# Understanding the French 2003 Heat Wave Experience: Beyond the heat, a Multi-Layered Challenge

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**The 2003 heat wave killed nearly 15,000 people in France. It was a stealth killer. "We did not notice anything", as the Minister of Health declared to the Parliamentary Commission. It is of crucial importance to understand the keys to this collective failure, which has much in common with the Chicago experience in 1995 –the lessons of which had not been grasped nor learned.**

**A four-layered challenge explains the fiasco.** *The emergency challenge*, **which is not the realm of bureaucracies outside the "9/11" bodies.** *The crisis management challenge*, **largely documented since the 80s and the 90s, but still poorly known by most organisations, in France and elsewhere.** *The unconventional crisis challenge*, **emerging more and more today with "outside-of-the-box" scenarios – and for which very few are ready to prepare, in any country in the world. The "*texture*" challenge, when the whole fabric of our complex systems (rather than just some specific segment) is suddenly deeply affected — an entirely new front-line in the crisis world, which urges to switch from a mechanical or an architectural to a more "biological" approach to read, seize, and handle emerging csrises.**

**The 2003 heat fiasco compels us to prepare for far more than climate-related crises. It calls for a fresh and bold look at our crisis paradigms. As General Foch said: "Gunfire kills, but so do outdated visions".**

## Introduction

The summer of 2003 will remain a summer of collective failure in France. Nearly 15,000 people died, killed by an unprecedented heat wave phenomenon *and* the system's incapacity to meet this lethal event. The episode seems simple enough to describe, at least in retrospect: June had been hot, July very hot, and the 4–14 August period witnessed a unique weather pattern, with the highest diurnal and nocturnal temperatures and the longest sequence of consecutive hot days in the French meteorological history (at least since the XIXth century).

This is not to say that heat waves were entirely unheard of in France: in 1983, a first episode killed more than 300 people in Marseilles —but the event did not impact national awareness. In 1976, France experienced a very dry summer, which caused many casualties— yet the death toll was never thoroughly investigated, and the episode was described as a mere "drought". Outside France, heat waves killed 2,000 in Athens in 1987, and more than 700 in Chicago in 1995, but these crises did not attract much attention. Eric Klinenberg's remarkable analysis of the Chi-

cago episode (Klinenberg, 2002) remained unknown in France. This was a striking example of a collective inability to develop debriefing and learning processes at the international level, which is all the more regrettable as nearly all the difficulties, traps, and failures carefully analysed by Klinenberg were again apparent in the French case eight years later.

In many respects the French response was very similar to the Chicago governance model in the 1995 episode, as described by Klinenberg: "Deny, Deflect, Defend" (Klinenberg, 2002:168). On the whole it followed the basic counter-checklists in crisis management (Lagadec, 1993; Lagadec, 2002).

- The first medical doctor's outcry: "Hospitals emergency services are overwhelmed" (August, 8–9) was dismissed as one more instance of biased recriminations against hospital budgetary cutbacks.

- The first media reports: 14 killed (August, 9) were similarly perceived as media sensationalism.

- The first government move (August,11) was to denounce "politically motivated polemics".

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- The first minister of Health media intervention (August, 11) was to underline that "everything's under control".
- After it became obvious that these denials were untenable, "deflect and defend" became the official line of defence: "Nobody informed me", "The Institute in charge of monitoring the health situation did not play its role"; "It is absolutely unprecedented", "Nothing could be done anyway", "The victims were elderly people and they would probably have died anyway", "Families tend to abandon their elderly parents nowadays", "All doctors should not go on holiday in August". The minister of Health even criticised his own services for their poor response, which led to the resignation of the General Director of Health, an international leading expert in epidemiology.

But the death toll rapidly demanded more than basic stonewalling. Several reports had to be commissioned, including a brief investigation into the impact of the event (Institut de Veille Sanitaire, 2003) and an assessment of the response of the health system (Lalande et al., 2003). Parliamentary investigations (Assemblée Nationale, 2003; Sénat, 2004) were launched and the National Assembly set up a Commission of Inquiry (Assemblée Nationale, 2004).[1]

These inquiries put under scrutiny the attitude of the major actors during the crisis, namely:

- The Ministry of Health and its three central administrative bodies (Health, Hospitals, and Social Services); the Minister himself, and his cabinet; and the National Institute for Health Surveillance, responsible for monitoring the health status of the entire French population and alerting public authorities of threats to public health.
- The Ministry of the Interior and its national "Operational Centre for the Management of Crises".
- The emergency organisations (medical services and firemen), along with two prominent figures: Prof. Pierre Carli (Head of Paris Emergency Medical Service – EMS), who was the first to document the problem and to set up operational protocols; and Dr Patrick Pelloux (President of the trade union of Hospital emergency services physicians), who was the first to alert the media, after unsuccessfully trying to do so with the authorities.
- Many other actors, especially hospitals, nursing homes for elderly people, physicians, etc.

Thousands of pages were published to establish the facts, clarify responsibilities, and draw lessons for the future. However, these reports specifically aimed at preparing the country for a similar heat wave in the future. While there is no doubt that this is a legitimate need, the scope of these reports remained unsatisfactory, since we should "Never Prepare for the Last War". Indeed, heat arguably was not the core of the 2003 fiasco. But then, what was?

In a nutshell, organisations and people in charge did not have the intellectual and practical frameworks to respond adequately to the 2003 heat episode. Worse still, our current frameworks will continue to be deficient when confronted with future emerging crises (Quarantelli, 1996; Dror et al., 2001; Boin and Lagadec, 2000). A four-layered challenge had to be met in 2003, and the system as a whole proved to be partially or, more often, totally unprepared to do so. The goal of this paper is to clarify this multi-layered challenge, beyond the heat.

## Emergency: the Basic Fault Line

*The 2003 Heat Wave Episode*

The weather had been unusually warm since mid June, but this was no cause for alarm before the early days of August: what a beautiful summer! Many problems arose, such as huge forest fires in the South. The health problem emerged around the 6th of August, with an increase in the number of emergency calls and emergency services activity in the hospitals.

On the 6th, a member of the Minister of Health's cabinet, a specialist in epidemiology in charge of public health problems, requested the Health central body to prepare a communiqué. This was issued two days later, on Friday the 8th, late afternoon. Meteo France's first warning was published on the 7th, with specific advice, including health recommendations for elderly people. The National Health Surveillance Agency decided that a proper survey would be launched on Monday, the 11th – since no scientific survey could possibly be launched on a Friday afternoon. During the weekend, the situation worsened considerably, and hospital emergency services struggled to cope. Hospitals in Paris were put on high alert by their directors, and some adapted form of a general emergency plan was declared. The Minister of Health went on TV in the evening of Monday the 11th, to "reassure" the public. The national political leaders condemned all those who according to them "viciously exploited" the situation.

The first national reaction came as late as the 14th, when the Prime Minister ordered a general mobilisation in hospitals. Ironically, the heat wave came to an end on the same day.

Naturally, emergency services, when called upon, were prompt to react – instant response is the foundation of their culture and their identity. But the cases to which they responded only

formed the tip of the iceberg, since many victims did not call.

Accordingly, many other organisations would have had to react urgently to ensure an adequate response to the crisis at a national, regional and local level. The heat wave called for the sudden mobilisation of several processes and mechanisms, i.e. monitoring, communica–tion with the public, general organisation and response capability of hospitals and nursing homes, care to elderly people at home, etc. The difficulty was for the many services unexpectedly and suddenly to change the status of their readiness and level of activity, from normal to emergency mode. However, this emergency mode is foreign to most organisations, outside the ''911'' services.

Many systemic flaws soon became apparent. In August, most people in charge, especially directors, were on a holiday, which impeded a swift modification in the status of mobilisation. (This was exactly the same in Chicago (Klinenberg, p. 132–137).

Scientific monitoring of public health problems was not organised in a spirit of emergency: culturally, ''scientific'' studies have to be carefully programmed before being launched. Data and signals were lost in the corridors. Communiqué writing and re-writing, in day-to-day bureaucratic life, can take days; it took two days during the heat wave crisis. The primary impulse of officials was not to seek extra information, organise meeting and set up networks, take decisions, and act.

This behaviour is not strange within the administrative culture and not a monopoly of the French.

### The First Cultural Gap

Bureaucracies in general are not organised for instant responses to the global challenges arising in emergency situations. The new element during the heat wave was the large number of administrative bodies called upon simultaneously to switch to an emergency mode, and suddenly develop several capabilities under intense pressure, namely:

- *Reactivity*: instant reaction, to alert, to act, and to report.
- *Discipline*: strong and clear procedures to be applied and followed.
- *Leadership*: all members of the hierarchy in their respective roles have to be careful, vigilant, prompt to intervene and take their responsibilities, to prevent power- or decisional vacuum and confusion.
- *Follow-up*: from the first instance, detailed log-books have to be kept, to ensure that no information, no data, no question is lost and not acted upon.

- *Control:* no problem should be left alone; no one should assume that the difficulty he/she perceives ''has certainly been identified and solved by someone else'', that any borderline problem ''can't possibly be his/her problem'', or that problems should not be addressed as long as the situation is not perfectly clear and understood.

Bureaucracies are organised and trained to work on stable data, formatted problems. Their culture is more ''file-building'' oriented. Their basic frameworks of reference are established rules, clear and fixed partitions of areas of competence and levels of responsibility, top-down dynamics, and a programmed time frame. This culture is so prevalent that it permeates monitoring, even when obviously incompatible with the task at hand and its time frame.

For urgent situations, the common practice is to rely on emergency services. However, the problem is that this compartmentalisation does not work so smoothly any longer. Many organisations, apart from the ''911'' world, have to intervene; and some emergency services can fail to mobilise, when events at first glance do not seem to be clear-cut ''emergencies'' because they do not fit the format to which these services are also accustomed (e.g. ''heat does not qualify as a ''disaster'' since there is no specific heat disaster plan'').

Naturally, solving the crises we are confronted with in our increasingly complex societies will require much more than the basic abilities to handle emergency outlined here. But if these aptitudes are wanting, or – worse still – if the culture is adverse to these requirements, then further failure will be unavoidable.

## Crisis: the Classic Fault Line

### The 2003 Heat Wave Episode

As usual in crises, there was no clear alert. The reported signals were very rare and extremely weak: two or three cases were mentioned to the Health administrative central body on the 5th, from a region that was not significantly affected (Brittany). Meteo France published a communiqué that was admittedly very adequate, and especially included advice to elderly people, but was issued quite independently from the Health Ministry. The general picture was globally misleading: ''firemen are coping with the situation''. Specific figures were wanting, since the death reporting format did not include the heat cause as such. The collation and treatment of statistics could not facilitate instant wake-up call and decisive action: statistics are built for files, clarified after 6 months, used in the long run.

This is not to say that no attempts were made to ring alarm bells. Dr Pelloux's (President of the trade union of Hospital emergency services physicians), warnings were especially forceful, but failed to elicit any reaction, especially because his message ended up at the central body in charge of Hospitals, while it "should have arrived at the central body in charge of Health" – two central administrative bodies which ironically shared no real links at the time, though housed in the same building). In addition, when alerted by Dr Pelloux, the Minister's cabinet dismissed his fears, claiming that the cases he had signalled were mere "natural deaths".

> The same was said in Chicago by the Mayor: "Everyday people die of natural causes. You cannot claim that everybody who has died in the last eight or nine days dies of heat. Then everybody who has died in the summer that dies will die of heat" (Klinenberg, 2002:172).

Prof. Carli (Head of Paris Emergency Medical Service – EMS), after active investigation on the web on Friday evening, clarified an operational protocol, linked with other medical emergency services and the Paris Firemen, and set things up to be ready for action on the next morning (Saturday 9 August).

On Saturday and Sunday 9 and 10th, Dr. Pelloux spoke out in the media, warning that a disaster was looming. But the "system" remained deaf to all this "noise", dismissing it as the product of an "activist".

> The same old story was remarkably clarified by the official Inquiry Commission on BSE: "Dissident scientists tended to be treated with derision, and driven into the arms of the media, and to exaggerated statements of risk. Thus views expressed on risk became polarised. Dispute displaced debate." (Lord Phillips et al., 2000: § 1182, 234)

However, in our case, Dr. Pelloux was not exaggerating. While he spoke of some 50 deaths, at the time, in fact, not 50 but thousands of people had already died because of the heat. Ironically, he was attacked later on for having suggested such a small, and (with hindsight) erroneous figure. Those were difficult times indeed for whistle blowers. Damned if you do issue a warning, damned if you don't, damned if you failed to convince those who were intent on dismissing your warnings anyway. Disputing that "everything is under control", that "there is no cause for alarm, nothing is happening" was unacceptable. Institutions are bound to dismiss and reject these alerts, which they see as something akin of a treason. The challenge is to change these tendencies to denial and avoidance in crisis management.

Dr Pelloux failed to wake up the "system" —an arcane constellation of improbable organisations that could hardly be identified, charted, reached, and mobilised in a coherent and concerted way. A notable exception was the Paris Hospitals Agency. On Friday evening, the secretary general sent a warning to each hospital: "I urge you to take all the necessary measures to handle this exceptional situation".

By Monday, 11th, the heat wave, which was fast developing into a national disaster, had become a front page story. "Heat wave kills in France" (Le Figaro); "Heat wave now a national tragedy" (Le Parisien). "More than 50 dead" (AFP); "Government accused of passivity" (AFP).

On Monday evening, the Minister of Health, at the peak of the death rate, appeared on TV. He gave a soft-spoken interview, from his holiday house on the Riviera, in casual dress, and a gentle breeze moving the Mediterranean pines behind. In essence, all he had to say was: "So many figures are heard, the death rate is being monitored since the beginning, it is difficult to say why elderly people die, a hot line will be set up". Some 20 minutes before the interview, the Minister's cabinet in Paris had been informed that the situation was potentially more serious than was being admitted. But it is not clear whether that message was transmitted to the Minister, who was then getting ready for his media performance.

Soon afterwards, though members of the Government kept dismissing the controversy as despicable and politically driven, it became clear that some radical strategic change had to be made. On its way back from his vacations in the Alps, the Prime Minister visited a retirement home, and handed water to elderly people in front of the cameras. Back in Paris, he decided to launch a general emergency plan to help hospitals cope with a huge number of patients (August, 14). On the same day, the conjunction of increased governmental mobilisation and cooler weather brought an end to the crisis *stricto sensu*.

Then the stage was opened for "the crisis after the crisis" ('t Hart and Boin, 2001).

### The Second Cultural Gap

The heat wave confronted the "system" to the crisis challenge, which few organisations are really prepared for:

- *Large impacts, large populations affected*: not a single spot or even region, but the country as a whole and even the continent.
- *Resonance phenomena*: it was necessary to take into account the combined effect of age, drugs, previous illness, pollution.
- *Emergency systems themselves not equipped to cope*: emergency rooms were short of cool

areas; they lacked sufficient personnel to look after such an unusual number of patients; since the number of hospital beds had been decreased for the summer period, emergency rooms were rapidly overwhelmed: though meant to deal with patients only until they can be redirected to relevant sections of the hospitals, ERs of necessity were turned into long-term waiting and treatment zones.

- *Extreme uncertainty*: at least in the early stages of the crisis, no "heat illness" as such was identified or acknowledged, the dynamics of the whole process was uncharted, the duration of the episode was unknown.

- *Critical communication problems*: i.e. within the responsible organisations, with the victims, the media, and the public. Coping adequately with the crisis would have required suddenly bridging the gap between many unrelated organisations, clarifying new questions, sharing data and protocols.

Inadequacies in meeting the challenge were significant and unavoidable, in view of the basic managerial culture of most organisations, characterised by the following visions and operational frameworks of reference:

- *A stable and surprise-free world*: each organisational niche works on its own problems, "all things remaining equal" in the outside world.

- *A response culture*: crises force organisations into a question-oriented type of management, which in most cases conflicts with fundamental and deep-rooted aspects of their culture, i.e." we are here to solve problems, not to ask for questions".

- *A yes-or-no response culture*: to alert, react, and mobilise, organisations need to be entirely satisfied that a clear and imminent danger is impending or that a serious event has definitely taken place, and therefore require clear and strong signals, through convenient channels, in requested formats, etc.

- *A step-by-step, top-down, centralised approach*: before making any public move, organisations want a thorough, zero-risk scientific understanding of the alleged event; they then consult their hierarchy; a policy decision is taken, and – ideally – once everything is back under control, information may be released to the general public to "reassure" laypeople.

- *Public information, as a high risk move*: bureaucracies tend to assume that the public is prone to "panic": therefore, the less you tell, the better; the usual reaction, even if media communication is often praised in principle, is to communicate late, say little and always reassert that "everything is under control".[2]

Because of these deep-rooted cultural frameworks of reference, it is hardly surprising that organisations tend to fall into the following traps during crisis episodes:

- *Inability to detect, or search for, signals*: weak signals are often undetected and ignored; when fear is too high, even strong signals are dismissed. (*Before the events or in elegant presentations most officials would deny that observation, and praise their emergency response capacity; but, unfortunately, reality show that, during crises, lack of effective preparation drives to very strange, deaf and dumb behaviours*).

- *Laborious mobilisation*: before any move, everyone, at all levels of the organisation, wants to be satisfied that the situation is truly serious, and that it is truly necessary (and not overly dangerous) to take action.

- *Divisions, partitions, demarcation lines*: each body, sub-body, level, and group tends to isolate itself from the others in a wait-and-see defensive attitude.

- *Vertical isolations*: each layer tends to protect itself behind "watertight bulkheads".

- *Dramatic errors in communication*: unfortunate and untimely phrases and statements are issues, e.g. "natural deaths", "elderly people will die", "nothing can be done as long as we do not have the precise figures of the death toll".

- *Scapegoat searching*: every actor in the crisis is being blamed in his turn, even, eventually, the victims themselves. As the Mayor of Chicago said in 1995: "We are talking about people who die because they neglect themselves" (Klinenberg, 2002, p. 172).

In fact, poorly prepared organisations and individuals are unable to react adequately in crisis situations, which require:

- *Sharp and wide open surveillance abilities*.

- *Swift reports*, even upon weak signals, through organised channels.

- *Upgraded monitoring capacity, crisis team-work and data-sharing*: working together, sharing questions and information, to counteract groupthink (Janis, 1982) and dispel unfounded assumptions, i.e. an "unsinkable-*Titanic*" syndrome.

- *Ability to mobilise expertise in crisis*: i.e. the immediate capacity to look out for uncertainties and surprises, not for definitive and settled answers.

- *Sharing of leadership, network-based decision-making*, far from the "command and control", top-down model (only useful for simple events).

- *High-quality communication from start to finish*: the key is not obsessively to "reassure" when it is obvious that leaders are unable to cope, far from reassuring the public, rather triggers profound anxiety and distrust – "our leaders are not in control and are lying to us"); the only adequate way to "reassure" is to remain thoroughly professional, especially with regard to public communication, which must be specific, clear, and frequent.

- *Management of the crisis to the very end*: "It's not over till it's over; too often, efforts are stopped much too early, i.e. at the first signs of improvement, and the crisis starts again.

- *Strategic intelligence*: this is a crucial element, and the most serious shortcoming in most crisis organisations. When a situation is blurred, very unstable, and the stakes are exceptionally high, it is necessary that, beside leaders, some individuals or group should be able to sit back and think, anticipate, and ask the questions that those directly in charge are too overwhelmed to ask: "what if, what next? ". However, in most cases these bodies are rejected by the system; their suggestions are dismissed by the allegedly more "gutsy" assumptions that "in crises, you don't think, you act", "in crisis you don't have time to think"; such supposedly "virile" stands are unfortunately all too common in times of crisis.

- *After the crisis, a careful healing process*: the normal move, once the last journalist and the last camera have left, is to call the public to "move on and make a fresh start". But in fact wounds —and shortcomings — do not vanish so easily. Denial and avoidance in the long term will achieve nothing; only a careful healing process will.

All these features played a crucial part in the 2003 heat wave episode in France, as they did in the Chicago heat wave eight years previously. This is a normal outcome when preparation to crises is inadequate.

In the 1990s, the analysis at this stage would have been considered sufficient; but today we have to pursue it further. More specifically, two additional lines of enquiry should now be considered.

## Unconventional Crisis: the Emerging Fault Line

### The 2003 Heat Wave Episode

A series of traps impeded adequate responses to the challenge presented by the 2003 heat wave:

- *Inadequate mindsets*: "Hot and sunny weather in the summer, where is the problem?";

Bernard Kouchner himself, the famous founder of Médecins sans Frontières (the "French Doctors") and a former minister of Health, said it bluntly: "What society do we live in when people call for government help when it is hot or cold ?" (AFP, August 11).

- *"Noisy context"*: Heat was not the only problem. Drought, out of control forest fires, problems with the railways, very high levels of pollution, potentially serious legionella-epidemics in the South of France, and, last but not least, a serious problem concerning nuclear power plants had to be handled at the same time.

- *Unusual geographical pattern*: contrary to anticipated patterns, the heat wave was more severe in the Paris area and central France than in the South.

- *Monitoring difficulties*: that kind of disaster do not give prolonged early warnings; in a way, people in charge are trained to measure the waves to be able to forecast potential problems, and suddenly they are confronted with a ground swell – no visible sign, brutal effects.

- *An unusual killer*: the lethal process is not gradual; apparently, people are well, and, after two or three days, they die brutally– their defence system is submerged. Usually, the body can cope, adjust; with a heat wave duration, suddenly, the system can no longer cope.

- *Inadequate data monitoring*: it is naturally assumed that the monitoring of high temperatures is the key. But other crucial data should also be followed very closely: namely the number of consecutive days of high temperatures and the level of the lowest temperatures during the night. Indeed, the death-toll rises because patients cannot rest, even for a few hours, in a cooler atmosphere.

- *Unusual data*: national disasters commonly involve enormous figures. But during the heat wave, a tiny difference in temperature can make a lethal difference: people can cope when it is say 23°C at night, but die when it is 25°C, depending on several combined factors (hence the difficulty of any comparison between towns, regions, countries). Handling adequately such minute modifications is especially challenging.[3]

- *Inadequate focus of attention*: when hospitals are flooded with patients in critical condition, people in charge naturally focus on emergency rooms; but in doing so the system fail to understand that those who reach the hospitals are the ones who survived —many others are probably dying at home.

- *Stealth problems*: It is commonly assumed that disasters will result in conspicuous and un-

mistakable statistical peaks. Yet during the heat wave, this was not the case. Emergency units on the ground did not perceive heat *per se* as *the* overriding cause of rising health problems; statistics were not adequately formatted and therefore did not yield unmistakable, alarming figures. As for old people's homes, they generally experienced no clear and alarming increase in the number of deaths: when, over a month, the death toll in each scattered institution increases from one to two deaths, or from two to three, nobody thinks to sound a national alarm.

- *Scientific gap*: officials and even physicians were not fully aware of the possibility that heat could kill by itself; the tendency was to focus on the notion that patients suffered because previous illnesses had merely been aggravated by heat. Even those who had adequate theoretical knowledge of the consequences of a heat wave did not measure the potential scale and seriousness of the problem. Unable to acknowledge this extraordinary phenomenon in its own right, some doctors chose to explore which illness could explain extreme body temperatures, and which antibiotics could efficiently be prescribed.

### The Third Cultural Gap

In the 1980s and the 1990s, crises were approached as specific, limited events, though it was acknowledged that they were in essence uncertain events, required networking between various organisations, and could snowball into uncontrollable developments. However, in the crises of the 21st century, due to a context of increasingly rapid change and high levels of complexity and interdependence, new features have become the dominant characteristics to take into account. The most significant challenges are the following:

- *Discontinuity*: Our intellectual tradition is ill-suited to deal with sudden mutations and non-linear qualitative jumps. Our intellectual baggage corresponds to a world of stability, linearity, marginal and limited uncertainty, where theatres of operation are clearly compartmentalised. But this is not the world in which today's crises emerge.
- *Global dynamics*: As became apparent with Sars, and with heat wave episodes, we can be confronted with global phenomena. Prevalent strategies and mechanisms of crisis management are poorly prepared to adapt to the scale and speed of propagation of emerging crises.
- *Complex symptoms*: Our emergency culture is primarily equipped to grasp specific, limited

problems, and solve them through specific responses. Yet new crises correspond to complex ''symptoms'', intermingled sets of problems that suddenly combine into an intricate pattern. Our Cartesian paradigms have the greatest difficulties to function in such a context: they are more adapted to clear-cut fields of enquiry and self-contained problems. Some kind of ''rhizome'' approach is required, but our initial and natural instinct is always to reject ''messy'' realities and attempt ''boil them down'' to more readily understandable issues. Managers are keen to address anticipated and identified problems, and dread being confronted with emerging ''symptoms'' and extraordinary challenges.

- *From uncertainty to ignorance*: Because of the emergence of such critical and highly unstable contexts, we will increasingly be called upon to cope with a high degree of ignorance when addressing today's crises, rather than with the level of ''reasonable'' uncertainty that we are more accustomed to tolerate in such situations. This is far removed from our prevalent culture of management and governance. While we are used to relatively stabilised knowledge, we are more and more confronted with totally unexpected phenomena that do not fit with the basic principles sustaining our understanding of the world. The BSE crisis provided an illuminating example of this type of challenge, since it shattered the dogma that barriers between species are always insurmountable.
- *Decision and expertise*: The prevalent compartmentalisation of responsibilities in crisis-management was ''logical'' and comfortable – experts provide relatively clear-cut analyses, on the basis of which political and other leaders take their decisions, and finally the public is informed. However, the context of today's crises makes this strategy obsolete: the more scientists study the problem, the more uncertainties blossom; decision-makers have lost their monopoly on public information and communication: in fact the public is kept permanently informed through a myriad of sources, and is especially made aware of the most dramatic possibilities; this is all the more problematic as experts are now unable to provide decision-makers with such undisputable data that would help them ''reassure'' the public and dismiss criticisms.
- *Public communication*: Numerous books and checklists have been published to clarify the basic rules of ''successful crisis communication''. Their advice is certainly valuable, but far from sufficient. In emerging crises, something akin to the ''Larsen effect'' becomes immediately prevalent: each and every

"noise", i.e. item of information, is "recycled" in real time, and stretched to the limit. Very rapidly a mingled bulk of confusing data emerges in the media, combining real facts, false impressions, hypotheses, plausible developments, improbable – but not impossible – scenarios, political rifts, public anxiety, plain lies etc., a medley which is all the more inextricable as each media outlet recycles the stories of its competitors and echoes (and distorts) the reactions which its own stories provoke – at the highest speed, and internationally.

- *Management*: Emerging crises confront our managerial culture with entirely new challenges. As Ralph Stacey emphasised in 1996, "at least 90% of textbooks on strategic management are devoted to a relatively easy part of management, namely the running of organisations in as surprise-free an environment as possible. On the contrary, the real challenge of management is to handle exceptions, to cope with and even use unpredictability; this challenge has to do with instability, irregularity, difference and disorder." (Stacey, 1996) One of the lessons of recent crises is that very few people are adequately trained to adapt to the loss of traditional frameworks of reference.

- *Governance*: Emerging crises require more than the "technical" involvement of government officials. These crises are often in part identity crises, they challenge the foundations of organisations, governmental practice and even societal cohesion. Therefore, it is imperative that the highest leaders of organisations and government should acknowledge this challenge and instantly meet it. Their most important task is not so much to "manage" the crisis in the limited sense of the term, but more generally to clarify policies and frameworks of references, to elaborate new rules and guidelines, to reassert or redefine the roles and statuses of those involved in the response to the crisis, etc. However, these leaders are highly unlikely to respond in this way if they are not thoroughly trained to do so.

Fortunately, we are now equipped with a roadmap to meet these challenges and improve our chances of successfully coping with today's crises. The key elements are the following:

- *A non conventional monitoring activity*: Traditional monitoring should be complemented by the capacity to look out for emerging phenomena, "outside the box", boldly and vigorously.

- *Strong involvement of leaders*: when new avenues need exploring, the personal involvement of the highest leaders is imperative.

Rudolph Giuliani, the Mayor of New York at the time of the 9/11 attacks, was personally involved in simulation exercises; all political leaders should follow his example. The point is not for politicians merely to rely on specialists, but to prepare personally to play the most difficult role in emerging large-scale turbulence. Failing to do so will almost inevitably result in fiasco.

- *Scientific and technical expertise*: In anticipation of the most challenging crises, the key is a collective capability to elaborate new references and intellectual flexibility when unexpected situations arise and traditional frameworks of references become obsolete. The goal is to be able to answer rapidly the questions that can be answered, identify those that cannot, and assess the actual margin of uncertainty of those that are supposed to have already been answered.

- *Decision-making expertise*: During destabilising episodes, the first natural move is to call for technical solutions, precise figures, and ready-made answers. A more adequate reaction, on the contrary, is to set-up think-tanks, open questions, identify crucial mistakes and traps to avoid, look for innovative procedures, especially by relying on specialists of "outside the box" strategies.

- *Communication*: When confronted with very acute problems, people in charge are naturally eager to find and provide immediate, "reassuring" solutions. However, the first step to take is in fact to clarify the issues, and the procedures through which they can be tackled. Lacking adequate training, leaders most often will fail to adopt the latter strategy, in favour of the former, more "instinctive" approach; this in turn will inevitably result in a fiasco, since it will rapidly become apparent that the alleged solutions are mere illusions, and therefore in a breakdown of public trust in political and other leaders;

- *Initiative*: The "instinctive" strategy is to elaborate a theoretical solution to the crisis, and then set up a rigid system of guidelines to apply it, while providing assurances that the crisis is thereby going to be solved, at least if no one interferes with the chosen solution. On the contrary, intricate crises can only be adequately tackled through *ad-hoc*, pragmatic attitudes, and a readiness to be open to initiatives suggested by all actors at every level. It is crucial to inject action, intelligence, positive energy, rapid monitoring and adjustment processes into crisis management. In more pragmatic terms, that implies finding one or two specific initiatives able to stimulate the mobilisation of a large network of actors, and step-by-step rebuild confidence.

These developments could be labelled as ''theoretical''. They are not: the organisations that reacted most adequately during the heat wave (SAMU, some Hospitals) did exactly that, at least to some extent. The challenge is to develop these abilities in as many organisations as possible – especially at the highest level, paradoxically among the most poorly prepared.

## ''Texture Crisis'': a Counter-Intuitive Horizon

### The 2003 Heat Wave Episode

In many respects the 2003 drama was a very strange event. It did not ''play by the rules''. It caused a huge death toll, but had no clear front line. It would have required a national mobilisation, but how and with whom?

- Where was the epicentre of the disaster? Everywhere and nowhere.
- What was the central target? The old, isolated people.
- Which was the most dangerous place? For these old, isolated people, probably at home, in bed. There was no clear, all-embracing battlefield, but rather multiple, scattered areas of local emergency on various ''microgeographical'' scales: certain regions (though not the South, contrary to expectations), certain suburbs, the top floors of buildings (under the roofs), elderly people nursing homes.
- When did the National Crisis Centre noticed that a disaster was unfolding? When it was over.
- Where were the best resources to combat the heat? Everywhere, and they were basic and readily available: ice and water, used by members of the public —families, friends, neighbours, charitable organisations.
- What kind of technology was the most appropriate to tackle the emergency? ''Low-tech'' resources and ingenuity were crucial, since it was much too late to set up sophisticated cooling systems. Such measures included covering windows to keep out the sun, putting clothes in the freezer before wearing them, placing humid towels next to a fan ; going to the cinema (regardless of the film) to enjoy a cooler atmosphere, etc.

In other words, the situation had to be approached through a social vision. That would require another model of crisis prevention and management – *with* the people, within the most tiny complexities of the social fabric.

### The Fourth Layer Cultural Gap

The Chicago precedent would have been very fruitful if it had been known at the time, even if the French situation in general is far less socially contrasted:

#### Eric Klinenberg's Social Autopsy
''Silent and invisible killers of silenced and invisible people''(Klinenberg, 2002)

- ''The weather accounts for only a part of the human devastation that arose from the Chicago heat wave. The disaster also has a social aetiology, which no meteorological study, medical autopsy, or epidemiological report can uncover.'' (Klinenberg, 2002: 21). ''Heat waves receive little public attention because they fail to generate the massive property damage and fantastic images produced by other weather-related disasters, but also because their victims are primarily social outcasts – the elderly, the poor, the isolated– from whom we customarily turn away. '' (Klinenberg, 2002: 17)
- ''Public health researchers had found that Chicago's African Americans faced the greatest risk of mortality in the heat waves, while Latinos were most likely to survive. [...] In North Lawndale (African American zone), the dangerous ecology of abandoned buildings, open spaces, commercial depletion, violent crime, degraded infrastructure, low population density, and family dispersion undermines the viability of public life and the strength of local support systems, rendering older residents particularly vulnerable to isolation. In Little Village [Latinos zone], though, the busy streets, heavy commercial activity, residential concentration, and relatively low crime promote social contact, collective life, and public engagement in general and provide particular benefits for the elderly, who are more likely to leave home when they are drawn out by nearby amenities. During the heat wave, these local conditions directly affected residents of the two community areas by constraining (in North Lawndale) or creating (in Little Village) the possibilities for social contact that helped vulnerable Chicagoans to survive. [...] Thus, urban regions such as North Lawndale and Little Village can be distinguished not only by the identities of their inhabitants, but also by the structure and texture of their social and physical environments'' (Klinenberg, 2002: 91)

In France too, even less clearly, the crisis did not strike at the ''skeleton'' of the system, but at its ''flesh''. This challenge proved to be especially difficult to tackle since it did not correspond to the traditional emergency culture, or the recent crisis management codes.

The response to this type of crisis has to incorporate very large number of social networks, people who are complete outsiders to established and recognised hierarchies. How do we identify the — isolated — victims before it is too late? How do we mobilise strangers and unusual organisations? How do we invent *ad hoc* solutions?

A stimulating initiative was launched in France in May-July 2004: the ambitious preparation of a national heat wave exercise that would have been run in early July — had it not regrettably been cancelled. The dominant feature of this process was the extraordinary number of actors and participants who needed to be involved, and the equally large number of micro-organisations (each with its corresponding ''micro-culture'') that had to be connected with the whole.

The primary lesson of this initiative was that ''texture'' crises will call for a huge effort in years to come. Of course, the bodies that have traditionally been in charge of coping with national disasters should be involved as ever; but many other have to be approached, listened to, involved and networked.

The challenge is to invent a new cultural capacity to recognise, understand, and tackle these new ''texture'' crises, profoundly embedded in the very fabric of our society.

Hegel said that when confronted with an ''inconceivable reality'' one has to forge ''inconceivable paradigms''. Surely this is our responsibility when facing these emerging forms of crises.

## Notes

1. Patrick Lagadec was heard, as an outside expert, by the National Assembly Inquiry Commission (Tome 2, p. 241–256). The full text of his presentation can be found on his website www.patricklagadec.net.
2. This knowledge has been remarkably documented for more than 40 years by the Disaster Research Centre in the USA, under the leadership of Henry Quarantelli and Russel Dynes. But the myths are still central and strong in managerial culture. (Quarantelli, 1978; Quarantelli, 1998; Dynes and Tierney, 1994).
3. It was the same in the BSE episode: ''The result of the experiment which showed that a single gram had transmitted BSE orally to a calf caused a widespread surprise and concern'' (Lord Phillips et al., 2000: § 1182, p. 234)

## References

Assemblée, Nationale (2004), Rapport n° 1455 de M. François d'Aubert, rapporteur, déposé le 25 février 2004 fait au nom de la commission d'enquête sur les conséquences sanitaires et sociales de la canicule, 3 mars 2004. Tome 1, tome 2.

Assemblée Nationale, Rapport d'information n° 1091, ''La crise sanitaire et sociale déclenchée par la canicule, ⟪Prévoir l'imprévisible, changer de regard sur le vieillissement: deux défis pour demain⟫'', présenté par M. Denis Jacquat, Député, tome 1 – tome 2, octobre 2003.

Boin, A. and Lagadec, P. (2000), 'Preparing for the Future: Critical Challenges in Crisis Management', *Journal of Contingencies and Crisis Management*, special issue on Crisis Preparation and Training, Guest Editors: Arjen Boin Patrick Lagadec, volume 8, Number 4, December 2000, pp. 185–191.

Dror, Y, Lagadec, P., Porfiriev, B. and Quarantelli, E. (2001), 'Crises to come: comments and findings', in: Rosenthal, U, A. and Boin, L. Comfort (2001), *Managing Crises, Threats, Dilemmas, Opportunities*, Charles Thomas Publisher, Springfield.

Dynes, R. and Tierney, K. Ed. (1994), *Disasters, Collective Behaviour, and Societal Organisation*, Associated University Presses, Cranbury, London.

House of Commons, Lord Phillips of Worth Matravers, Mrs June Bridgeman, CB, Professor Malcolm Ferguson-Smith, FRS (2000), *The BSE Inquiry*, House of Commons, London, HMSO, § 1182, p. 234.

Institut de Veille Sanitaire (2003), ''Impact sanitaire de la vague de chaleur en France survenue en août 2003'', 29 août 2003, pp. 72.

Janis, I. (1982), *Groupthink - Psychological Studies of Policy Decisions and Fiascoes*, Hougton Mifflin Company, Boston (2nd Ed.).

't Hart, P. and Boin, A. (2001), 'Beween Crisis and Normalcy: The Long Shadow of Post-crisis Politics', in U. Rosenthal, A. Boin, L. Comfort: *Managing Crises – Threats Dilemmas, Opportunities*, Charles C. Thomas Publishers, Springfield.

Klinenberg, E. (2002), *Heat Wave, A Social Autopsy of Disaster in Chicago*, The University of Chicago Press, Chicago and London.

Lagadec, P. (2002), ''Crisis Management in France: Trends, shifts and perspectives'', *Journal of Contingencies and Crisis Management*, vol. 4, n°10 pp. 159–172, December 2002, pp. 159–172.

Lagadec, P. (1993), *Preventing Chaos in a Crisis – Strategies for Prevention, Control and Damage Limitation*, McGraw Hill.

Lalande, F., Legrain, S., Valleron, A.-J., Meyniel, D. and Fourcade, M. (2003), ''Mission d'expertise et d'évaluation du systéme de santé pendant la canicule 2003'', Ministère de la santé, de la famille et des personnes handicapées, 2003, 61 p., septembre 2003.

Quarantelli, E. (1996), ''The future is not repeated: projecting disasters in the 21st century from current trends'', *Journal of Contingencies and Crisis Management*, Blackwell, vol. 4 n°4, December, p. 228–240.

Quarantelli, E. Ed., (1978), *Disasters, Theory and Research*, Sage, London; Quarantelli, E. (1998), *What is a Disaster? Perspectives on the question*, New York, London, Routledge.

Sé nat (2004), ''La France et les Français face à la canicule: les leçons d'une crise'', Rapport d'information n° 195 (2003–2004) de Mme; Valérie Létard, MM. Hilaire Flandre, Serge Lepeltier, fait au nom de la mission commune d'information du Sénat, déposé le 3 février 2004.

Stacey, R. (1996), *Strategic Management & Organizational Dynamics*, Pitman, London, pp. XIX-XX.