opinion, the AP-HP director incarnated rather than merely vehicled information. His comment suggested that the recipients were the *"real"* actors on the stage of the crisis response. According to the message, the operationals were meant to be in the field, feel self-confident and act accordingly to their understanding of the situation and improvise. As a result, the message had an empowering effect on operationals who massively commited during the 8-10 August weekend by doing extra hours, coming back from vacation or even practicing innovatively.

Such personal involvement and understanding from the author had a positive catalyst effect. The message neither really transmitted information nor supported common sensemaking. Its intention was before all to affect and have effects. Instead of providing directions, it performatively conveyed: find the relevant directions. The unusual phrases and tones were interpreted as '*there is something really unusual'*.

A desperate bid for help

Later, on 10 August, the situation was more than ever critical and crisis responders kept sending messages and communicating. While messages were alarming, administrative managers surprisingly generated rather neutral and detached answers. More than that, they failed to trigger any reaction.

In particular, an ERT contacted one of the DGS employees on 11 August. His email vividly depicted his feeling powerless to tackle deaths and suffering:

"Many elderly die in emergency rooms indirectly or directly from hyperthermia. Three persons died in Saint Joseph [hospital] so far. The emergency roomers (ERs), at least ours, are totally flooded with patients. Some of them stay 4 or 5 on the same stretchers in ER. We have to search for more beds and have completely deleted all our scheduled medical interventions. I have never experienced such a situation in 25 years. The situation is really serious".

Through this message, the ERT performed as a reporter and literally shared his own field experience. He did not only provided a rich description of what he was witnessing but also accounted for his concern. However, his message failed at developing a shared perception of the situation. His administrative interlocutor reformulated his request as a transmission of information and did not respond to the ERT's opinion on the criticality of the situation. His response did not include any personal reaction to the description of the suffering and his tone remained neutral. Rather, he accounted for forms as management tools to be used in hospitals:

"Thank you for the information you transmitted earlier about heat strokes in Saint Joseph and Bichat hospitals. I relayed it internally. The InVS has just settled an emergency data collection process. Please find attached the forms that compose it. All these documents have been sent to hospitals. The person to contact is….".

Despite the ERT's personal involvement into the alerting message, his performance did not mobilize nor federated his interlocutors. Responding again, the ERT's response unveiled statistics issues related to data collection and further argued the need for help:

"Thanks for your message. We have sent messages everywhere. The problem with data is that they will not reflect indirect effects of hyperthermia (…). The situation is desperate here. The government or the DRASS should trigger the White Plan or an Emergency plan very quickly. As I made my promise to your colleague, could you please transfer information?"

With no surprise the administrative interlocutor effectively transmitted the email but no discussion was developed on data collection. It is interesting to note the email response to the ERT who had alerted administrative actors focused on a long term investigation project rather than immediate action:

"Thank you for information. Beyond the current investigation we intend to lead a long term investigation on the total mortality – or even morbidity – that will take into account some specific pathologies, such as cardiac, vascular, and respiratory diseases. Our project has to be validated but we hope that an international comparison will be feasible".

In this episode, information transmission was effective and quick. However, a common sensemaking of the situation hardly developed, which, in our view, is related to the interlocutors' distinct performances. The ERT and his admnistrative colleague performed on distinct stages, thereby failing at sharing one unique meaning. While the ERT's alert grounded on a emotional even physical experience of the catastrophe, the administrative managers, in turn, performed on a theoretical stage. In addition, they focused on the objective to transmit information where as the ERT used information transmission as means to mobilize. The ERT's performance was disconnected to adminstrative usages. Emotions and embodiement cannot be filled in a form. The administrative 'spectator' made his own interpretation of the ERT's performance, which was far from the intented message.

Disputing legitimacy

During the whole crisis response, actors failed to develop convergent views on univocal matters, such as statistics. Conflicting viewpoints and even arguments, arrose amoung professionals when compiling data on the number of deaths and fatalities due to the heat. As soon as alerts were raised, operational and administrative actors started debating a correct estimation of fatalities. To lead this debate, both actors approached their own *mise en scène* by using rhetoric that is specific to their professions. Operational actors relied on the dramatic vision of hospitals and patients waiting for care and provided a vivid testimony of the catastrophe they were witnessing. In addition, they unsettled those who were unaware situation's severity by unexpectedly breaking the silence about the mortality figures.

Dr. A, an ERT who had developed numerous acquaintances through the health network and the media, had the initiative to contact one of the top directors by phone when the number of patients became alarming in his unit. On 10 August, he appeared on television during prime time. He was interviewed in the middle of an emergency room and dressed in a suit. In addition to the visual effect provided by the interview settings, Dr. A announced that more than 50 deaths could be expected and that emergency units were overwhelmed with patients, which had a striking effect on public opinion. This was the first time that death figures were mentioned in relation to the heat wave. The officials reacted to this interview the day after by positing in an official note that these 50 deaths were not unexpected but resulted from natural causes. The officials' statement stated that the elderly who had passed away during the first days of the heat wave would have passed away anyways.

Dr A. then reacted on August ll, 2003 to this official statement in another interview, claiming:

"No, these deaths [were] not normal and these elderly people would not have passed away now" and concluded with dismay: "And what about all these persons?", showing the patients

who were waiting in the ER, "Should we let them die without doing anything? What the hell are they doing at the DGS? Is this a joke?"

On 11 August, Dr. A was invited by the government to attend an ad hoc meeting and to provide his recommendations on what should be done to alleviate the immense workload hospitals were facing (for more detail see the chronology of the heat wave). At the end of this meeting Dr. A met the director of the DGS, e.g., the institution he openly criticized during his two interviews:

"At the top of the stairs, I can see a man with messy hair […]. This man is the DGS director. He is an epidemiologist, an internationally approved specialist of high sanitary risks. He teaches worlwide, primarily in France and Canada. Although he was away when the crisis broke out, he is now back in Paris, just like the other directors. (…). I have neither met [this person]. However, as soon as he sees me, he starts talking to me as if we were friends. This does not surprise me: Even though we are not relatives, we are least colleagues. Despite the fact that we belong to distinctly different professional families, he calls to me: "So. Dr.A., you are babbling on, let me teach you what a real statistical curve is! You have some lessons to learn on epidemiology!"

In this episode, information transmission was not totally effective as the interlocutors interacted undirectely, e.g. through press releases, official statements and interviews. In addition, sensemaking developed on separate tracks for each side. The divergent views on mortality statistics eventually resulted into a professional duel between Dr. A and the DGS director. Both Dr. A and the administration used specific communication means: the former relied on an emotional mediatic representation while the latter performed legitimacy, referring to either status in the case of the press release or knowledgeability in the case of the DGS director. One after another, each performance was eventually dismantled by a contradictory performance from the other side.

While Dr. A's intention was to alert that the situation was needed immediate attention, the statement and the DGS director's language hinted that the situation was unsurprising. Thanks to his initial performance, Dr. A provoked a reaction from the officials that eventually resulted in a salutary outcome. However, this conflictual performance made assessing fatalities even more emotional and complicated. Unfortunately, the original topic of interests was significantly hindered by the debates over figure. Consequently, additional chaos and noise were generated at the expense of an immediate response.

This example reveals how a performance can cause confusion, while at the same time serving as a powerful catalyst for response. People not only react to a situation, they also perform a role depending on their position and disposition. If one improvises an action which contrasts those expected from their peers and supervisors, the performance may generate a reaction questioning the legitimacy of the improvisers. Conflicts may then arise, preventing the development of a unified interpretation of the situation. However, this conflictual performance may also instigate a response that is critically necessary.

Informing about what remains unknown

As the crisis response was unfolding, responsibilities were increasingly questioned by operationals, trade unions and the media. Between 4 and 20 August, crisis responders developed a growing concern towards their own understanding of the situation. Day after day, both administrative and operational actors realized that the social implications of the heat wave were much worse than what was officially stated. Consequently, some administrative directors felt the need to develop communication strategies to protect themselves against potential criticism. Since 10 August, directors started sending messages, similar to that of the

communiqué, that explained how unexpected the situation was and that the lack of available information was likely to burden their handling of the situation:

"During the past week, we were informed of unexpected deaths that have occurred since the first days of the heat wave. We will certainly have a full assessment of the situation by the end of the month of September. However, it is likely that the mortality rates will be high: certainly hundreds of deaths, unfortunately".

At this point of the crisis response, the message did not bring forth any additional pieces of information to infirm or confirm previously held assumptions. Arguably the sender of this message seemingly anticipated future problems in crisis response that could be associated with his position. He therefore accounted for his future lack of performance by incriminating the lack of information. By doing so, he performed as a consciencious foresighter who, powerless, could not, under any condition, work efficiently. By sending this message, the director unavoidably experienced crisis as a powerless spectator. In particular, the message focused on figures and facts, implying limited emotional commitment. Such a communication strategy was unsurprising given that the risk of being compelled to account for one's behavior and responsibilities is high within the health care profession. However, this message suggested the sender's intention was to not be held responsible for the situation and implied his disengagement from the reality of the crisis. A performance is not always directed towards an efficient action; a performance is primarily directed towards those who examines performance taking into account the performances of those for whom they are held accountable for.

Commentaire [A21: Check with Rachel

Table 2. presents a summary of our findings. For each episode, the table details three specific points. The first is labeled Sensemaking and refers to whether a common meaning was shared at the end of an episode. The second point refers to whether information transmission was effective. The final point in the table is labeled as Performance features and corresponds to the salient characteristics of the performances that took place during each episode.

Table 2. Coordination and Performative aspects of communication during the 2003 French heat wave episodes

Episode label	Date	Communication features		Effects on crisis response
An invitation for a memo	6 August	Sensemaking	Shared meaning	Mobilization and involvement but delayed completion of tasks
		Information transmission & access	effective	
		Performance features	Courteoisy & professional zeal	
An empathic warning	8 and 12 August	Sensemaking	Unshared meaning	Mobilization ad involvement. Immediate action and involvement
		Information transmission & access	Ineffective	
		Performance features	Empathy & empowerment	
A desperate bid for help	8 August	Sensemaking	Unshared meaning	Mobilization but detachement. No immediate action
		Information access & transmission	Effective	
		Performance features	Emotion & professionalism regarding information transmission	
Disputing legitimacy	10 and 11 August	Sensemaking	Unshared meaning	Immediate action but conflicts and confusion.
		Information access & transmission	Ineffective	
		Performance features	Emotion, visual representation and knowledgeability	
Informing about what remains unknown	6-20 August	Sensemaking	Shared meaning	Delayed action
		Information transmission	Effective	
		Performance features	Professionalism	

Discussion

Approaching crisis response trough the concept of performativity is complementary to other more traditional approaches in crisis management literature.

While crisis reponders to the 2003 French heat wave failed at communicating efficiently on univocal matters, they paradoxically managed to handle chaos collectively, in particular in the second and the forth episodes. This paradox is not a surprise as previous work in crisis management literature already demonstrated that information transmission is fragile and primarily depends on crisis responders' perceptions and behaviors (Weick, 1993; Weick and Sutcliffe, 2001; Laroche, 2004; Rodriguez, Trainor and Quarantelli, 2006).

By using performativity as an analysis grid, this work sheds light on this paradox and highlights the influence of communication strategies coordination in crisis response in three manners.

First, the performative perspective provides additional insights on mobilization and involvement. This perspective gives insight on how to account for collective action in crisis response when efficient information transmission and shared sensemaking do not occur. In addition, performativity can account for delayed action despite optimized information transmission and shared sensemaking. For instance, in his invitation to write a memo, the Health Minister adviser softened the strictness of his orders. His subordinates, in turn, struggled to prove their professionalism by extensive email communication, thereby delaying the completion of the requested task. Analyzing how the subordinates took into account the decision maker's performance and consequently performed helps understand how an urgent request paradoxically took days to be completed, e.g. generated mobilization but low awareness at the same time. Consistently with this view, acknowledging the performative dimension of communication helps to avoid misleading conclusions on crisis responders' reaction to an information stimulus. Going further, the perspective on performance helps understand why interpretations of a message may even contradict what its content was meant to convey.

Commentaire [A3]: Ajouter par rapport à version soumise à Rachel. Mettre à jour !

Second, approaching crisis response through performativity enriches the analysis of a case study by taking into account emotion and not only cognition or words. emotional tone of the message in the second episode triggered massive involvement from the hospitals' personnel. On the contrary, the ERT to his administrative interlocutor was less effective in the third episode. In the former case, the performance of emotions had a federating effect on crisis responders while in the latter it arose misunderstandings. For this reason, further investigation is necessary to explain the contrast between these two episodes where crisis responders performed their emotions.

Third, the concept of performativity highlights that crisis responders can endorse two distinct roles alternatively: as actors and as spectators This duality reveals contradiction as a core ingredients of communication during crisis response, as previously suggested in the literature (Quarantelli, 1954; Quarantelli and Dynes, 1977). As performers and spectators are likely not to share the same experience of a play, crisis responders experience crisis response from separate perspectives. Thus crisis responders are likely to interpret other's actions on the basis of their own performance. As the disputing legitimacy episode suggests, crisis responders argued their knowledgeability to counter competing meanings and performances, which contributed to the coexistence of multiple meanings. ~~As performers and spectators are likely not to share the same experience of a play, crisis responders experience crisis response from separate perspectives. Thus crisis responders are likely to interpret other's actions on the basis of their own performance. As the disputing legitimacy episode suggests, crisis responders argued their knowledgeability to counter competing meanings and performances, which contributed to the coexistence of multiple meanings.~~

Finally, performativity highlights the role of a power in coordination in crisis response. In particular, the third and the fourth episodes reveal that power connection between crisis responders are embodied by technology, places and even objects. In particular, crisis responders' choice for a media or a place to exchange information is likely to impact coordination. In fact, staging, role-playing and power games were at the core of the disputing legitimacy episode. In the same vein, the last episode suggests that choosing an asynchronous technology to send communiqué can be seen as a strategy to avoid face-to-face interaction and protect from the crisis responders' questioning. In addition, this perspective also suggests that conflicting performance can contribute the absence of shared meaning but be engines for action and coordination, while a consensual performance can promote organizational inertia. Performance is thus linked not only to sensemaking but also to accountability.

Contribution

This study applies a performative perspective to a specific crisis situation in an exploratory manner. Previous studies have taken into account the performativity of groups of individuals involved in critical situations, such as political leaders (Boin, t Hart and McConnell, 2008; Hajer and Uitermark, 2008) and experts (Boudes and Laroche, 2009). However, performativity has been rarely used as an overall perspective on coordination in crisis response. Thriving to develop an original application of the concept of performativity in critical contexts, this paper contributes in three manners to crisis management literature.

First, this study presents performativity as a valuable concept to account for coordination in crisis response. By doing so, we enrich the crisis management literature by enlarging the spectrum of variables usually considered to analyze collective phenomena such as interactions and coordination. In addition, our work exposes the role that a performance can play in the manipulation of information, the emergence of sensemaking. and coordination. On a more theoretical perspective, the performative dimension is based on a richer and more complex concept of sense, and is in search of movement rather of organizational stability. Therefore a performance may lead to increased instability This bring to the front the question of what makes a the felicity of a performance. Performance fuels on ongoing interactions, actions as well as crisis responders' personal myths and emotions. For this reason, one could safely assume that performance is a situated concept, whose dynamic depends on multiple contextual variables, such as hierarchy, organizational culture. Further investigation is necessary to understand how this variables can influence performance among crisis responders.

The second contribution of this work is directed towards managers. Our findings highlight both positive and negative effects of performing on sensemaking and coordination. While the first episode suggests that the adviser's performance diluted the sense of emergency, the second episode reveals that directors' expression of their personal emotion had a positive effect on crisis responders' involvement. For this reason, we believe that managing crisis responders' performance can be an additional resource to prepare and train for crisis response. Thus, we propose that organizations train potential crisis responders train to develop know-hows with respect to performance in a critical setting. Inspiring from acting techniques to propose training session to professionals would be a manner to do so, as numerous organizations did to support improvisational capaibilities. In particular, we view the teaching of techniques to switch between the perspectives of an actor and a spectator during a crisis response would help avoid misunderstandings and coordination in crisis response. For example, we suggest that crisis responders train to jump from one role to another in a crisis simulation to take some distance with their emotions and behaviors. By doing so, crisis responders can improve interactions, detect wether their interlocutors are performig a specific role and mutually share their experience in a debriefing session. In addition, identifiying a repertoire of potential roles played in crisis response can be useful to support the emergence of informal leadership when needed.

As another contribution, the paper questions three tacilty accepted assumptions in the crisis management field.

First, we challenge an implicit but widely shared tenet that crisis response rests on crisis responders' ability to eventually overcome cognitive obstacles. A majority of studies account for crisis responders' efforts either to share a unified interpretation of the situation, either to defend their own meaning ('T Hart, Tindall and Brown, 2009). Ambiguity fuels sensemaking in crisis response (Landgren, 2005) and interactions on multiple meanings is essential to support organizational cohesion. However, the third episode reveals that a persistant chaos during the 2003 French heat wave did not prevent efficient coordination and mobilization, which has two main implications. First, the persistence of multiple and divergent meanings is not always something to avoid. Second, performing emotions such as empathy or anger, can

generate chaos even more but also instigate essential reactions from crisis responders. On the contrary, the last episode demonstrates that shared meaning was not always associated with immediate action and commitment. In sum, among the five episodes presented here in four show that actors faced overwhelming cognitive obstacles. Yet, they managed to develop ad hoc coordination and save lives, depending on the mutual effects of each performance on the others. More than being a question of being able (or not) to interpret a situation propertly, crisis responders' action strongly depends on their own performance of emotions and professional values, as well as their perception of others' performance.

Second, our work reveals that a performance can have a prominent role on the outcome of interactions between crisis responders. Even though organizations seek to optimize access to information and support collective awareness, an organization's likeliness to handle a crisis responders still remains dependant on unanticipable, transformative and uncontrollable variables such as performances. For this reason, our work raises a double alert. Not only important investments devoted to crisis management are limited. In addition, a mechanistic understanding of interactions and coordination that overlooks the performative dimension of crisis response is misleading. Nowadays, a majority of studies in crisis management field strives to provide additional resources or guidelines, going from reliability analysis tools (Jackson, Sullivan Faith and Willis, 2011) to software systems (Netten and van Someren, 2011). However, our findings suggest the limitations of these prescriptions to support crisis response. Our work, on the contrary, echoes previously held arguments with respect complexity of coordination (Argote, 1982; Comfort, Dunn, Johnson, Skertich and Zagorecki, 2004; Comfort, Ko and Zagorecki, 2004). The performative understanding of the 2003 French heat wave crisis response demonstrates that coordination can be fragile and uncontrollable. The first episode depicts a situation where efficient information transmission did not have expected effects but generated organizational inertia. For this reason, does not result from information transmission solely but rather stem from an intricately related set of emotions, strategies and *mise en scène*.

Finally, this work responds to Roux-Dufort's call for further consideration of the conceptual ties between theory of crisis to organization science in general (2007). Traditional thinking in crisis management views crisis as an exceptional event, generating alternative behaviors (Milburn, Schuler and Watman, 1983a; Milburn et al., 1983b) and coordination patterns (Smart and Vertinsky, 1977;1984). On the contrary, our work suggests that, crisis or not, individuals remain both performers and spectators in the organizational arena. While one could safly assume that crisis responders act wisely and put aside their own interests to focus on victims, the empirical reality suggests that even when a crisis obviously demands adaptation and specific behaviors from individuals involved in it, crisis responders still follow individualistic patterns. from this standpoint, crisis management is not a management of exceptions.

Despite all our efforts, our analysis of the case study presented herein presents some limitations. We focus here on a specific crisis case, which could harldy support generalization. Lastly, the concept of performance still needs to be further conceptualized. It is coined as an "essentially contested concept" (Strine, Long and Hopkins, 1990; Madison and Hamera, 2005), in that it has several competing meanings and framings that all contribute to its productivity (Goffman, 1970; Giroux, 2006).

Conclusion

This paper draws on the concept of performativity to provide additional insights on information transmission in crisis response and challenge three tacitly accepted assumption in crisis management literature. Our findings suggest that crisis responders' performance profoundly influencedcoordination. In particular, it generated multiplicity of perceptions and

meanings. In addition, it played an ambivalent role on mobilization and involvement. It helps to better take into account emotions and affects, embobiment, staging and role-playing, divergence of interpretation and absence of shared meaning in responses to crises. In our view, the crisis management literature would benefit from a more extensive use of performativity.

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Appendices

Appendice A: An illustration of data triangulation

While the Health Ministry advisers claimed that they had no idea of the gravity of the situation before 11 August. The emails that were exchanged and received on 7 and 8 August reveal that one of these advisors had recommended that the DGS issue an emergency message about the effect of hyperthermia. This interaction was evidenced in external archives as well. First, the Evin Report mentions that the AP-HP called one of the Health Ministry advisers on 7 August (2004: , p. 97). Furthermore, Patrick Pelloux depicted in his essay his preliminary warnings to the Health Minister at the beginning of the month of August (2004).

Appendice B: Theme dictionaries for data reduction

Organizational crisis theme dictionary	
Subtheme	Definition
Complexity	The extent to which the outcome of the interaction or the interaction itself depends on other interactions or events.
Uncertainty	The extent to which the present situation was unanticipated (defines the concept of surprise that characterizes crisis) and the extent to which the future is difficult to anticipate., (in particular when it comes to the outcome of the interaction)
Triggering event	The first signal that starts the crisis response.
Emotional Pressure	The extent to which the situation is stressing participants.
Time pressure	The extent to which cannot take their time to interact
Contradiction	The situation is perceived as contradictory for the participants
Rigidity threats	Describes the organization's tendency to urge and strengthen preplanned procedures in reaction to crisis (staw et al., 1981). It may questions the organizational ability to improvise or, on the contrary, stimulated improvisation
Centralization	Describes the organization's tendency not to delegate and centralize power (Smart and Vertinsky, 1977)
Entropy	Defines a disequilibrium in terms of energy that individuals spent to achieve their tasks (Katz, Kahn, 1966; Morin, 1977)

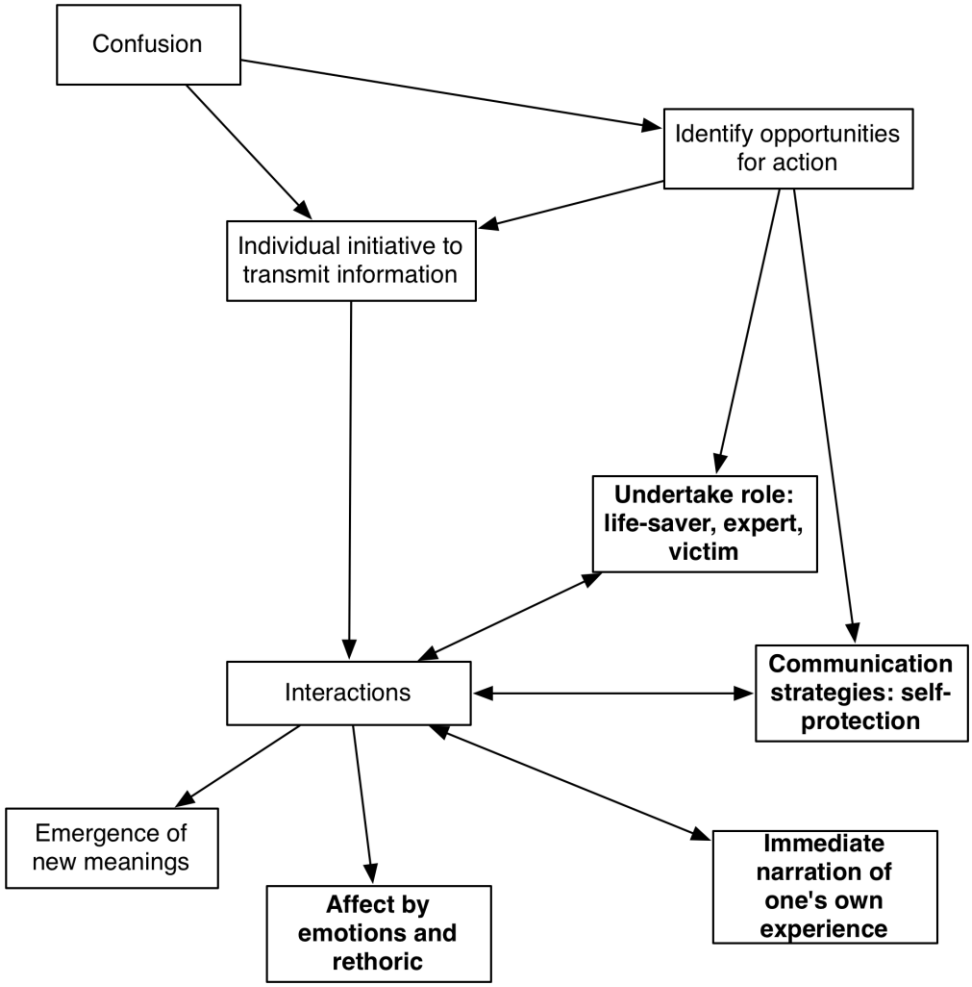
Organizational structures and functioning theme dictionary	
Subtheme	Definition
Hierarchy	Describes the formal distribution of power and responsibilities within organization
Organization mission	Defines the primary organizational raison d'être.
Organizational culture	Describes the major values that exist in regards to work, workers and organizational functioning (Martin, 1992)
Technological infrastructure	Describes the hardware resources, software resources and competencies (Byrd, Turner, 2000)
Location	The geographical locations of an organization.
Interorganizational Connections	Determines entities the organization connects to (both in routine and crisis situations)
Sub systems	Describes the sub parts of the organization.
Communities of practice	Defines the professional group that gathers individuals having common interests and practices (Wenger, 1989)

Individual characteristics theme dictionary	
Sub-Theme	Definition
Reactivity	Describes the personal ability to react to events or to provide help to co-workers.
Professional Values and expectations	Personal expectations in regard to professional activities and professional values in general. Depends on the individual's status in the organization.
Reference group	The set of people the participant perceives as belonging to his or her work environment that defines the social world of work in which he or she engages (Lawrence, 2006)
Crisis experience	The personal or professional experience of crisis and emergency situations.
Crisis response participation	The willingness or the ability to participate into crisis response.
Collaboration	Describes the personal experience of collaboration and values in respect to cooperation
Cooperation	Describes the personal experience with previous collaboration and personal values that are related to cooperation.
Personal experience of the heat wave	The extent to which the participant suffered from Heat Wave outside his or her professional activities. Accounts for a deep emotional experience of heat wave

Appendice C: Critical Incident Chart

Date	Events
4 August 2003	**Alerts from DDASS 56**
5 August 2003	Various alerts
6 August 2003	Request for the production of a memo from the DGS (*).
7 August 2003	**Alerts from Parisian hospitals and SAMU with respect to resources shortages: beds.** Settling of a monitoring cell of Parisian public and private hospitals
8 August 2003	Email alerts and requests from a Parisian ERT (*). Settling of a crisis cell within the AP-HP **The AP-HP a public message comprised of guidelines to follow to alleviate the side effects of the heat** Completion of the memo – that will be sent on Friday evening (*).
9 August 2003	**Claim of shortages of resources and overwhelmed mortuary chambers**
10 August 2003	**Dr. A's interview on television** Directors' press release
11 August 2003	***A national crisis meeting between civil protection and health care organizations takes place. Dr. A is among the participants. At the end of the meeting, he has an opened argument with the DGS director.***
12 August 2003	**Message of Support from the DHOS director**
13 August 2003	Temperatures decrease. *Official "Plan Blanc" is triggered.*
14 August 2003	*The controversy with respect to statistics*
Legend	Events in **bolt** had a catalyctic effect on crisis response. Events in *italic* triggered conflicts. (*): Events that were not followed by an immediate reaction.

Apprendice D: The emergence of the performative side of interactions between the 2003 French heat wave crisis responders



Appendice E: Acronyms

INVS: Institut de Veille Sanitaire

AP-HP: Assistance Publique – Hôpitaux de Paris

ERT: Emergeny Room Technician

SAMU: Service d'Aide Médicale Urgente

DGS: Direction Générale de la Santé