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The failure of foresight in crisis management: A secondary analysis of the Mari disaster

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ABSTRACT

Foresight the ability to plan and think systematically about future scenarios in order to inform decision-making in the present has been applied extensively by corporations and governments alike in crisis management. Foresight can be complicated because dispersed groups have diverse, non-overlapping pieces of information that affects an organization's ability to detect, mitigate, and recover from failures. This paper explores the failure of foresight in crisis management by drawing on data on events that preceded and followed the Mari disaster in a naval base in Cyprus in July 2011, where a large explosion killed 13 people and injured 62 others, while completely destroying the major power plant of the island. The paper examines how foresight into crisis management decisions was compromised because of a conscious effort by high ranking decision-makers to minimize emergent danger and avoid responsibility for the crisis, in joint with red tape, bureaucracy, and poor coordination and information flows. The paper explores the notion of operational and political responsibility of individual decision-makers and discusses an alternative approach to foresight in crisis management, one that is built on multiple layers of decision-making.
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1. Introduction

Crisis management is the systematic attempt to identify and detect possible crises and to take actions and measures to prevent them, contain their effects or disruption, and finally recover [1–9]. Crises vary from natural or environmental disasters such as earthquakes and floods (e.g. hurricane Katrina and the Haiti earthquake in 2010), to biological threats such as pandemics (e.g. the H1N1 pandemic in 2009), mechanical or technological failures (e.g. oil spill in the Mexico Gulf in 2010), and human-induced disasters such as terrorism (e.g. 9/11) and economic crises (e.g. the 2008 subprime market collapse). In fact, human error is present in most cases with devastating outcomes disturbing established patterns of working and dominant assumptions about the way aspects of society operate [10–15].

The crisis management literature can generally be divided into two principal schools of thought: Normal Accidents Theory [5,6], and High Reliability Organizations Theory [9–11]. The dialogue between the two schools revolves around the question of whether reliability, resilience and learning can be inscribed in organizations by design. The High Reliability Organizations school argues that "trial and error learning, supplemented by an active search for improvements, can eventually lead to improved safety even in operations involving hazardous technologies" [6: pp. 207]. This learning capability is essential to achieving high reliability against a possible disaster. On the other hand, the Normal Accidents school argues that the real world – due to its complexity – often gives ambiguous feedback and that learning takes place in political environments. In other words, high complexity and tight coupling in organizations are structural conditions which hamper learning [5]. It is this combination of high complexity and tight coupling in some systems that make accidents inevitable or "normal". There are, thus, limits to crisis management and safety [6].

Part of this complexity is that the causes of a crisis reside within an organizational system of governance and often remain unnoticed until it is too late to take any action to prevent them from spiraling out of control. This was what happened with the

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subprime mortgage crisis, which remained unnoticed (at least, to most government and corporate agencies) until it created a global economic crisis [16]. Such crises happen because, as the system for governing decision-making grows in complexity, it becomes easier for the system's component parts to tight-couple with those of other systems, in the process allowing for the rapid proliferation of interactions (and errors) throughout all systems [5]. This complexity is further exacerbated by the executive political decisions made before, during, and after a crisis that often do not take any consideration of foresight into the possible causes and aftermath of the crisis, but are primarily driven by red tape, bureaucracy, and poor coordination and information flows [17,22]. The problematic political decision-making before and during Hurricane Katrina and the catastrophic aftermath for the city of New Orleans is a case in point [18].

One way to understand this complexity is to identify the conditions that contribute to the failure of foresight — i.e. the ability to plan and think systematically about future scenarios in order to inform decision-making in the present [19,20]. Foresight can be complicated by a "variable disjunction of information", which refers to "a complex situation in which a number of parties handling a problem are unable to obtain precisely the same information about the problem, so that many differing interpretations of the situation exist" [19: pp. 40]. This information dispersion is a consequence of organizational structures of decision-making. That is, problems that produce crises can ramify in unexpected ways because dispersed groups have diverse, non-overlapping pieces of information: each group has partial information that is incomprehensible because crucial pieces are missing. It is the distribution and flow of information that affects an organization's ability to detect, mitigate, and recover from failures [19]. In addition, the tendency of people to make do with the information they have at hand and to simplify interpretations creates collective blind spots which obscure problems which may be brewing, eventually leading to a crisis [21].

This paper examines the failure of foresight in crisis management. The intention of this examination is to identify the set of organizational patterns that precede crises by drawing on Turner's failure of foresight framework [19,20], while also acknowledging the complexity in the decision-making processes of crisis management [22].

The paper carries out a secondary analysis of a public inquiry report [23] into the detainment of the vessel *Monchegorsk* by the Cypriot government in 2009, upon the request of the US government. The vessel was found to carry 98 containers filled with arms-related material, sent by Iran to Syria. Following the UN Security Council Sanctions Committee resolutions, the Cypriot government took the decision to keep the 98 containers in Cyprus, until the details of the shipment became clearer. The 98 containers were stored in the Mari naval base next to a power plant until they exploded due to increased exposure to high temperatures on July 11th 2011. The explosion killed 13 people and injured 62 others, while completely destroying the neighboring power plant. In the next section, the paper provides a description of Turner's failure of foresight framework [19,20], and explains how it was applied in the analysis of the public inquiry report on the Mari disaster. Section 3 provides a chronology of the Mari disaster by drawing on the secondary data. Then, Section 4 provides an analysis and discussion of the failure of foresight in the Mari disaster while drawing links to other similar disasters. Finally, Section 5, explores the notion of operational and political responsibility of individual decision-makers and discusses an alternative approach to foresight in crisis management, one that is built on multiple layers of decision-making [24,25].

2. Theoretical and methodological directions

2.1. The failure of foresight: a theoretical framework

Most crises are perceived as unexpected events by the media as well as by the organizations involved. However, several precursors or warnings are usually identified on hindsight by the media or crises investigators. This paradox is at the heart of Barry Turner's failure of foresight framework [19,20].

In developing his framework, Turner examined public inquiry reports from 84 accidents over an eleven year period, published by the British Government. He developed the framework using grounded methods by conducting a more in-depth analysis of three of those accidents [20]. These accidents were the landslide disaster in Aberfan, Wales in 1966, the collision between a large road transporter with a train at a railway crossing in Hixon in 1968, and a fire in a holiday resort at the Isle of Man in 1973 [20]. A common feature of these three accidents was that a large and complex safety problem was dealt with by a number of groups operating in separate organizations with information and coordination failures among them. Based on these findings, Turner emphasized the process leading up to a disaster, by proposing six stages of crisis development which can unfold over long periods of time, as summarized in Table 1.

The starting point of the framework is a situation where matters are reasonably "normal" [19: pp. 71]. Stage I suggests that the set of culturally held beliefs about the world and its hazards are sufficient enough to enable individuals and groups to survive a possible disaster. In addition, adequate safety precautions are in place (e.g. protocols of emergency and crisis response) to keep risks at an acceptable level.

Stage II, the incubation period, is characterized by the accumulation of an unnoticed set of events that are at odds with the accepted beliefs about the hazards and the norms for their avoidance [19: pp. 72]. Turner emphasizes that disasters can have a prolonged incubation period, during which events that are at odds with existing beliefs begin to occur in the environment. During the pre-disclosure incubation period in Stage II, events may be ambiguous, unknown, or misunderstood, resulting in vague or ill-structured problem situations, replete with information difficulties. During the post-disclosure period – i.e. after the transfer of information between crisis management parties – the situation appears to be quite different, and is presented as a well-structured, recognizable problem, with the benefit of hindsight vision. Hindsight bias, though, can pose major problems during the efforts to piece together the events after the fact. This is the case when there is a general reluctance to fear the worst outcome

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