Crisis Management Reviewed: Dualities, Principles, and Phased Framework

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Following a number of recent crises, including, amongst others, financial crises, COVID-19, global climate change, and the Ukraine War, this article reviews the main principles guiding crisis management. Our first aim is to sum up the main lessons that these crises have taught or reminded us of. The fire that burned Notre Dame cathedral in Paris is used to present the dynamics of crisis and to provide a context to illustrate the principle.

What is particularly painful in the crisis – a fact that motivated the writing of this article - is to see that these principles are regularly ignored. Crisis is not a time for learning or reinventing what should already be known. Crisis management is a time for experienced hands, endowed with healthy doses of both science and "facts," and, on the other hand, intuition. On the science side, not learning from the past, or the present, can be very costly.

One of the overarching characteristics that renders crisis management complex is that the manager faces a great number of dualities, such as continuing the fight or retreat. These act as tensions affecting decision making in an already charged context. When poorly addressed, each of these dualities may lead to failure. This complexity appears not to have been well recognized in the literature.

A final duality is that perspectives in the crisis management literature are typically either internal and organizational, or external and stakeholder focused. Integration in time and across organizational and stakeholder boundaries is the suggestion for further conceptual development and empirical work. The current article fills this gap by joining both perspectives. It does so by presenting a general framework for crisis management that consists of 5 phases to be implemented following a virtuous cycle. The framework allows several clear conclusions: framing and reframing of the crisis are key, the way one gets into a crisis is typically not the way one exits a crisis, and that the how in crisis management (process) is as important as the what (outcomes).

Key Words: Crisis Management; Financial Crises; CoViD-19; Crisis Dualities; Process Management

Electronic copy available at: http://ssrn.com/abstract=4425436

Crisis Principles: A Brief Compendium

Crisis is not a time for the uninitiated, nor for reinventing things that should be known.

Frame the crisis correctly. Experience helps enormously here, so does intuition.

There is no such thing as having all the information.

Time is your enemy, maintain a bias to act, and aim to stay ahead.

Anyone can help or make things more difficult. Engage everyone.

Build trust through objective measurement, candid assessment, and worst-case scenarios.

Admit mistakes, keep learning, know when and how to adjust, which might include exit.

The way you come out is not the way you entered the crisis.

Continuously upgrade your preparedness for the next crisis.

Look for patterns, develop options, and have contingencies should your plan fail.

Apply segmentation and triage. Know what you wish to defend and what you might give up.

Never let a crisis go to waste.

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Outline

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1. Motivation and Purpose

We are these days seemingly living through a continuous series of crises. We had, without mentioning all of them, the HIV/AIDS crisis (1981), the BSE or mad cow disease (1996), the Argentine government's default (2001), followed by SARS (2003), the H5N1 influenza or avian flu (2004) , the US financial crisis (2007), followed itself by the European and Greek crises, the Chinese milk scandal (2008), the H1N1 pandemic or swine flu (2009), the Haiti earthquake (2010), the Tohoku tsunami (2011), the Ebola virus (2013), the Zika virus outbreak (2015), the COVID outbreak (2019), another default by the Argentine government (2020), and now accelerating climate crisis (2022), and, lastly, the Russia-Ukraine war (2022). This list ignores the crises that emerged out of the crisis that marked the end of the Federal Yugoslav Republic (1991-2001), the two Iraqi wars (2003-2011, then 2013-2017), and the fact that Afghanistan has been at war as of the 1970's, that Africa has lived through a number of crises, either political or climate related, and that the European Union seems to grow through crises, the latest one being Brexit, and that the USA is going through a number of crises, one concerning democracy, another being about racism, and a third being about gun violence. Finally, the Russia-Ukraine War occupies us daily and fully and keeps generating its surprises.

In his book *Outliers*[1] Gladwell mentions the now famous *10,000-hour rule*: it takes, according to Gladwell, about that time to become a master at anything. How relevant is Gladwell's rule in crisis, which, by definition, is a surprise? This is just one of the questions that motivated us to write this article, in which we review prevailing ideas and knowledge about crisis and present a generic method for fighting it. One angle we take is that of duality. It is one of the characteristics that renders crises complex to "manage." As a point in case, there is a paradox in the term "crisis management," as management precisely seeks the predictable and repeatable.

This paper proceeds as follows. After a definitional section, we review the recent crisis that nearly destroyed Notre Dame cathedral in Paris. We then review the main known principles about crisis management, emphasizing the dualities or tensions that each brings forward. Bundy et al. in their review article on crises and crisis management concluded that the field was too fragmented, dealing with aspects of it.[2] One that highlighted was the duality between internal organizational perspectives versus stakeholder issues. We conclude this article with a generic integrative framework that explicitly presents and confronts these dualities and integrates them.

10,000 hours is 20 hours a week for 500 weeks or 10 years. One of us spent triple that time in the financial industry, with crisis weeks in the finance world easily clocking 80 hours. Another author has been studying governance and strategy, with a particular affinity for collaboration and military strategy. A third author has learned to confront crisis in the military and has been studying crises ever since. The CoVid-19 crisis motivated us to write an earlier piece showing that ignoring crisis management principles or having to relearn them can prove costly. There simply was too much improvisation and poor crisis management around. Including a lot of what Bert Spector in his wonderful article refers to as bogus, deception, and recklessness.[3] We combine our experiences into a contribution that aims to support those tasked to manage crises.

Definitions and context

The Cambridge Dictionary defines a crisis as "a time of great if not extreme danger." Immediately entering our theme of dualities surrounding crises, Spector takes the contrarian view stating that "there is no such thing as a crisis." Spector focuses on the claims of urgency made by leaders when

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[1] Gladwell, M. (2008). *Outliers*. Boston, MA: Little, Brown and Company.

[2] Bundy, J., M. D. Pfarrer, C. E. Short, and W. T. Coombs (2017). "Crises and Crisis Management: Integration, Interpretation, and Research Development." *Journal of Management 43(6) 1661-1692.*

[3] Spector, B. (2020). "Even in a global pandemic, there's no such thing as a crisis." *Leadership 16(3), 303-313*.

they identify a set of contingencies which, taken together, are assumed to pose an immediate, serious, and existential threat. Two aspects of Spector's work are worth underlining right away.

First, that a crisis is always a claim by the leadership. Second, Spector rightly observes that the legitimacy of claims by leaders can be accurate or outright false, or their statements might be theoretically plausible, but inappropriate in the current context. Eager for classification Spector calls the latter *illegitimate* crises, which he classifies into *deceptive* (accurate, but implausible in the context), *reckless* (inaccurate, but plausible), and *bogus* (inaccurate and implausible). These types would fall into the category of what is also referred to as a "manufactured crisis". This is the first duality Spector explores in his examination of crises.

The second claim – which the uninformed reader at first impression might indeed consider bogus, reckless, or deceptive – is the statement that there is, in Spector's words, "no corporeal thing" that is an object that one can examine, experiment on, and manipulate. For Spector the devastations are real, the antecedents too, and so are the claims. But a crisis is, for Spector, a claim, resulting from power and driven by interests. It is not in and by itself an object of study; the claims, the antecedents, and the outcomes of the claims are. Russia's Ukrainian war – claimed to be "a special military operation to manage the threats Ukraine and the West are posing on Russia" - illustrates Spector's classification. The power and interests of Putin, as Russia's leader, are evident.

Bundy and his co-authors provide a different classification, one based on time. The dynamics of crises are commonly viewed as consisting of a phase of emergence, leading to a peak, after which the crisis subsides, and one eventually exits the crisis, unless it reemerges for another round. Characteristics of a crisis are its sudden and unforeseen nature, as well as its destructive reality when ineffectively managed, and its potential return, generating another wave of damage when it does. Their classification is standard: pre-crisis prevention, crisis management, and post-crisis outcomes. Their main conclusion is that perspectives in the literature are either internal and organizational, or external and stakeholder focused. Integration in time and across organizational and stakeholder boundaries is their suggestion for further conceptual development and empirical work. The current article moves to fill the gap.

The term crisis management is an oxymoron: when a crisis is being "managed" it already is past its peak, or one has a way to reach the peak and manage exit beyond the peak. When one is "managing" the crisis, one is in a way out of its ambiguous phase. One might still be living a tragedy, or several, with large numbers of people dying, and entire regions or economic sectors suffering, but, in management parlance, one is indeed managing the dynamics leading to exit.

Then there are the human aspects of crisis. First is the point that in crises, some, perhaps many will pay a price, perhaps be sacrificed, due to the absence of an adequate response, or due to inadequate leadership. The famines that resulted, willfully or not, by Stalin and Mao's "great turns" are gruesome testimonies to this aspect. This aspect is intimately related to the quality and nature of the leadership, which must deal both with internal and external stakeholders, precisely because in crisis, anyone can help, or contribute to make things worse.

By bringing these various dimensions together, we present a framework that is better able to explain the life cycle of crisis, and its outcomes. The period prior to a crisis is when the groundwork for a crisis is laid, both in the factors that will cause the crisis, and, in any preparation being taken to cope with a potential crisis. This is the period where the level of vulnerability to crisis is key to understand. Only honest and open self-examination will allow the management of our vulnerabilities (elimination is impossible) by thoroughly reflecting on our weaknesses. This safeguards against the potential damage inflicted by a crisis that, if it were to occur, exposes our weaknesses and exploits them when inflicting even greater damage.

The unique manifestation of events that cause the crisis may be "accidental" (confluence of events or unintended consequences), or "manufactured." Yet, it is these events that make us lose control and

hence define the onset of a "crisis". The actions taken after that – and which this paper elaborates upon – form the management of the crisis.   These eventually take us out of the crisis once we have regained control again.

To illustrate our conceptual points, a recent example may be helpful. It concerns the spectacular fire that nearly destroyed one of France's most illustrious sites, Notre Dame cathedral in Paris.

2. The 2019 Notre Dame Fire

It is 6h50 pm on Monday April 15th, 2019. The news breaks that Notre Dame is on fire. Soon the Notre Dame medieval roof structure will be lost, for hours the flames will engulf the iconic 800-years-old landmark that survived World War I and World War II, but that now might not survive this incident. The Arrow (Spire) – part of the 19th century restauration work by Viollet-le-Duc - that culminated 96 meters above the ground and weighed 750 tons collapsed less than an hour later. It was a shock, causing screams and pains by of millions of people, catholic or non-Catholic, believers, or atheists, watching the scene from close by or afar.

Eventually Notre Dame would be hurt but stood. This was due to the masterful intervention of the Paris Fire Brigade, the *Brigade des Sapeurs-Pompiers de Paris* (BSPP). [4] The brigade is a military elite unit regarded as one of the best in the world. It again proved its reputation on that night. Unlike in other cities in France and in the world, the Parisian brigade (and that of Marseille) is a military unit. Like often in France, the idea goes back to Napoleon who, in 1811, decided to transform an infantry unit into one charged with fighting fires.

Fire is the war the BSPP fights. Its members are constantly anticipating their enemy's movements, developing optimal plans and procedures, and practicing major fire scenarios each Saturday morning. Through this training they acquire automatic behaviors and reactions when confronting a fire, as opposed being in awe of it, and frozen. That day, nevertheless, many needed a couple of minutes to come to their senses when first meeting the monster that was devouring Notre Dame in front of them.

The first message from the fire fighters that had arrived on the scene evidenced such automatic reaction. It stated "*Poursuivons – Reconnaissance,*" which indicated that the unit was continuing its observation of the crisis that had emerged in the center of Paris. These words may sound trivial but for the BSPP they are not. It is code that the fire was out of control.

The message was received by General Jean-Marie Gontier, the second in command of the BSPP. In half an hour general Gontier decided to mobilize 600 people and almost all the BSPP's resources, including police units to facilitate the arrival of the engines and ladders. Almost, because on the *Île de la Cité*, the island on which Notre Dame is located, streets are very narrow, and fire could easily spread through the neighborhood. One of the oldest hospitals in Paris, *l'Hôtel-Dieu de Paris*, is just a few meters away. One of BSPP's options was the evacuation of the hospital. This would have to be done in coordination with the French Red Cross, responsible for the actual evacuation of people from the hospital. GDF-EDF, the French gas and electricity company, was also engaged to prevent the catastrophe of the fire reaching gas pipes.

Notre Dame is one of the most important historical monuments in Paris and probably in France. General Gontier had to immediately inform his superior, General Jean-Claude Gallet, who has ultimate decision-making authority for the BSPP. When crisis happens, there are typically are several fronts to fight, and General Gallet is on top of all of them, at least those that are of interest to stakeholders. Two of these fronts are communications and coordination, including with the Mayor of Paris, the Prime-Minister, the President, the press, etc. In corporate terms, General Gallet acts as the Chairman,

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[4] Elsa Freyssenet, "*Notre-Dame : le secret de la victoire des pompiers contre le feu,*" *Les Echos*, April 23, 2019 (https://www.lesechos.fr/politique-societe/societe/notre-dame-comment-les-pompiers-ont-gagne-la-guerredu-feu-1013461)

while his deputy, General Gontier, acts as the CEO. The CEO is everywhere on the fire site, while the Chair is relating with the world outside the site. The operational command consists of about ten people, including four colonels each responsible for relaying orders to their "division" fighting the fire in an area of the cathedral, and transmitting the local info to the operational command.

The command of the operation consists of General Gallet (linking with the external stakeholders), General Gontier (commanding the brigade charged with the operation), the four colonels corresponding with the four sectors, an "operational designer" who goes around the site sketching the key battle points for the commanders, and Lieutenant-Colonel José Vaz de Matos, in charge of relations with the Minister of Culture. José had started his career in the unit closest to Notre Dame. He brings both great insight due to his operational expertise and talent and a "thin slice judgement" to the command that operates from a tent erected on the vicinity of the site of the fire. Very few people have the capability to see a situation and frame it in the way José did. In his best seller "Blink", Malcolm Gladwell gave the example of experts looking at a statue or painting and immediately deciding whether it is real or fake.[5] They are born with talent but developed their skill over many years so that it has become fully integrated into who they are and how they act and decide. They have gut intuition and are regularly right about it.

The command center also benefits from the information gained by a drone sharing images from above the fire. One officer is responsible for communications, allowing the commanders to focus on their task, while informing the world on their success, or lack thereof, in extinguishing this "fire out of hell."

One further aspect will be decisive: the amount of preparatory work done by the brigade. It knew the exact location of all the paintings, artwork, and valuable objects inside Notre Dame, and knew the passages inside the cathedral. The units close to the cathedral had conducted two drills in 2018. The info at the disposal of the command center would prove priceless. It would have been impossible to gather on the spot.

When arriving on scene, General Gontier starts by what he calls *son tour du feu* (his round of the fire). Each round – he will end up doing five or six times during the night - is motivated by several distinct reasons:

- First, he needs to see the crisis to acquaint himself with it, frame and have a clear picture of the extent of the crisis, so he can direct with clarity and conviction. The importance of Gontier's first observations and reactions cannot be overstated. His framing of the problem drives the response and the ensuing actions and resources in a particular direction. His call is the result of both remarkable intuition and from the considerable experience he has accumulated by being confronted by similar uncontrolled situations.

- Second, the tour allows his men and women to see him, to build confidence and commitment. Conversely, he appraises himself of their configuration and condition of the troops, how and where they are posted and in what state the various units are. That provides him with a good appraisal of the current deployment of the units and the risks thus incurred.

- Third, he needs to evaluate if the decisions taken are the right ones and correct those that appear wrong or too risky at this stage. Continued appraisal of the risk of the current state is of paramount importance.

The major problem was the roof: it is built as a single structure, with no separations. Notwithstanding the 18 hoses dropping thousands of liters of water on the fire, it kept growing and the fire fighters had to concede and retreat. Soon one of the two majestic towers would be attacked by the fire. Looking at the Northern tower, José Vaz spotted an imminent danger: each the tower contained eight bells,

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[5] Malcolm Gladwell (2005). *Blink: The Power of Thinking Without Thinking.* Boston, MA: Little, Brown and Company.

each weighing several tons. If they collapsed, the cathedral would fall as a house of cards. The bells were supported by 800-years-old oak woods. José estimated that there was only half an hour to stop the fire from reaching these woods; if unsuccessful, the tower and then Notre Dame would collapse. So Gallet made the most difficult decision: to give up on saving the roof (which would indeed collapse), and to meet the fire at the towers. This amounts, as Gallet states, to *faire la part du feu:* decide what to leave to the fire and sacrifice, and what to save. One principle is that a fire eventually runs itself out, when no longer fed. This can lead to a technique of countering a fire by starting fires to take resources from the fire to thus stop its destructive progression.

Gallet decided to stop the fire at the Northern tower, all fire fighters are sent there. The redeployment imposes a high risk to the men. The decision was complicated by the fact that few months earlier, on Saturday, January 12th, one of the units lost two men in a gas explosion in the nearby *Rue de Trévise,* in the Ninth Arrondissement. The men and women going up the Northern tower would face similar complex challenges. They had to carry 20 kg of equipment, run about 60 meters, on a 60 cm wide bridge, which could collapse at any time under the heat pressure. On top of that, they would not have the time to buckle themselves; their fall would be fatal.

Gallet accepted to take the risk, comforted by the BSPP's motto *Sauver ou Périr* (Save or Perish). He confirms his decision to Gontier, and shares his decision with President Macron, who is next door in the *Préfecture.*   Gontier gathered his firefighting commanders and shared all the risks they were facing, in total transparency. He knows that people that do not "buy in" will likely execute orders, but with fear in their guts, and hesitantly. Inevitably they will lose effectiveness and even make errors, driven also by their protective instincts to save themselves.

The deployment to save the Northern tower implied choosing 20 people that were not too tired, were still sharp enough to operate effectively under severe stress conditions. In their meeting Gontier exposed the stakes, the danger, and then probes the commitment of his team leaders: *"Alors, on y va, ou pas?"* ("So, do we go, or not?). Only after the team leaders' approval, with good understanding and approval of the risks taken, the commanders proceeded to select the 20 people who would go up.

The episode raises the crucial question of commitment: why did these young fire fighters, with families, so willingly accept the risky decisions taken by their superiors? The answer has two parts: self-selection and training. Superior officers – coming out of elite institutions such as the Military School of Saint-Cyr or the École Polytechnique – went from the beginning of their careers through the same routines, training, and combat drills that they submit their junior members to. The latter know that their officers have appraised the risk they are submitting them to. Elite special forces soldiers are known to remove their insignia to identify with and act as every other soldier in the brigade. It is this *esprit de corps* (team spirit) that provides the strength and alignment with decisions taken by officers, who are trusted by the men they command. But even in this condition, the superior officers submit their decisions to the commanding officers for their challenge and validation. This is because personal authority is more important than titular authority when people are under duress and personal commitment is imperative.

At 10 pm, Gontier was able to return to the Northern tower where his men had been combating the fire to declare "She is saved." At 4 am on April 16th, less than 24 hours after the emergence of the fire, one of the commanders could declare that the fire was now completely under control. Parisians, who had watched their beloved cathedral go up in smoke, could now go to bed, reassured. Notre Dame was still there, heavily damaged, but standing. Only one soldier was injured. The mandatory Saturday drill, devoted to exploring another major fire, was skipped. It was both a tribute and a fair reward for the brigade.

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3. Crisis Dualities

No team, no organization, no country is safe from crises. One of the main reasons is that teams, organizations, or countries that are complacent and do not consider crisis management a daily capability to be nurtured or activity to be paid attention to will soon succumb to a crisis. This is just one example of a duality that is characteristic of crisis emergence and management.

One of the reasons why crises emerge so often and suddenly indeed lies in the fact that crises are characterized by a great number of dualities. The proper characteristic of dualities, as so well explained by Dodd and Favaro (2007), is that teams, organizations, and countries fall into the trap of managing one of the duality dimensions, without properly paying attention to the other one. They say dualities as substitutes ("this OR that") and not as complements ("this AND that").[6] The mistaken framing of even a single duality might aggravate the crisis or generate a crisis. It is our view that the proper understanding of these multiple dualities is the first step in building crisis management capability.

In this section, we detail the many dualities those leading crises need to manage in order to have a chance at meeting the challenge posed by any crisis effectively.

Crises are idiosyncratic in their origin, but rarely idiosyncratic in their dynamics [7]

Crises are always idiosyncratic in the way they start. The start of the fire at Notre Dame was banal, the consequence presumably of neglecting standard safety concerns. That made the structure vulnerable to fire, possibly lit by a cigarette but, though that was not proven. A heightened sense of vulnerability is always good medicine to counter a crisis. The converse is true as well.

The emergence was idiosyncratic: it had never occurred before, and the combination of factors that led to the incident, which fueled into a crisis, were unique. If it had been known, detected, or stopped earlier, the crisis would have been avoided, and safety protocols tightened.

On the other hand, once the fire emerged, traditional firefighting methods were used to contain the fire. But the BSPP could not save the wooden roof – called "the forest" to remind us of the huge number of trees required to build it – from eventually collapsing. Finally, the attention turned to "meet the fire" at the towers. The engagement there proved successful, allowing them to be saved, as well as the splendid "rosace."

Every crisis is idiosyncratic in its emergence, yet patterns recur. The precise vulnerabilities that favored the emergence of COVID-19 are still in doubt. COVID-19 was a respiratory disease, like SARS and like H1N1 before it. It shared many patterns with the latter; what was different was the ease with which COVID could be transmitted, and the fact that the virus was new. Many stated that had been surprised by this new virus. Two remarks are immediately in order. Asia was much less surprised than Europe, as it had known other outbreaks such as SARS and H1N1. Taiwan, forever suspicious about China and observing it closely, was one of the first countries to know and take early preventive measures, which all could have known and followed. Switzerland could hardly be surprised that the virus did cross the Alps, carried by Swiss returning home from their Italian ski trips. We elaborate this in our next point, which is closely related to the current observation.

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[6] Dodd, D., and K. Favaro (2007). *The Three Tensions: Winning the Struggle without Compromise.* Jossey-Bass.
[7] The observation is due to Jose Santos.

Preparation is the most effective crisis management practice Whether in fire safety, in business, or in the military, crisis preparedness is where it starts and this makes crisis management a non-stop activity and an ever-evolving ongoing journey. The Paris firefighters have their weekly drills, who prepares the brigade for the unexpected crisis they will be called to fight. The more the fire can be seen as a fire having been met before, the easier the fight will be and the more apt we become in "managing" the crisis.

The weekly drills of the Paris fire fighters contribute in two ways. First, it trains the fire fighters in acquiring the habits that increase both the effectiveness and the efficiency of the teams arriving on the scene. That is why sports teams train often and vigorously. But during a crisis, emotions can take ahold of people, leading common sense to disappear, often leading to overreactions. Preparedness is a fundamental lever to help tame such overreactions.

There is a second reason for the weekly drills: by increasing the repertoire of rehearsed plays, it renders teams and players more adept at improvising and responding with new plays the day of the game. That is why the weekly drills focus on simulating fire scenarios that have not been met yet, precisely to increase preparedness capability. And that indeed paid off in the Notre Dame fire.

The opposite of preparedness is when a team considers itself prepared enough. War historians having studied the surprising and sudden defeat of the French army in World War II to this factor. The feeling that they were mighty and ready for the Germans led them to be surprised at the combined onslaught of the Stukas, the panzer, and the infantry columns. It resulted in panic in the French army, considered by several experts as a superior force to the attacking Germans. Furthermore, regular preparations for crises will highlight how minor glitches gradually sediment into any organization. Ideally, it allows them to be addressed preemptively, or at least become cognizant of these vulnerabilities, triggering coping mechanisms. For instance, organizations often discover during a crisis that a substantial portion of their emergency contacts for critical stakeholders are outdated. This is better discovered ex-ante. Thus, preparation must be enshrined in any organization as a "business as usual" activity.

Preparedness comes twofold: the preparedness aimed at avoiding a crisis (e.g., fire prevention), and the preparedness aimed at best navigating a crisis (e.g., firefighting). These two aspects are related: it takes an expert eye to spot a vulnerability that most non-experts will not identify, thereby providing the opportunity for the crisis to emerge. This also explains why actions are the correct measuring stick to assess preparedness: theories and slides may be lofty and make a lot of sense, but it is the preventive actions that increase preparedness. This leads us to our next observation.

Crisis is often preceded by early signals whose early detection greatly contributes to preparedness.

Hurricane Katrina hit the southern part of the US in the summer 2005. It was the unfortunate epitome of how reading early signals can help avoid a crisis altogether. FEMA - the US federal agency in charge of mitigating against, responding to, and recovering from the impacts of natural disasters - is widely recognized as having mishandled the event. The damage was correspondingly high: 1392 fatalities and $125 billion in damages. Despite its sole purpose being the preparation and alleviation of meteorological risks, FEMA appeared to get caught by surprise by Katrina, pushing its director to resign in the aftermath.

Facing the same unprecedented hurricane, another organization was impressively successful in its own context: it managed to plan with a week's notice, allowing to save its own members' lives and helping out substantially with the most time-sensitive needs in the days following the hurricane. The organization was Walmart. As it happens, to meet its own logistics needs, Walmart had established a storm detection center in Florida, simulating any storm as it is shaping up from the Caribbean. This detection capacity not only allowed Walmart to avoid a huge crisis, better, it allowed them to bring comfort and support to thousands of families and gain respect in the communities around their stores and distribution centers.

Never let a good crisis go to waste

The sentence has gained fame due to former Chicago Mayor and Chief of Staff of the Obama White House, Rahm Emanuel. He stressed that the aftermath of the crisis is the most opportune moment to address vulnerabilities that led to the crisis. It also is one of the major points this article stresses: the crisis is often the result of a lack of learning, adaptation, and change following previous crises. Emanuel stresses that, given the negative nature of crises, their major positive aspect is that they should be leveraged for learning and adaptation, to reduce vulnerability to future crises. Particularly, when the value of the learning that has been gained was so difficult to convince people of before the event. The importance of such learning from crisis is also underlined by the famous formula "if one does not learn the lessons from history, history repeats itself."

The Chernobyl tragedy is largely viewed as the result of a lack of safety culture at the plant, at operational and administrative levels, and more broadly in design, engineering, manufacturing, and regulation of the nuclear reactors that operated in the USSR. Though considerable improvements were made following the accident, both in the USSR and Ukraine, the lack of a safety culture is evidenced by a lack of investigations and lessons learned following previous nuclear accidents, many of which occurred in the US (Three Mile Island comes to mind, but unfortunately, it is not the only one). Problems had been identified at the plant that, if addressed, would have prevented the meltdown. But those that had identified the vulnerabilities well before the meltdown did not inform their superiors for fear of delivering unwanted messages.

Accidents such as Three Mile Island are typically followed by extensive investigations by US regulatory authorities. Remarkably, the lessons are made available to the US public, the industry, and the world, so that all can learn and benefit from US failures. Accidents that occurred in Russia prior to Chernobyl did not seem to have spurred the authorities to establish a similar safety culture. That too allowed the Chernobyl tragedy.

There is another aspect here that concerns memory loss. The *Glass-Steagall Banking Act* was the key legislation following the Great Depression. It separated investment banking from commercial and retail banking. The now famous 1999 *Financial Services Modernization Act*, also called *Gramm-Leach-Bliley Financial Modernization Act*, signed by President Clinton, is generally regarded as actively setting the conditions for the 2007-08 global financial meltdown.

On a smaller scale, the Belgium government destroyed a stock of 6 million FP2 masks in 2019 (according to the press) or in 2017 (according to the Ministry). These were sorely missed when COVID emerged. The Health Ministry explained that the plan was "to replace the stock with a stock of masks functioning differently, to not repeat the errors of the past. The solution proved more complex to implement due to contractual and legislative difficulties …" Effective adaptation to a more capable world is indeed one imperative which if not met can be the root of a subsequent crisis.

In crisis, one often copes as best one can. After the crisis, there is more time, sometimes plenty of time for thorough learning. Unfortunately, the latter is often incomplete and insufficiently thorough, postponed, or ignored outright. The repeal of the Glass-Steagall Act, the legislative foundation of the post 1929 financial crisis, is often imputed to a new ideology that business cycles had been conquered and that, in the words of Allen Greenspan, then Chairman of the Federal Reserve, US markets "now had a conscience." That even US regulatory authorities caught this delusional virus is remarkable (though perhaps less so considering the events affecting the US current political scene). As is the fact that authorities seemed not to have taken the necessary insights from the 2001 dot-com bubble.

The UK illustrates this duality too, explaining some of its current difficulties. Thatcher had set the UK on a course emphasizing financial services and de-emphasizing the industrial sector. The financial crisis showed the vulnerabilities of the model. The Conservative Party, elected immediately after the

bail-out system, missed the opportunity to set up a new economic model for the country, which would have been relatively easy after the crisis. That exacerbated the feeling of two economies in Britain which arguably led to the political and popular schism that drove the results of the Brexit referendum. That rendered the UK economy even more vulnerable following its exit from the EU. As Emmanuel stated, the country's leadership had let the opportunity for reform go to waste, with dire consequences to this day.

The dual imperative: fight hard at the front, consider adapting in the back

We already stated that rapid action to contain an emerging crisis is of paramount importance. However, when no solution is available, or when the chosen option does not appear to work, the urge will be to go after other solutions, try out other options, which also will produce results that are uncertain. Leaders fighting a crisis thus face a dual obligation: see that the current plan is executed as effectively and efficiently as possible, while simultaneously examining other options for the counterfactual scenario where the current plan fails to master the crisis.

That is the complementarity between those in "front" and those at the "back." The latter team will work on creating and refining a portfolio of options for deployment if needed, while the former is dedicated to the implementation of the current plan. This is the case both at the top (corporate or general staff), and down the line at the level of tactical squads. Both the front and back teams are key to conquering the crisis and need to be managed via a single operating command for optimal or at least effective coordination.

So, when the first teams were trying to contain the fire at Notre Dame, another team at central command was busy working to contain the fire spreading to the gas pipes or discovering that the towers became pivotal and had to be given priority. In war, some work on containing the current attack, while others are the reserve team, ready to come in should the first line fall. General staff will be working on filling the option pipeline should the current plan fail.

In organizations what we have described falls under *risk management*. Having options available provide confidence, for it indicates readiness. Lack of options increases vulnerability. Ultimately, a way must be found to exit the storm. When the latter is secured, one leaves the exploration part of crisis management to fully execute the exit out of the crisis. At this point, optionality is no longer that useful, unless the intervention fails.

Thus, temporally too, there is a duality to be continuously managed. One cannot solely focus just on the short term, nor can one ignore the medium- and longer-term implications of current options failing. Leaders regularly motivate the troops by reminding them that one day the storm will subside, and all the sooner that maximum efforts are applied, both physically and intellectually.

Crises are fought by people - "humanware" – yet hardware and software are key

People are key in crisis. Crises reveal heroes. This is what we refer by the term *humanware.* The leadership dimension is part of that, but then leaders have followers, who – just like middle management in organizations – might reveal to be heroic as well, and more so than the leaders. Schematically, one might think of three levels of management or leadership: top (Gontier and Gallet), middle (firefighting commanders), and operational (leaders of the operational units meeting the fire). Then there are the "soldiers" – those that do most if not all the work and then contain, then stop the crisis.

Hardware is key as well. It consists of fire guns, protective gear, engines, ladders, as well as drones and other informational and communication equipment. The arrival of HIMARS in Ukraine proved fundamental in allowing Ukraine to meet Russian aggression. So were the drones.

The third dimension is what we broadly refer to as *software,* which are the interactions and relations between the people fighting and experiencing the crisis. This includes the many communications and

exchanges, but also the steps followed in operations, whether this pertains to first exploring the scene upon arrival, identifying the fire, and then setting up ladders and cannons. Again, the capacity of the Ukrainian army to coordinate its various units attests to the quality of its software. This is one of the dimensions that the Russian side clearly suffers from, with tragic consequences for them, and good outcomes for the other side.

Crises are managed by a synergistic combination of hardware, software, and humanware. A lack of alignment between these dimensions has dramatic consequences. The combination is *effective* when the crisis is met successfully; defects in one or several of the three elements, or in a lack of alignment, results in ineffectiveness.

In crisis, effectiveness and efficiency interact, yet effectiveness primes

Efficiency refers to the speed and effort required to set up, deploy, and conquer the crisis. Crisis demands an effective response. Efficient responses may not be effective and are a waste of resources. This was tragically the case when entire firefighting companies were sent up the World Trade Towers, only to be engulfed by the collapsing towers. Yet, in crisis, time is of the essence.

In Russia's "special military operation" against Ukraine, the Russians planned to take control of Homostel airport, close to Kyiv, and then move to conquer the capital from there, once additional troops, supported by tanks and artillery, had landed. The Russians had control over the airport for some time, but Ukrainian artillery rendered the airport inoperable and the planes, in midair on their trip to Kyiv, had to be sent back. Efficiency in Ukraine's response was key for effectiveness. Most experts argue that had the Russian truly gained control of the airport, they might indeed have taken Kyiv in a few days.

Effectiveness primes, the key being to meet the crisis and conquer it. Speed and response efficiency are insufficient to ensure effectiveness. In fact, the desire to respond quickly might lead to disastrous outcomes if the intervention does not prove effective. In the Notre Dame story, the first task of the BSPP was not to rush into action, but to observe the scene and get a good view and understanding of the evolving drama. An excessive focus on efficiency often creates vulnerability, thus reducing effectiveness. T

The standard in relief operations now is to first establish a diagnosis and a resulting priority of resource needs, while stopping possible interferences with the timely arrival of the critical resources. In the military one holds reserves for contingencies. Engaging all of one's troops creates huge vulnerability in case the first engagement is not the final one, but more a trap to be followed by a second more decisive onslaught.

Framing is key: known or unknown crisis? Legitimate or illegitimate?

One implication of the above considerations is the dichotomy in the classification of crises: crises that one is prepared for, and which can indeed be "managed," versus crises that are unknown, or insufficiently known, and thus prohibit immediately applying a given action plan. The latter crises indeed cannot be "managed," and need to be "fought against", like in war, with an enemy hard to predict, whether in strategies, processes, or weapons. Understanding one's vulnerabilities helps to assess the strategy that will lead to recovery.

This classification reminds us of the one introduced by Taleb when referring to black swans, in contrast to the known, white swans.[8] It is impossible to prepare for something one does not know, or even worse, that one cannot identify nor even name. Most crises are more like "brown swans," a combination of white and black: features of the crisis are new, but other features are reminiscent of previous crises. The latter, when conquered, have become better known and known recipes or protocols have been generated that can be readily applied, or at least tried.

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[8] Taleb, N.N. (2007). *The Black Swan: The Impact of the Highly Improbable.* New York, NY: Random House.

Then there is the issue identified by Spector and mentioned earlier: is the crisis *legitimate*, or are leaders constructing a crisis that may be *bogus*? Notre Dame was a legitimate crisis: the cathedral nearly burnt down fully. The gas network fortunately was not touched by the fire. That allows a narrative framing and a real feeling of victory.

Spector points out that a crisis may be bogus when its claim is both inaccurate and implausible. Examples of what Spector identified as *reckless* crises abounded during COVID. People repeatedly mentioned that the virus was just a flu, or that all that was needed was to treat the ailment. Putin's denial that the Russian troops amassed around Ukraine were there for military exercises was *deceptive*, for it had plausibility, but was inaccurate.

Crises surprise us, yet call for experienced hands

Because crises are rarely completely new, a crisis calls for experienced hands, endowed with healthy doses of both science and intuition, plenty of talent and competence, acquired and refined over many crisis events. The uninitiated and inexperienced will be prone to errors that will worsen the crisis and that experts would not make. Training and experience help provide the appropriate calm, level-headed, and rational demeanor that ensures being unphased by unpredictable, lest uncontrollable, situations.

Crisis is not a time for learning or reinventing things that should be known. In any case, there simply is little time, and generating good options takes time … and experience. Crisis is typically managed through heavy training … before the crisis emerges. In crisis, the only immediate option is to push a button and apply one of the options one has developed and learned to execute before the crisis emerges. The stronger the variety of scenarios faced, the higher the value of this portfolio of scenarios.

Adaptation in crisis is ok; improvisation connotes a despair and an admission that what one knows does not work. Learning from past crises thus lies at the core of fighting a crisis. That is precisely why the BSPP simulate a major crisis scenario every week. To master the terrain, increase readiness and quality of response, but foremost build confidence that one is ready to meet the world of crisis scenarios. Experts indicate that it is the competence acquired from being able to master a wide variety of scenarios that generates the confidence to meet new and unforeseen crises. Talent here is certainly part of the equation.

What is true for humanware is equally true for software and hardware. If crisis is a domain for learning, it is also because the software and hardware prove initially inadequate.

"Managing" the crisis: executing or exploring?

A known crisis calls for an immediate response, tested and refined through previous engagements. This is the domain where the term "crisis management" truly applies. In an unknown crisis, matters are quite different: one does not even know where to start, and there is no option that imposes itself. This is the domain where the person in charge is called to improvise, relies on intuition and advice from experts in devising options, and finally executing one or several. The leader here is like a scientist trying to understand an unknown new pattern, exploring options until a successful option is found, or until the fire goes out on its own, due to changing circumstances.

Once the roof collapsed at Notre Dame, and its remnants were burning on the ground floor, the fire had become simpler: the roof was no longer a factor, the priority now was to save the tower and the artwork on the walls. That was done with largely classical and known methods. Facing a known crisis, the emphasis is on execution; when facing an unknown crisis, the first task is exploring what the issue really is, and what the opportunities and risks are. That is what the initial tour of the first people at the scene tries to determine.

Once the COVID-19 virus had been identified by the scientific community, the pharmaceutical industry could focus its attention on what it knows, which is vaccine development. The issue now was not what, but how and when? Effectiveness and efficiency became the issue. There was no time to reinvent and try new molecules, the best was to apply existing pharmacology and treatments. Solutions were found by examining existing vaccine treatments and seeing whether any could be redirected to fight COVID-19. That led pharma and some scientists to the ARN messenger technique, already studied in the context of oncology. That insight ultimately allowed the production of an effective vaccine in less than 1 year. An unheard-of accomplishment.

Segmentation is key: who has priority (and who has not)?

In crisis the demands on critical resources far outstrip their availability. That imposes actors to be strategic, to keep focusing on their mission in a foggy and evolving context, and to focus on the overall objective, without being sidetracked by what may occur or be needed at a particular point. These choices render crisis management a very demanding and emotionally draining exercise. It requires leaders with conviction and care, knowing that some may be sacrificed so that others may live.

In Notre Dame, it became clear at some point that the roof was lost and would eventually go up in flames. That shifted the focus to saving the towers. Sometime during the COVID crisis, it became clear that elderly people were at greater risk than younger ones; then people with lung and cardiac ailments were understood to present higher risk. If you allow the entire population to have demands that need to be met – the case of the NHS which promises free health care to all - you will run out of medical capacity very quickly. In the COVID epidemic, some countries realized this in the early days. Successful responses involved intense testing to remove the infected people from the healthy population; but this was viable only if infection rates were low. In the early days, doctors did not protect themselves and often contracted the disease when they should have been the first to protect themselves.

This is akin to what happened at the Chernobyl accident, where no one seems to have hardly protected themselves, the result of a failing safety culture prevailing in the plant. Thus, personnel and fire fighters paid their heroic actions with their lives following the accident. People in the nearby town of Pripyat were evacuated but the decision was taken only 36 hours after the incident.

Saving all banks at the same time in the 2007-08 financial crisis was impossible. So, the focus shifted to saving the most critical and vulnerable ones early and turn to the less critical and more robust ones only at a later stage. Triage is the necessary consequence of having limited resources and allows the intervention to be directed where the leverage is highest. Once framed as a resource allocation problem, issues can be addressed and communicated more constructively than if the message is "we will save them all." While reassuring initially, this message is most likely to ultimately set up both the saviors and those being saved for failure.

The need to check upon authority and call upon countervailing power

Abraham Lincoln once said, "Nearly all men can stand adversity, but if you want to test a man's character, give him power." Author George Orwell stated something along the same lines, "The real test of character is how well you treat someone that has no possibility of doing you any good." Both quotes say a lot about the role of others in contributing to the power of the authority or leadership. It also is the limit of dictators who tend to create and magnify a crisis in the absence of countervailing power. This scenario seems to be the one affecting Russia's leadership in the Ukraine war, with disastrous consequences not only for the Ukrainian population, but for that of Russia, raising the possibility of a nation self-destructing at the top.

Presidents typically say they want to be surrounded by strong-willed people who have the courage to disagree with them. President-elect Barack Obama reached out to Hillary Rodham Clinton and

Republicans, and truly meant it. . Abraham Lincoln did the same.. He appointed his bitter adversaries to crucial posts, choosing as war secretary a man who had called him a "long-armed ape" who" does not know anything and can do you no good." This is particularly important in crisis times, where options have to be thoroughly debated and explored. It greatly contributed to preparedness of his Cabinet in the most difficult of times. Eisenhower was not afraid to call upon Patton when the Normandy operation seemed stuck.

Today's corporate leaders continue to be challenged with how to manage external and internal risks that present in complex and interconnected ways. The corporate world has seen its fair share of crises, and any risk can quickly turn into a crisis. By paying attention to a few do's and don'ts, you may be able to preserve your company's value and brand.

History has shown us that corporations have taken various approaches in how they responded to crises. Some responses have been more successful than others. Regardless of how managements and boards choose to respond to crises, their decisions could have a significant bearing on the company's stock and its reputation. It's vital that corporate leaders think through the potential ramifications of their decisions carefully.

The unfair nature of crisis outcomes makes fair process vital in addressing the crisis

An understated point about crisis is its unfair nature: a crisis affects people in very different ways. Some die, others survive; some are harmed, others are not; some are heroes, others are forgotten. Randomness is king. Turning to the Chernobyl incident, the fire fighters called to the plant, the operators on the scene, and the people of the nearby town of Pripyat were all affected. But the highest casualty rate was amongst children in the affected areas of Ukraine, Belarus, and Russia, where approximately 4000 cases of thyroid cancer were detected. The cause were the high levels of radioactive iodine emitted in the environment following the accident.[9] The World Trade Towers cost the lives of most fire fighters that climbed up, in vain. Those that died in the towers in no way merit meeting their tragic end.

Terrorist acts, in peacetime or war, exhibit this unfairness in very vivid and often cruel ways. This has led the world community to identify fairness as a moral criterion in war, namely that war should involve a probable cause, that defensive or offensive acts should be proportional to the threat endured, and the costs incurred are expected to produce greater benefits than the cost of their implementation. Civil populations should be protected and not doing so should lead the perpetrators to be tried at the International War Tribunal in The Hague.

The stakeholder perspective privileges what is commonly called *procedural fairness*. It is because of the radical unfairness of outcomes that people in crisis, searching to protect themselves emotionally and physically from repeat accidents, turn to an evaluation of the sequence of events that led to the crisis outcomes, examining particularly the responsibilities of those involved in the decisions taken by those with authority. Such investigations respond to the call for *fair process* emanating from the victims, their families, and society. Prolonged unfairness in society, perceived or real, leads to crises as well, as is shown by revolutions (French or US), continued by the "*Gilets Jaunes*" movement in France today.

Procedural fairness is central to the just practice of law. The subject concerns itself with the proper execution of judicial procedures and processes. The concept of procedural justice is, in the academic literature, credited to two social scientists, Thibaut and Walker, and to their seminal work *Procedural*

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[9] Fortunately, the International Atomic Energy Agency's report, entitled *Chernobyl's Legacy: Health, Environmental and Socio-Economic Impacts and Recommendations to the Governments of Belarus, the Russian Federation and Ukraine,* by the Chernobyl Forum: 2003-2005, confirms that the recovery rate, when treated is very good, only 9 deaths having been recorded at the time of the report. https://www.iaea.org/sites/default/files/chernobyl.pdf

Justice: A Psychological Analysis (1975).[10] These two authors applied their interest in the psychology of justice to the study of judicial processes. They coined the term procedural justice to differentiate the concept from the traditional theories of *distributive justice* devoted to examining the fairness of outcomes resulting from procedures. Their early thinking, as well as subsequent research by others, established that perceptions of procedural fairness positively affect not only the individual satisfaction of outcomes, and their acceptance, but also generate greater compliance with the resulting decisions. Fairness in judicial procedures was thus unequivocally established as being as critical to perceptions of justice in society as the outcomes themselves. Procedural fairness was thus established as critical to the generation of trust, commitment, and harmony in groups, and in society more generally.

The subject was thus ripe for application outside of the justice system, including organizations. Leventhal (1980) is generally credited as having first asserted that procedural justice (as applied in the court of law) was greatly relevant also outside legal settings.[11] Researchers started applying this concept to a host of social settings and diverse cultures, confirming Leventhal's assertion in such varied contexts as education and politics. The seminal reference in this regard is Lind and Tyler (1988).[12]

Kim and Mauborgne (1991,1997, 1998) clearly illustrated the conceptual power and applicability of procedural justice concepts inside the multinational enterprise.[13] In their empirical study of strategic decision making in transnational corporations, they found that subsidiary managers who believed their company's processes to be fair displayed a higher level of trust in, and commitment to, their organization. This in turn engendered the managers' active cooperation in implementing these decisions, typically improving performance. Conversely, when managers viewed decision-making processes as unfair, they "hoarded ideas and dragged their feet." Kim and Mauborgne explored procedural justice in other business contexts—for example, in companies in the middle of major transformation, in teams engaged in product innovation, and in corporate partnerships with suppliers. The theme that emerges from this research is that individuals are most likely to trust and cooperate freely with organizational systems — regardless of whether they themselves win or lose by participating — when fair process is observed. Conversely, grave, and prolonged violations of fair process at best generate a form of passive resistance and, at worst, destructive forms of retributive justice.

In this paper, we follow this approach in a crisis management context.

4. A Phased Crisis Management Framework

The dualities described in the previous section render crises particularly challenging to manage. Successful management of crises is complex and subtle. One rarely has the outcomes one wishes for. Legitimate crises (unlike bogus ones) do not allow for populist statements like "*all will get the treatment they need!*" Bundy et al. (2017) pointed this out when underlining the need to manage the organization as well as stakeholders outside the organization. The Notre Dame example illustrated how this was done in the context of the cathedral's fire. Bundy and his co-authors also claimed that

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[10] Thibaut, J. W., and L. Walker (1975). *Procedural justice: A psychological analysis*. Hillsdale, NJ: Erlbaum.

[11] Leventhal, G. S. (1980). What should be done with equity theory? New approaches to the study of fairness in social relationships. In K. Gergen, M. Greenberg, and R. Willis (Eds.), *Social exchange: Advances in theory and research,* pp. 27–55. New York: Plenum Press.

[12] Lind, E.A., and T.R. Tyler (1988). *The social psychology of procedural justice*. New York, NY: Plenum Press.

[13] Kim, W. C., and R.A. Mauborgne (1991). Implementing global strategy: The role of procedural justice. *Strategic Management Journal* 12: 125–143.
Kim, W. C., and R.A. Mauborgne (1997). Fair process: Managing in the knowledge economy. *Harvard Business Review* (July–August): 65-75.
Kim, W. C., and R.A. Mauborgne (1998). Procedural justice, strategic decision making and the knowledge economy. *Strategic Management Journal* 19: 323-328.

more frameworks were needed that could integrate the various concerns and issues they had brought up.

Our framework aims to do just that by presenting a phased framework that supports effective crisis management. The framework consists of a 5-step cyclic process guiding crisis management, addressing the dualities presented in the earlier section, and addressing the need to manage both inside and outside stakeholders. It also makes clear that the how in crisis management is as important as "the what".

A point we will need to expand on later is that this framework supports the leadership managing the crisis. The framework builds on the work of Van der Heyden, Blondel, and Carlock (2005) who first presented a sequential process in a field that remarkably had not seen one until then.[14]

We now develop the five phases in turn.

Phase 1: ENGAGE stakeholders early in correctly framing the crisis

Engage people outright, communicate the method that will be applied to conquer the crisis, and the way you will engage with stakeholders. As the Covid pandemic illustrated tragically, in crisis all can help (by reducing contagion and following recommendations) or make things worse (by ignoring recommendations and happily or unknowingly contaminating others). Another way to state this is that if you are not useful in fighting the crisis, the best is to get out of the way of those that do. This is exactly what one expects drivers to do when an ambulance rushes to the scene of an accident.

A good framing that addresses the question immediately proves virtuous: it aligns people, reduces the odds of dysfunctional behaviors (e.g., continuation of larger gatherings during the epidemic), and engages those that can contribute. For example, with respect to Covid, it proved essential to be clear on the problem being addressed: was it to limit contagion or build herd-immunity, was it to protect all or only the high-risk people, was the first priority prevention or treatment?

The number of stakeholders in crisis are larger and more numerous than one often expects. The people that are key to engage are those that will be impacted by the crisis, those that are key to execute the response, those that have crisis expertise – crisis is indeed not the best time for improvisation - and finally those that might prohibit effective solutions from being deployed. Given the unavoidable uncertainty prevailing in times of crisis, confidence will build by explaining the process that will be followed in managing the crisis. When people see that the leadership has a method – the 5E framework offers one– they gain confidence, and the risk of panic abides. Effecting engaging of stakeholders on a clear frame lays the groundwork for an effective response.

Have memory and look for patterns. It is rare that crises are completely new. Events and contexts that trigger the crisis typically differ and lead people to label crises as new and different. However, underlying causes, patterns, and impacts are often more similar than one imagines at first. That makes memory and insightful analysis of past crises the first weapons in fighting the current crisis.

The 2007-08 crisis was a global financial meltdown due to excessive risk-taking. People collectively and conveniently forgot one of the pillars of modern finance, the famous risk-return relationship. The impact was a repeat of the Great Depression of 1929, even if Alan Greenspan commented that "this time it was different." It was in a major way, not in others. Undoubtedly many patterns repeated themselves. But the response was swift and significant, because it was one of the major lessons of the 1929 crisis, and because Bernanke was a student of the Great Depression.

Governments regularly suffer from delusion, laziness, or forgetfulness, especially when it comes to crisis. The current Covid episode again attested this. Italy was experiencing a tragedy that France and Switzerland were desperately seeking to avoid. The US was next. All these countries looked East and

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[14] Van der Heyden, L., C. Blondel, and R.S. Carlock (2005). Fair Process: Striving for Justice in Family Business. *Family Business review* 18(1): 1-21.

did not seem to fathom the gravity of the situation unfolding in China or seemed to freeze when noticing it. Up to early March, President Trump still stated that the US numbers were small and that all would soon be fine. When action was taken, it was in a blanket form and was not surgically developed or implemented. In crisis, allocating and impacting those segments of the community that need the most attention without stifling those that didn't is key. The crisis found its way to show that so-called "strong" leaders were indeed quite weak in face of the virus.

The standout example here was Taiwan. The country learned its lesson from the mistakes it made during the 2003 SARS epidemic – and which it acknowledged. Its deep suspicion of everything that comes out of China greatly contributed to readiness. Taiwan put in place a public health emergency response mechanism that enabled experienced officials to quickly detect the crisis unfolding and to respond with efficient, data driven, and culturally sensitive policies. These indeed helped contain the spread and significantly minimized deaths. As of December 31, flights to and from Wuhan were restricted and a week later anyone showing "pneumonia-like" symptoms was immediately isolated. In contrast, the Chinese only confirmed human-to-human transmission on January 20, while signals appear to have been present as early as November. To this date, Taiwan, a country of 23 million, has had only had 49 confirmed cases and 1 death. By and large, except for Hong-Kong and Korea, the world did not appear to really notice and learn with, or from, Taiwan.

Frame the crisis correctly. A good framing is essential to the successful management of the crisis. Wrong or contradictory framings add fuel to an already burning fire. Regular flip flops of the US Government left the country too long unprepared for dealing with the CoViD epidemic. Minimizing the danger or asserting a level of readiness that was unrelated to the facts was reckless at a time when tragedies were hitting elderly homes in the Seattle area. Italy and France suffered from the same hesitations in the early stages yet reacted forcefully once the epidemic was spreading, and hospitals were full and turned into hotspots. Delaying the onset of the virus so that health systems could be put in place to treat and save those members of the community that were more vulnerable was the right framing. And worked if hospital capacity limits were not reached, and hospitals not overrun with infected people. Underlining the priorities and stating outright that the healthy members of society should be able to deal with. So was confining the elderly.

Good framing focuses all energies on stopping the fire. Bad framing fuels the fire. As the crisis evolves, reframing is needed to remain relevant and trusted. What is the problem that now requires solving or is being solved is a recurring question whose answer changes over the life of the crisis. More on that later.

Phase 2: EXPLORE the crisis and how to fight it

Segmentation and Triage. It is rare that there is an optimal approach in a crisis. There are good and bad approaches, better and worse ones, but rarely an optimal one. All solutions, however, include some triage of the population at risk so that each segment may benefits in due time from an effective approach.

It is, what it is. Assess the downside and understand people's motivations. There is no such thing as having <u>all</u> the information. Stay objective and Independent. Crises trigger strong emotions, typically of fear, if not panic. More than at other times, one needs to understand how emotions drive and bias decision-making and behaviors, and how emotions filter what people can hear and understand.

The immediate desire to find reassurance is ever present but may lead to ignoring the danger. Excessively hasty decision making based on these reactions is equally dangerous. Sudden changes in communications or actions without an objective argumentation for the change in tone and assessment, risk being ineffective and can be costly in terms of credibility, as people are hungry for positive news that cannot be given.

One suggestion here is to speak in terms scenarios or ranges of scenarios of what could happen, to reassure the population that the crisis will end, while also getting people used to uncertainty about its eventual scope. Hopefully windows of uncertainty will be narrowing with time. One typically does not have the information necessary for precise forecasts and admitting the truth is then wise, particularly if one can state when this uncertainty will be resolved.

A great example of a communications protocol is to be credited to the Singaporean Government where each identified Covid case was identified, provided a number on the Government's website, and tracked for all to see. All could see that the latest cases of infection had entered the country from outside or related to previously identified and treated cases. This was objective and reassuring, and immediately pointed authorities to the value of a 2-week quarantine for travelers coming into the country. What was less reassuring was the discovery that migrant workers were not identified as a major "at risk" category. When the epidemic hit their barracks, the numbers soared near 100,000 and the error was visible for all to see.

How you get into the crisis is not how you get out. Understand and focus on what leverage you have now. A human tendency in a crisis is blaming and lamenting. Better to recognize this by indicating that once the crisis will be over, there will be a big diagnosis job for lessons learned and responsibility. Engaging in a blame game is destructive at a time when energies are best directed at engaging all to contribute to fighting the fire that is spreading. Resources should be dedicated to solving the crisis, and not wasted at futile side maneuvers. This is related to our next point.

While those that can fight the crisis should focus on that with full priority, another team should already be looking ahead at exiting and prepare the post-crisis. It is very important to divide the team into two groups with very distinct missions: the major team ought to be dedicated to fully fight the crisis and contain it, while a second team (initially a few, then likely a growing number) should be focused on planning next moves, should current ones not work out, and also search options that will get us out of the crisis and return things back to normal. A good recent example with enormous unintended consequences was the Global Financial Crisis which caused the collapse of the financial services-led economy developed in the post-Thatcher period of the UK that utilized the "city" – and services, more broadly – as the engine of the country's economic model for a generation. Very little thought was given at the time of bail out of banks to what the surviving or successive economic model for the country would be. This left many disenfranchised, which arguably led a majority of Britons to vote in favor of Brexit. The unenviable – and very difficult – task today of remedying a spiraling economy, not least developing and implementing a new economic model, has finally landed on the Government of Rishi Sunak. The task has been ignored for too long and now needs addressing in a context rendered more challenging by the postponement over successive Conservative governments.

What is the exit strategy? Provide indicators to track the evolution of the crisis and that points to an approaching exit. Initially the attention during Covid focused on containment. In some countries, testing was applied but too late and was subsequently abandoned. Then we heard of messages about research on new vaccines and anti-bodies, on building more capacity, and bringing greater treatment capacity online. When fighting a crisis, positive messages bring hope and resolve that the battle can be won, when a lot around suggests instead that defeat looms large.

As the epidemic spreads, immunity builds. Vaccines do eventually emerge. At some point, all countries learn to fight a crisis. A breakthrough in China was when it could report no new cases appeared in the Wuhan region, which was the initial hot spot. Positive news gives a boost to those confined and to those fighting the crisis, for it points to light at the end of a horrific tunnel. Focusing on the right indicators is thus crucial: reduction in the rate of new cases is a much more relevant indicator than the number of deaths which is a lagging indicator. Recognizing that, more than how you combat the crisis and more than its effects, what people really wish to hear is how and when to exit the crisis. Good indicators make this self-evident and clear.

Phase 3: EXPLAIN what you have decided, why and how it will work, and commit to action

Time is your enemy so maintain a bias to act. The whole idea in the crisis is to stay ahead of the game by preparing the next move. The crisis is racing with those that fight it. The longer one waits to (re)act, the fewer options remain available. No action means one is losing the race against a crisis. Inaction adds fuel to the fire. Conversely, action always reveals, even if it is not successful: knowing what does not work avoids wasting time in blind alleys. Setting the agenda, of even hearing it, is more motivating than passively reacting to events. It is known that anxiety reduces when people are engaging in action. Passivity promotes helplessness and resignation. Routines, such as washing hands, are more powerful than one thinks in spreading transmission and infection, and not just in hospitals and emergency rooms.

The vital decision: stay or leave? What is your bigger strategy? What is your purpose, and your narrative? Fighting losing battles is pointless unless it is sacrifice for others to operate an orderly withdrawal, which is framed not as losing, but as heroism. Like in the military, one better have options, retreat being one of them. In crisis, a lack of options forces gambles and leaves matters to hope, prayer, and luck. Being cornered without options is like being in a desert hoping to be rescued. Staying in the game requires options. Proactivity increases options.

The key here is something akin to the "3 lines of defense" - those in modern banking (business unit, control functions, and internal audit) or those Wellington built at Torres Vedras to counter the French Imperial Army (they held, and Wellington won) aiming for Lisbon. Lines of defense result from key strategic insights successfully implemented. Once proven wrong, it is time to retreat. The leader will remind his troops that retreat is an option, trumps chaos (as in Waterloo), and maintains her or his vital ingredient, credibility. The advice is based on simple mathematical logic: 3 lines of defense in the current battle indicate that other options exist (at least 2 in order not to corner yourself), should the first lines of defense not hold. Presentation and explanation of one's "toolkit" to fight the crisis, deployment of the tools, and reminding all that other tools are available for later use when needed are essential aspects of effective crisis leadership. This is the modern orthodox modus operandi for central bankers when discharging their "market stability" responsibilities in public.

Returning to Covid, financial measures were issued hastily in both Europe and the US to keep economies afloat. The Federal Reserve announced these on a Sunday night (March 15, 2020). They failed to make the impact that was intended. One reason was that these announcements were missing a clear narrative, did not adequately explain their purpose and how they would stem the feared economic decline. Markets even erroneously interpreted them as panic by the Federal Reserve, which was not the case. The announcements missed their mark and markets plunged the next trading day.

Clearly communicate your purpose and provide one or multiple scenarios that will work. Communicating purpose, with at least one clear scenario that is expected to work, and several alternative measures that together should prove sufficient for managing the crisis, cannot be overemphasized. Putting all one's resources into the battle too early is dangerous for it leaves many people anxious, wondering whether any reserves are left should current measures prove insufficient. At Waterloo, Napoleon engaged his Imperial Guard at the end of the day: all knew that the moment was serious, as it was his last option to avoid defeat. When engaged the Imperial Guard should be decisive. It quickly proved not to be the case, signaling impending disaster. French troops who had fought in a composed manner so often and over so many years, panicked, and started to run away. For the first time, Napoleon was beaten (he had often withdrawn) and had finally run out of options. As expected, for his Belgian campaign was hopeless. A much superior coalition was committed to decisively deal with him and remove him from the European scene which he had dominated for nearly two decades.

Phase 4: EXECUTE with focus and constant monitoring

Indicate that the battle has started. Execute what has been decided. Remind stakeholders of your purpose and of the results they can expect. Having finished preparing for the battle and having announced it, the action shifts to the actual battle. Discussions about why, what, and how are largely behind us (though remain important for motivation of the troops). All efforts must now be directed at halting and eventually extinguishing the fire. Continuing discussions at this stage is negative and counterproductive. Leadership will regularly keep communication lines open, and remind stakeholders of the battle plan, what victory looks like, how it will be achieved, and what results can be expected. This is referred to as "performing communication" which is communication that is not action by itself but induces it so effectively that it generates action.

You get what you measure. Build trust and credibility with your stakeholders based on objective measurement. Strategy is ultimately defined by what one measures, for it focuses the mind and is gathers attention. Having a great strategy and a good measure of strategic progress builds trust and commitment to and the leadership, and their decisions. Objective measurement is the best way to communicate to all concerned. The more transparent, the clearer the communication and the stronger the leader's credibility. Measurement thus becomes equated with strategy.

In Covid one key strategic question was the dilemma between self-immunization versus containment/protection strategies. The former describes the rate at which the population self-immunizes (and stops being a hazard or a transmitter). The second concerns the number of people saved from negative outcomes. Focusing on the cases dying, by itself, provides no sense of whether one is winning the war or not, nor does it address resource allocation and behavior, which are the real issues. In fact, at worst it multiplies anxiety. A terrible reality of Covid was indeed that many of the dying were in bad health; hence one should have communicated the mortality rates per age group, perhaps relative to the same rates in previous or comparable episodes. That would have reassured most of the population and focused greater attention to the vulnerable ones. What the population wished to know was how many vulnerable people have been saved due to effective crisis management. Framing matters in terms of lives saved versus deaths (some of which were not even Covid related, as Covid became an all-encompassing category when classification was imprecise). Excessive focus on deaths becomes psychologically tough to take and only spreads a sense of losing the battle, unless the numbers indicate that the opposite is true and that matters are "under control."

Fighting requires resources: show that you are resourced for unavoidable contingencies. Follow the critical resource(s). New money and resource set the terms. Negotiate. Crisis management is fraught with uncertainties. To handle these, one needs contingencies which invariably require resources. Cash is often the lifeline to access more resources that may be needed. One thus needs to be careful about how one spends the cash on hand. Better to preserve it and know how to access it when needed. One of the big realities in NYC, the world's financial capital, is that new money sets the terms. The same is true for any critical resource. So best not to go for these too late when your bargaining power is reduced to nearly nothing. The simple rule to be followed is to get your reserves and contingencies early and spend only what is truly necessary. Monitor that the spend provides the expected benefits.

In Covid it would have been easy to stockpile masks and medical equipment early. These were necessary to safeguard key personnel - the health care workers and doctors. That line of defense, however, was not built early enough, also because European and US firms emptied their stocks on China first, assuming they had any (many had destroyed old stockpiles). Economic *efficiency* drove out an *effective* health care policy. It should not have been difficult for governments to keep the public health system in an adequate state of readiness, particularly when people like Bill Gates had given TED talks to this effect.[15] At the same time, one ought to be conscious of avoiding excessive generosity early, for you may need more time and different resources later. Readiness is a function of building capability and stockpiles before they are needed. Ultimately, readiness is a strategic decision of how

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[15] *The next outbreak? We're not ready,* TED Talk by Bill Gates (April 3, 2015).

much of the Government invests in readiness, including through sensitizing the private sector and public-private collaboration.

Phase 5: EVALUATE, learn, and adapt efforts, as well as your leadership, as new information and feedback comes in

Remain yourself, trust your instincts and your talents, don't agree to anything you do not understand, remain open to feedback and criticism, reassess continuously, manage errors, admit mistakes, and, above all, keep learning. Leadership requires authenticity, confidence, credibility, conviction, and the competence to do the right thing. Not to be underestimated is the talent that allows you to think and do innovative things. Military and sports thinking is driven by the idea that talent, developed through plenty of training, will help you get out of unknown traps.

Talent comes from our parents, which provide it as their gift when born. It feeds instincts and is developed, across generations, by learning and experimentation over many years (the 10,000 hours we mentioned above). An example of this is the Olympic medals earned by Dutch women and men at the Winter Olympics, where they have regularly over the last two decades obliterated the other nations. This results from talent selection and then "talent" development, which truly means improving talent effectiveness through learning and development. But even in such cases, errors will be committed, and successive teams and generations will need to be managed, by admitting what one was wrong, taking responsibility for it, and promising that the learning will ensure future strength.

Modern coaching emphasizes, more than before, for athletes to embrace their instincts, and to explore them with teammates and opponents, to better assess the viability of success and downfall if intuition is indeed followed, and to accept that there remains a part of the response that is instinctive and flows not just from reason. Top athletes find a good balance of both, which they arrive at by following our earlier *Stay or Leave* recommendation. Erecting boundaries to signal when it is time to "leave" current positions and personal commitments is also part of the portfolio. At some point responsibility may require one member to leave. Such departure will require courage, but it also allows the organization to continue under new leadership. Depending solely on one talented member is unavoidably risky for an organization. And in such leadership change, members, for the benefit of the team, are asked to express their confidence in their successors, and walk away elegantly.

Know how and when to exit the crisis. The Stay or Leave principle also applies to the crisis itself. One needs to know how to exit the crisis and when to call it over. The danger with a fire is that it may suddenly pick up again. A poor or careless exit may generate a bigger crisis later. A point often made is that WWII was fueled by a poor conclusion of WWI at the Treaty of Versailles. That lesson was eventually learned and resulted in the Marshall Plan which allowed Germany and Europe to recover from these two devastating European crises. This point also proved a major issue with Covid as countries did not coordinate in terms of timing of the crisis and its peaks. They also were overeager to liberate their societies from an excessively long crisis mode. China aimed at doing so and had to back down in face of massive popular unrest and fatigue in view of continued lockdown measures imposed by the Government's strategy of eradication of the virus. Restarts due to new variants will be unavoidable, including due to visitors from infected areas abroad. Hopefully lessons will be learned, from the many diverse episodes witnessed and studied.

A call for method and leadership. Crisis calls for leadership. Most great victories have been achieved by teams of teams, not individuals. Roosevelt would not have succeeded without his Chief-of-Staff George Marshall; the latter would not have succeeded without Eisenhower, who needed Patton to break through in Normandy after D-Day. All of them had their own teams. At the top, there was Roosevelt, but all these leaders had their ways of selecting and building teams of great people around them. Crisis is conquered through a positive combination of talents and competences, and a method for ensuring the right synergy amongst the people and resources engaged. Methods and strategies are only good if the leaders who steer them are good as well. It is the effective combination of

hardware (resources), software (interactions), and ultimately leadership (people-ware) that ensures victory and builds a leader's reputation and credibility.

In crisis, a simple truth prevails : people learn to trust their leaders if what they say is going to happen, actually happens; when it does not, a leadership crisis eventually emerges which requires a leader to take responsibility, acknowledge the error, and restart the 5-phase cycle all over again, with the conviction that victory is achievable. When a leader no longer has that confidence, a hand-over to a new leader is called for, able to muster the energies vital to fight. A new leader then takes command committed to beat the crisis initiating a new and hopefully virtuous leadership cycle. The final duality of leadership is that their determination to face the crisis also renders their removal more difficult. Courage, process, and new leadership are then needed.

5. Conclusions

There seems to be an accelerated onslaught of major crises in the world. What were once-in-a-hundred-year events are occurring more frequently. We, again, are facing a war with global implications that have serious geopolitical and economic ramifications for the balance of world power. Climate change is looming, and our vulnerabilities are being exposed left and right which is increasingly affecting us in major ways.

In this paper we have sought to review the literature on crisis management and reframe the meaning of crisis, crisis management, their meanings, and their causes. For one, the qualifier "management" of crisis itself deserved, in our views, explanation and validation.

Our key point is that the management connotes the invariance of the process that guides effective leadership in crisis, whether one is in the crisis, or one contemplates victory over and exit from the crisis. Crisis management restores stability and predictability when a crisis, or loss of control, occurs through a process. Good process management requires great leadership. In crisis, fairness in terms of fair play rather than fair share (as crisis outcomes will rarely be fair) is an essential ingredient.

Another point in our development is the prevalence of the many dualities which all contribute to crisis complexity and that need to be carefully, if not artfully and scientifically, managed.

These points were illustrated through several examples, starting with the 2019 Notre Dame fire. Other examples taken from the Covid epidemic and the repeated economic crises that have fallen upon the world over the last two decades illustrate our main conceptual points and framework, which Figure 1 aims to summarize.

6. Acknowledgments

Figures

Figure 1. A Phased Framework for Crisis Management

- Remain Yourself
- Trust your Instincts and Talents
- Don't Agree to Anything you do not Understand
- Remain open to Feedback and Criticism
- Reassess continuously
- Admit Mistakes & Keep Learning
- Know how and when to Exit the Crisis
- Adapt to avoid a repetition of a similar Crisis
- Crisis is a call for Method and Leadership

EVALUATE
5

ENGAGE
1
- Have Memory
- Look for Patterns
- Frame the Crisis Correctly
- Engage People early
- Present your Method to conquer the crisis

Process Discipline

EXPLORE
2
- Segmentation and Triage
- It is, what it is
- Assess downside
- Understand people's motivations
- No such thing as having all information
- Stay objective and Independent
- How you got here is not the way to get out
- Most should fight the crisis, another team should be looking ahead at exit and post-crisis

EXECUTE
4
- Indicate that the battle has now started
- Remind Stakeholders of Purpose and of the Results to be Expected
- Execute what you have decided
- Show that the Scenarios work and that the Expected Results are being realized
- Build Trust and Credibility with stakeholders based on objective Measurement
- Show that you are resourced for Contingencies
- Follow the Cash and the Critical Resources
- New Money and Resource set the Terms
- Negotiate
- Communicate the Progress … or Retreat

EXPLAIN
3
- Time is your Enemy
- Maintain a Bias to Act
- The vital decision: Stay or Leave?
- What is your bigger Strategy?
- What is your narrative?
- Clearly Communicate your Purpose
- Present one or multiple scenarios that will work