

Controversial issues in crisis management. Bridging public policy and crisis management to better understand and address crises

Giliberto Capano  | Federico Toth

Department of Political and Social Sciences, University of Bologna, Bologna, Italy

Correspondence

Giliberto Capano, Department of Political and Social Sciences, University of Bologna, Bologna, Italy.
Email: giliberto.capano@unibo.it

Funding information

Ministero dell'Università e della Ricerca, Grant/Award Number: project RETURN

Abstract

The current body of multidisciplinary literature on crisis management still has some unresolved problems. This paper focuses on the following four “controversial issues” in dealing with crises: the usefulness of emergency plans; early signal detection; decision-making amid high uncertainty; and the centralization/decentralization dilemma. The paper first presents the various, contradictory dimensions of these controversial issues, drawing on different strands of organization research, public policy theory, and crisis management studies. Next, these controversial issues are analyzed through the lens of public policy research, drawing specifically on the literature on policy robustness and policy capacities. This theoretical application shows how controversial issues can be framed differently and thus overcome—at least from an analytical and theoretical perspective—confirming that a bridge between crisis management and public policy can be very fruitful in improving our understanding of how crises can be addressed.

KEYWORDS

controversial issues, crisis management, policy capacity, policy robustness, public policy

This is an open access article under the terms of the [Creative Commons Attribution-NonCommercial-NoDerivs](https://creativecommons.org/licenses/by-nc-nd/4.0/) License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

© 2024 The Author(s). *Risk, Hazards & Crisis in Public Policy* published by Wiley Periodicals LLC on behalf of Policy Studies Organization.

INTRODUCTION

The explosion of COVID-19 has attracted substantial scholarly interest in the social sciences. The size and impact of this pandemic have refocused the analytical perspective on all the dimensions of crises, situations in which decision-makers must address unexpected events amid high uncertainty concerning what to do and how to do it. More generally, COVID-19 has redirected scholarly attention towards crises as a persistent component of social and political life and a central concept among those not investigating the specific field of disaster and crisis management. However, this incredibly massive amount of research on COVID-19 seems not to have overcome some persisting weaknesses or ambiguities that the traditional literature on crisis management has accumulated over time.

The knowledge accumulated by scholars of disasters and crisis management has become a pivotal point of reference for sociologists, economists, lawyers, and policy scholars. This interest has not resolved what can be considered controversial issues in the analysis of crises in terms of prevention, potential mitigation, and response. Controversial issues are issues that are widely debated but still largely unresolved, and crisis management scholars disagree on these issues, providing contradictory recommendations. In this paper, we focus on four such issues (the usefulness of emergency plans, early signal detection, decision-making amid high uncertainty, and the centralization/decentralization dilemma). The main aim of this article is to bridge two streams of literature (the multidisciplinary literature on crisis management and the literature on public policy analysis) to show how their integration allows these controversial issues to be framed and addressed in a novel way.

The crisis management literature is very well developed and had shed extensive light on the various characteristics of how crises begin and develop as well as on the actions that should be taken to prevent, mitigate, and respond to them (Ansell et al., 2017; Denford et al., 2022). However, the majority of contributions on crisis and disaster analysis lack a systemic perspective concerning the allocation of the resources, activities, and capacities on which many of these actions depend. On the other hand, public policy, while it has not developed a specific analytical focus on crises (which are typically conceived in terms of failure or inadequate performance) (Wenzelburger et al., 2019), has nevertheless consolidated a deeper perspective on robustness in policy design and on the capacities (analytical, operational, and political) that foster both good design and effective implementation.

The article is structured as follows: in the second section, four prominent controversial issues in crisis management are presented. In the third section, the main elements of a public policy perspective fruitful for a novel conceptualization and empirical treatment of these controversial issues are discussed. In the fourth section, each of these four “controversial issues” is defined and then assessed by combining the policy perspective with that of crisis management. In the fifth and concluding section, we discuss the implications of integrating the literature on crisis management and public policy and outline some relevant guidelines for further research.

CONTROVERSIAL ISSUES IN THE CRISIS MANAGEMENT LITERATURE

Crisis management research has been greatly developed in recent decades, increasing both the salient methodologies and types of disasters. While acknowledging the unquestionable merits of extant literature, the authors of this article believe that

research on disaster and crisis management still contains some controversial analytical and theoretical issues. We have selected four of them, which are presented below. These controversial issues become more salient the more unexpected and unknown a crisis is.

The usefulness of emergency plans

The first controversy to be resolved concerns the usefulness of preparing detailed and extensive contingency plans. By “contingency plan,” we mean a document drawn up in advance containing detailed instructions on how to behave in emergency conditions to which individuals must scrupulously adhere. Are documents of this kind truly useful for addressing crises, or can they be counterproductive?

According to Quarantelli (1985), drawing up contingency plans constitutes one of the “general principles” of disaster preparedness. The vast majority of crisis and disaster scholars do not question the need to have written contingency plans in advance. Even authors critical of the effectiveness of such documents, such as Perry and Lindell, state that “the possession of a written plan is an important part of, but not a sufficient condition for, community emergency preparedness” (Perry & Lindell, 2003, p. 338). Such a statement implies that written contingency plans are useful and necessary.

Some authors argue that such plans should be as detailed as possible and leave no room for ambiguity (Alexander, 2005, pp. 162–165), and that a high level of preparedness is associated with having prepared in advance “very detailed and extensive contingency plans” (McConnell & Drennan, 2006, p. 61).

However, many crisis management scholars believe that written plans can be misleading (Ansell & Boin, 2019; Perry & Lindell, 2003). In complex crises, it is argued, “coordination by plans” is too slow, inappropriate for the task, and may have negative consequences (Boin & Bynander 2015; Majchrzak et al., 2007; McConnell & Drennan, 2006). Predetermined contingency plans often turn out to be “fantasy documents” (Clarke, 1999). Such contingency plans may in fact be deficient in many respects (Boin & 't Hart, 2010; Klein, 2009; McConnell & Drennan, 2006): they are based on unrealistic and overoptimistic assumptions and suffer from risk selection bias; they cannot foresee improbable or previously unforeseen events and their consequences; and those who have to implement such plans lack the necessary capacities.

The literature on crisis and disaster management leaves three questions largely unanswered: (1) Are contingency plans useful or not? (2) How should these plans be written to ensure that they are useful? (3) For what types of events should such contingency plans be prepared? Since resources are by definition limited and the ability to foresee the future is also limited, it is difficult to imagine that detailed contingency plans can be prepared for every possible eventuality. Should emergency plans be prepared only for frequent events, or also for rare events that may, however, lead to fatal consequences and extensive damage? Furthermore, is it reasonable to prepare contingency plans for phenomena characterized by high uncertainty, whose effects and countermeasures cannot be predicted? In short, it is not clear for which events contingency plans should be in place. It is also unclear how such emergency plans should be drawn up: should they contain detailed and binding instructions, or should they leave margins of discretion to frontline operators?

Early signal detection

As the analysis of many “grand disasters” has highlighted (Klein, 2009; Perrow, 1984; Turner & Pidgeon, 1997; Vaughan, 1996), many of the clues and early warning signals needed to recognize an impending disaster are usually available somewhere within the organizations responsible for their prevention (Boin et al., 2005). However, such warning signals can be ignored, misinterpreted, and sometimes intentionally concealed (Boin & 't Hart, 2003; Pearson & Mitroff, 1993; Turner & Pidgeon, 1997). The literature on crisis management is therefore unanimous in attributing paramount importance to the ability to detect early warning signs and interpret them correctly (Boin et al., 2018; Boin, McConnell et al., 2021). Highly reliable organizations must be able to pick up on early signs and pay attention to all anomalies, even seemingly insignificant ones (Weick & Sutcliffe, 2007).

However, as many scholars point out, catching the “right signals” early is a very complicated task. The first premonitory signs of an impending disaster are in fact typically “weak signals,” often unconventional, and seemingly insignificant (Boin & Lagadec, 2000; Weick & Sutcliffe, 2007). It is easy for the warning signs useful in predicting a crisis to be hidden in a sea of other irrelevant information (Pearson & Mitroff, 1993; Boin & Hart, 2003). Policymakers often receive ambiguous and contradictory warnings, sometimes from sources they do not consider reliable (Boin & Hart, 2003; Ansell et al., 2010; Hindmoor & McConnell, 2013). Information is usually collected by separate, conflicting organizational units that struggle to share it (Allison, 1971; Ansell et al., 2010; Turner & Pidgeon, 1997). Policymakers are also distracted by other issues and struggle to fully understand these reports, either because they are technically complex or because they are unable to classify them into existing categories (Hindmoor & McConnell, 2013; Turner & Pidgeon, 1997; Boin, McConnell, et al., 2021).

If what has been said thus far is true, we are at a dead end. On the one hand, the importance of developing a surveillance system that catches early warnings and pays attention to small anomalies and weak signals is emphasized. On the other hand, crisis management scholars list numerous limitations—both cognitive and organizational—whereby “early detection” is difficult, if not impossible. It is not clear how to breach this impasse.

The question that remains unanswered is therefore as follows: in the ocean of information, signals, and warnings—often contradictory—with which decision-makers are bombarded, how can they distill the right signals? How can they discern the truly meaningful signals from “the barrage of noise” (Boin et al., 2005; Pearson & Mitroff, 1993)?

No fully convincing answers to this question can be found in the extensive literature on crisis management. Some authors propose relying on intuition (Hindmoor & McConnell, 2013; Cunha et al., 2006). Indeed, research shows that the weak signals of an impending disaster are often caught by chance through unconventional procedures via the instincts and tacit knowledge of a few rather experienced or shrewd individuals who manage to put the pieces of the relevant puzzle together. However, is it reasonable to recommend that decision-makers rely on their intuition? What does this mean in concrete terms? Is intuition a skill that organizations can somehow develop and train?

Making decisions in the fog of uncertainty

According to Rosenthal et al. (1989), every crisis “demands an urgent response under condition of deep uncertainty.” Faced with a crisis, policymakers are therefore called

upon to make decisions under conditions of both “time pressure” and high uncertainty. The “fog of uncertainty” hanging over this decision-making process implies difficulties in understanding the focal problem, in elaborating the possible alternatives for action, and in anticipating the consequences of different options.

Under such conditions, how should the “good leader,” the wise and “rational” decision-maker act? The vast literature on crisis management does not provide a clear-cut answer to this question. At least four different answers emerge, none of which are fully convincing.

A first answer comes from the literature on “rational” decision-making (Allison, 1971). Decision-makers are recommended to follow the “minmax” criterion, that is, to minimize loss in a worst-case scenario. However, the following question immediately arises: amid uncertainty, how can one assess what the worst-case scenario is? To do so, one would have to compare all different action alternatives and predict their possible consequences. However, as already mentioned, amid high uncertainty, any assessment of these means and their consequences risks being fallacious.

A second answer is summarized in the motto “ask the expert” or “follow the science.” Policy-makers should therefore recognize their own limitations and be guided by people who are more knowledgeable than they are. However, experts—as experienced in so many countries during the recent pandemic—are often at odds with each other and can provide divergent and counterproductive guidance (Boin, McConnell, et al., 2021; Toth, 2021). Hence, even experts and the scientific community may find themselves in the fog of uncertainty.

A third possible answer stems from institutional isomorphism theory and suggests the adoption of a “mimetic” strategy (DiMaggio & Powell, 1983). When decision-makers do not fully understand the problem and do not know how to address it, they may emulate what other decision-makers, considered legitimate or successful, are doing in similar situations. However, there is no guarantee that those being emulated are adopting the best solution.

Finally, there is a fourth answer: amid high uncertainty, decision-makers are best advised to adopt a “pragmatist approach” (Ansell & Bartenberger, 2019; Ansell & Boin, 2019; Boin & Lodge, 2021). This approach entails proceeding by incremental, trial-and-error decisions, avoiding any that are irreversible. Amid their ignorance, decision-makers, while waiting to acquire more information, can adopt provisional strategies to be reviewed and adapted later based on the feedback received (Ansell & Boin, 2019). Pragmatism rejects rigid black-white dichotomies, regards uncertainty as inevitable, and assumes that all knowledge can be revised if new evidence emerges (Ansell & Bartenberger, 2019).

As the reader will agree, the four above answers entail the adoption of different and irreconcilable criteria. Which of these four strategies should decision-makers follow?

To centralize or decentralize, that is the question

The belief that in the face of crises, it is preferable to centralize decisions and strengthen the chain of command is very deep-rooted (Boin & 't Hart, 2010; 't Hart et al., 1993; Quarantelli, 1988). In emergency situations, command must therefore be vested in a single operations center who makes decisions quickly and speaks to the population with one voice. Some studies emphasize the advantages of addressing crises through a single, predetermined command center (Mignone & Davidson, 2003;

Militello et al., 2007; Moynihan, 2009). This widespread belief is confirmed by the fact that most countries provide mechanisms to centralize state power in the hands of selected officials if a crisis requires it (Boin, McConnell, et al., 2021). Amid emergencies, the government is given “special powers” that deviate from its usual administrative procedures and often involve sacrificing the division of powers and democratic oversight (’t Hart et al., 1993). When a society is seriously threatened by a crisis, political leaders are expected to promptly take charge and lead their country out of this crisis, centralizing decisions and taking responsibility. A military-style hierarchical structure with a clear line of command is called for.

However, both the literature on high-reliability organizations (including Roberts, 1990; Roberts et al., 1994; Rochlin et al., 1987) and crisis management (including Quarantelli, 1988; Boin & ’t Hart, 2003; Boin & ’t Hart, 2010) warn against the thesis of centralization with a single decision maker in charge. “Top-down command can easily back-fire,” argue Boin et al. (2018, p. 32).

Indeed, multiple studies have shown that the centralized “command and control” model is poorly suited to coping with disasters (Quarantelli, 1988). The center sometimes makes incorrect decisions because it lacks the right knowledge, while the expertise needed to address emergencies is found in the peripheral nodes (Roberts et al., 1994). Reliable organizations therefore distribute knowledge and responsibility; individual components should not decide and act alone (this applies to the center of the system as well) but must interact and communicate with each other, even under pressure. “Loosening rather than tightening up the command structure is better for emergency periods of disasters,” Quarantelli (1988, p. 382) concludes.

Some scholars are therefore convinced that centralizing crisis response is the wrong path to take. However, even authors who warn about the dangers of centralization place great importance on central leadership. We are well aware that coordination does not mean control and that leadership does not necessarily imply the centralization of power. Many crisis management scholars, however, assume that crises are managed by a single center that is able to perform some critical tasks, such as recognizing the incoming crisis, ascribing the right meaning to it, making decisions, coordinating the response system, communicating a credible representation of the crisis to the relevant people, accounting for what has been done, evaluating this management of the crisis and adopting relevant corrective measures (Ansell et al., 2010; Boin et al., 2005; Boin et al., 2018). At the end of the day, many crisis management suggestions assume the existence of a strong decision-making center and some form of centralization. As ’t Hart et al. (1993, p. 13) claim, the “expectation of centralization has, indeed, become a cornerstone of theories of crisis management.”

Accordingly, on the basis of the above literature, a balance must be struck between centralization and decentralization, even taking into consideration the specific contingency. However, it is not clear during a crisis which functions and activities should be decentralized and which should be centralized. The literature on crisis management does not clearly prescribe which roles should be assigned to the center of the system and which to the peripheral articulations, nor does it describe how to ensure coordination across the entire system.

These four controversial issues represent a serious challenge not only for scholars but also for policymakers. We think that they could, if not be resolved, at least be better understood if a policy perspective is included in the analytical framework, as we propose below.

PUBLIC POLICY LENSES FOR UNDERSTANDING THE UNEXPECTED AND HIGHLY DISRUPTIVE CRISES: ROBUSTNESS AND CAPACITIES

Public policy and crisis

Crises and their consequences have become a highly investigated topic among policy scholars, who have focused mainly on the drivers of policy responses and the latter's results in the short and long term (Béland et al., 2022; Capano et al., 2020; Weible et al., 2020). Overall, however, policy scholars have not developed a specific conceptualization of crisis and have treated COVID-19 as an exceptional event (a kind of potentially "critical juncture"; Capoccia & Kelemen, 2007) to analyze its effects in terms of the characteristics of the process and possible policy outputs. Furthermore, COVID-19 has been considered an event, even if exceptional in size and effects, which shows that we are living in turbulent times (Ansell et al., 2017; Denford et al., 2022). This idea of persisting turbulence is very interesting, but it risks overlooking that there are crises that are not mere turbulences but are particularly challenging because they are characterized by high uncertainty and impose decisions under pressure. This lack of attention to the different types of crises and their policy implications is both noteworthy and a kind of constant in public policy analysis, where crises are typically conceived in a simple descriptive way, whereby the prevailing conceptualization focuses on policy inefficiency, ineffectiveness, and failure (Hudson et al., 2019; McConnell, 2010).

Furthermore, in most public policy studies, there is a lack of conceptualization of crises because these are usually treated as drivers of effects in the policy process and thus of the related policy outputs as potential activators of different types of change (Baumgartner & Jones, 1993; Kingdon, 1984). Furthermore, even in those streams of the public policy literature that have focused on policy design (Howlett & Mukherjee, 2018; Peters & Fontaine, 2022), governance and/or policy capacities (Howlett & Ramesh, 2016; Wu et al., 2018), there is never a specific focus on crises. Only recently have a few attempts been made to read crises from a policy perspective, that is, by focusing on robust design amid crises (Ansell et al., 2021; Capano & Toth, 2023; Howlett & Ramesh, 2023) or on their different policy effects over time (Capano et al., 2022).

However, interestingly, these streams of policy studies tend to consider crises in a very fuzzy and ambiguous way without directly engaging with the literature on crisis management, which has developed not only detailed empirical knowledge of critical events and disasters but also conceptualized different types of crisis.

This lack of dialogue should be addressed because with a more detailed focus on crises, public policy could contribute to reframing and eventually resolving some relevant existing theoretical shortcomings or unresolved empirical issues in the literature on crisis management.

This is especially true for crises that are not only a serious threat to basic social structures (Rosenthal et al., 1989) but also less influenceable (in terms of mitigation of causes or in terms of effective response) and less predictable (Gundel, 2005). The low predictability of a crisis can qualify it as unexpected. The low level of influenceability can render a crisis particularly urgent and disruptive (because the less a crisis is considered influenceable, the higher its psychological impact on the affected and, potentially, its disruptiveness due to the lack of preparedness). These types of crises are the worst ones because they are not only unexpected but also potentially highly disruptive due to the cognitive weakness of policymakers, who, at the beginning of

the crisis, hold high uncertainty regarding the causes and solutions and thus have to deal with unknown–unknown situations (Mathijssen et al., 2007).

Given that this type of crisis can lead to serious problems in the social/political order and in the level of political legitimation, the abovementioned controversial issues in the crisis management literature are dramatically relevant to it.

Thus, such crises are a peculiar object of study from a policy perspective. The fact that they are unexpected and potentially not influenceable means that they can be framed as specific types of policy problems that are characterized by apparently not existing in t_0 , but they can appear in t_1 or t_2 .

Policymakers continuously address these kinds of problems. In every country, according to its own sociocultural characteristics (Douglas & Wildavsky, 1983; Hofstede, 2001; Voltolini et al., 2020), there is a specific propensity to shape the ability to address nonroutine or unexpected (external or internal) events. From a policy perspective, this ability depends on two sets of specific factors: policy robustness and the features of specific policy capacities.

Policy robustness

Generally, robustness can be defined as the “ability to withstand or survive external shocks, to be stable in spite of uncertainty” (Banks, 2010, p. 2). Thus, policy robustness refers to the ability of a policy-making framework to perform consistently and effectively across a wide range of conditions, uncertainties, and potential disruptions (Howlett et al., 2018). Accordingly, policy robustness can be shaped by policymakers even if the nature of the potential shock is unknown (Capano & Woo, 2017).

To be robust against a crisis, a policy should be capable of performing three fundamental tasks: (1) to rapidly recognize that something is going wrong; (2) to apply, in the first instance, the procedures that have been prepared in advance to address emergency situations and to evaluate in real-time whether these solutions are applicable and effective; and (3) to take corrective actions or develop new solutions if the preplanned responses are not effective.

Robust policies against the worst crises should therefore have the following properties: agility, improvisation, flexibility, and learning (Capano & Woo, 2018; Cunha et al., 2002; Doz & Kosonen, 2014; Howlett et al., 2018; Mergel et al., 2020). In this case, while agility and flexibility should clearly be considered organizational (structural and procedural) properties of institutional policy arrangements, learning and improvisation should be considered, above all, potential outputs of these arrangements.

Furthermore, the literature on public policy has offered some suggestions for how to design policies and the characteristics of their related implementation to increase the probability of a robust policy. Capano and Woo (2018) have proposed four key characteristics: diversity, modularity, redundancy, and polycentricity.

In addition, Ansell et al. (2021, 2023) have suggested six dimensions of policy-making that can strengthen robustness: scalability, prototyping, modularity, bounded autonomy, bricolage, and strategic polyvalence. Howlett and Ramesh (2023) underline that policy robustness needs to be dynamic, and it thus needs to be appropriately supported through the adoption and calibration of procedural tools. Finally, Capano and Toth (2023) have suggested three conditions that allow the effective implementation of robust policy design: coordinated autonomy, training for unplanned responses, and political institutional capacity.

Table 1 presents the characteristics and the expected outcomes of these key factors for policy robustness.

It is clear that some of these categories relate to each other (or overlap), such as diversity and polycentricity, bounded autonomy and centralized autonomy, and scalability and modularity. However, they can provide a useful set of concepts to shed light on the controversial issues and, ultimately, allow for a step forward towards a better understanding of these issues.

TABLE 1 Summary of the policy design factors for robust policies.

Dimensions	Characteristics	Expected outcomes
<i>Diversity</i>	The diversification of the distribution of power and of the range of sources needed for a policy to work.	Diversity can be a guarantee of agility because it ensures the presence of different stakeholders responsible for policy outcomes.
<i>Modularity</i>	A way of designing a system in which each organizational unit has a specific role and can be easily reallocated to where resources are needed within the system. By being modular, policies can be designed to be composed of clusters that interact with each other but do not necessarily need to be highly interconnected.	Modularity may guarantee agility in adaptation to unexpected circumstances.
<i>Redundancy</i>	Presence of organizational duplication and overlapping functions or properties.	Redundancy may allow for a policy's main functions to work even if some of its parts (institutions, organizations, policy instruments, etc.) are out of order.
<i>Polycentricity</i>	A pluralistic governance arrangement that includes various stakeholders and different institutional levels.	If well managed, it may lead to a favorable configuration of interests, ideas, information, and attitudes regarding learning, which in turn can lead to a "variance" of possible policy responses needed to ensure flexibility in dealing with unexpected disturbances. Polycentricity can be a guarantee of greater capacity and legitimacy in the face of the multiple challenges of problem definition and solution finding.
<i>Scalability</i>	The capacity to rapidly mobilize and demobilize resources.	Flexibility in the combination and alignment of tasks, roles, and units so that they are immediately functional according to need.
<i>Prototyping</i>	The design and re-design of solutions to problems in an iterative way through experimentation and rapid feedback.	It may allow rapid response to specific unexpected circumstances.

(Continues)

TABLE 1 (Continued)

Dimensions	Characteristics	Expected outcomes
<i>Bounded autonomy</i>	A property through which local actors can hold broad-based ownership and strategic commitment.	This makes it possible to respond to specific crises, adapted to the local context.
<i>Bricolage</i>	The use and combination of the ideas, tools, and resources available to create a workable solution in the face of turbulence.	It may favor appropriate improvisation.
<i>Strategic polyvalence</i>	The capacity to design solutions that can take new directions according to the context.	It allows solutions that could be needed for future problems to be anticipated.
<i>Coordinated autonomy</i>	A balance between the center and the periphery, according to which the autonomy of the peripheral components is balanced by the ability of the center to give common directions, monitor local performance, and disseminate best practices.	Thanks to central coordination, any poor performance of local units can be corrected, and effective practices that have emerged at the local level can be spread throughout the system.
<i>Training for unplanned responses</i>	Training of individuals in normal times to develop certain skills that will allow them to be appropriately and innovatively proactive in times of crisis.	It can ensure agility and flexibility at the local level through actors who are skilled enough to be able to improvise and think outside the box when dealing with the unknown.
<i>Political institutional capacity</i>	Possessing the ability to adequately manage the systemic response to a crisis or to prepare for a possible unexpected crisis is an enabling condition for the other factors to operate adequately.	If the level of political institutional capacity is high, there should be adequate coordination and enforcement of the other dimensions of policy robustness.
<i>Dynamism</i>	The adoption of policy instruments that promote interactions and agreements between the main policy actors over time, of regular monitoring and reporting, and of self-organizing processes.	Procedural tools can ensure that over time policies can be adapted or implemented in response to the actual critical challenge.

Source: Authors' elaboration on Capano and Toth (2023), Howlett and Ramesh (2023) Sørensen and Ansell (2023, p. 21).

Policy capacities

When addressing crises, the policy capacities of decision-makers are pivotal (Painter & Pierre, 2005). Policy capacity is a concept that encompasses the set of skills, competencies, and resources that governments can employ to design and pursue policy goals (Mukherjee et al., 2021; Rotberg, 2014; Tiernan & Wanna, 2006; Wu et al., 2015), that is, “the set of skills and resources—or competencies and capabilities—necessary to perform policy functions” (Wu et al., 2018, p. 3). Such skills and competencies can be analytical, operational, or political, and they are

embedded in the individual, organizational, and systemic levels. Below, Table 2 shows how these two dimensions of policy capacities interact with each other.

According to the policy capacity framework, analytical capacities allow policy alternatives to be effectively generated and investigated, operational capacities allow state resources to be effectively brought to bear on policy issues, and political capacities allow policy actors and organizations sufficient room to maneuver and support the relevant stakeholders to develop and implement their ideas, programmes, and plans.

We can therefore assume that the stock of analytical capacity at different levels has a direct impact on the perception of crisis signals and the formulation of possible solutions. Operational capacity has a direct impact on how policies are designed and implemented, while political capacity is fundamental to the legitimacy of decisions and to the support for their implementation.

TABLE 2 Policy capacities.

Level	Analytical capacity	Operational capacity	Political capacity
<i>Individual</i>	<ul style="list-style-type: none"> • Technical knowledge • Data analytical skills • Expertise in policy evaluation • Issue expertise 	<ul style="list-style-type: none"> • Interpersonal skills such as leadership, teamwork, and coordination • Skills and expertise in HRM, financial management, project management • Entrepreneurial skills (creativity, agility, navigating uncertainty, negotiation, improvisation) 	<ul style="list-style-type: none"> • Political acumen (e.g., knowledge of stakeholder position) • Skills to build and maintain stakeholder support and consensus • Reputation
<i>Organizational</i>	<ul style="list-style-type: none"> • Arrangements for data analytics (e.g., access to and analysis of large datasets) • Access to external expertise • Skilled personnel • Organizational culture embracing evidence-based policy 	<ul style="list-style-type: none"> • Inter- and intra-organizational coordination • Collaboration mechanisms (e.g., policy forums) • Financial resources • Mechanisms for organizational learning • Human resource management system 	<ul style="list-style-type: none"> • Reputation • Legitimacy, • Access to key decision-makers • Stakeholder engagement support
<i>Systemic</i>	<ul style="list-style-type: none"> • Extension and quality of data collection and analysis mechanisms and tools (e.g., transparency) • Arrangements to overcome heuristics, biases through competitive advisory systems • Institutional requirements for standards for policy analysis and evaluation 	<ul style="list-style-type: none"> • Mechanisms for intra-state (vertical and horizontal) coordination and planning processes • Collaboration with non-state actors • Clear organizational mandates 	<ul style="list-style-type: none"> • Public trust in government • Legitimacy • Accountability (e.g., citizen participation, multi-level governance arrangements) • Policy/political entrepreneurs

Source: Authors' Elaboration on Wu et al., 2015.

CONTROVERSIAL ISSUES IN CRISIS MANAGEMENT THROUGH POLICY LENSES

We now review the four controversial issues in crisis management according to the two adopted analytical lenses, offered by public policy, to better understand whether and how policy can be designed and implemented appropriately.

Emergency plans

The policy literature emphasizes that the overall policy design of the salient area should be robust and therefore able to cope with uncertainty. For example, in energy policy, various proposals concern the dynamic policy mix that could be designed for a clean transition (Castrejon-Campos et al., 2020); the same is true when the problem is the allocation of resources when health systems face an unexpected pandemic (Eriskin et al., 2024; Shaker Ardakani et al., 2023). Therefore, according to the conceptualization of the robustness of policy, contingency plans in themselves are not sufficient to guarantee the expected level of performance. What is needed is that the things that can be useful in dealing with such crises are embedded in policymaking in the area concerned. This means, for example, that policy design should be characterized by a proper equilibrium in terms of the allocation of functions, that is, according to the national characteristics of the policy field; the design of the governance arrangements and field processes should be characterized by more contextually appropriated coordinated autonomy with a clear provision of the roles and competencies of both the central and local units (Capano & Toth, 2023).

As has been shown, the good performance of the federal and provincial responses in Canada to the COVID-19 pandemic (relative to, for example, the poor performance in the United States) is also due to the clarity of the multilevel policy design in terms of the clear allocation of responsibilities and an appropriate chain of delegation that can allow both local learning and ad hoc responses (Blouin Genest et al., 2021). It is interesting to recall, for example, the case of local social service provision during the pandemic in Lombardia, the Italian region hardest hit by the pandemic. While it is well known that the health response was less effective there than in other Italian regions (Capano & Lippi, 2021), in the case of providing social services at the local level, the performance was much better due to the robustness of the design of the inter-municipal coordination plans. In this case, the design features allowed scalability, prototyping, bounded autonomy, and bricolage, and the performance of social services at the local level was maintained even during the stronger waves of the pandemic (Previtali & Salvati, 2023).

In terms of policy capacities, the relevant issue with respect to the functions that emergency plans should fulfill concerns whether, in a specific context, there are sufficient analytical, operational, and political capacities at all the three levels (individual, organizational, and systemic) to address unexpected and highly disruptive crises. Even the most perfect and rational emergency plan will not function if, for example, at the systemic level, there is not a well-equipped and transparent arrangement for collecting data in real-time or if the reputation of the public organization in charge of administering this policy (and thus pivotal when a crisis touches the latter) is low.

For example, in the case of the financial crisis of 2008, it was observed that there was not enough analytical capacity in the Eurozone due to the hegemonic financial paradigm that had prevailed within the European Central Bank in previous years (Braun, 2015). In the case of the adoption of the Brazilian Drought Preparedness Plan in the last decade, it emerges that the adoption of a common drought observation system for all states was a fundamental tool to map drought conditions in real-time, such as severity, spatial and

temporal development, and local effects, thus enabling policymakers to prepare in advance for possible dramatic events and, above all, to assume a proactive attitude and planning respect to future crises (Cavalcante et al., 2023).

Early signal detection

The paradox emerging from the crisis management literature on early signal detection is, according to the policy lenses, only apparent. In fact, a robust policy design must certainly provide a detailed and sophisticated system of surveillance according to the characteristics of the focal sector. Here, the policy robustness approach suggests the presence of a plurality of sensors at the decentralized level, as well as of those in charge to interpret the signals, and of a strict collaboration among actors in treating and discussing the data. Additionally, it is relevant to design, if necessary, rules that stimulate the development of a report culture as well as the propensity to share information.

For example, it is interesting to observe how, in the case of the early signs of the COVID-19 pandemic, there was a significant difference in data collection between Korea and China due to the different characteristics not only of the political regime but also of the way in which the national/local information system had been designed in advance (Mao, 2021). At the same time, however, it is interesting to observe how relevant differences in response to early signals were also demonstrated in China, where local governments have a certain degree of autonomy: due to differences in local analytical capacity, there were different provincial responses to the pandemic in its early stages (Tan et al., 2023).

It is well known that surveillance systems typically do not guarantee the detection of early warning signals, although this can happen by chance, that is, a single individual has the ability to see a crisis coming. This should not be seen as sufficient motivation to unlock the surveillance system. It is now the case that early warning systems are developing rapidly, from the banking sector to the climate change and disaster sector (Linardos et al., 2022) to the health sector (MacIntyre et al., 2023). The policy analysis framework here, as well as the crisis management literature (Boin, Ekengren, et al., 2021), assumes that having open access to early warning systems can increase the chance that someone will see the crisis in advance and thus guarantee redundancy in the potential sensors (Wu et al., 2015).

It may, of course, happen that alarm signals are sounded, but those who have to make a decision about it do not take these alarms seriously. However, the policy literature suggests that the more individuals (in public organizations) are trained to perceive the unexpected and look at reality in unorthodox ways, the more likely it is that public organizations will take early signals seriously and act as legitimate actors, even in the eyes of politicians. This depends on the operational and political capacity of public organizations (in terms of operational effectiveness, legitimacy, and reputation). The case of the Korean Centers for Disease Control and Prevention and the Swedish National Board of Health during COVID-19 (Mao, 2021; Tan et al., 2023) illustrates this. Therefore, the higher the organizational capacity in terms of staff training for the development of multifaceted cognitive maps and the more the organizational culture is based on an evidence-based perspective, the higher the probability of early signal detection.

Making decisions in the fog of uncertainty

Confronting the controversial issue of how to make decisions under conditions of high uncertainty is particularly challenging. As many as four strategies are proposed: the

minmax criterion; the ask the expert solution; the mimetic strategy; and incremental, trial-and-error decisions that are inherently reversible. All in all, the crisis management literature suggests that the higher the uncertainty is, the more suitable the incremental strategy. This appears to be a reasonable solution. However, what the policy lenses can help discern is that the level of uncertainty can also depend on whether and how the policy has been designed in a robust way and if the early signal function has worked in an effective way. In this case, the more robust the policy design is, and the more some capacities are properly functioning, the less the fog's duration, thereby allowing policymakers to make more incisive decisions.

In other words, what the literature on policy robustness and policy capacity emphasizes is that the level of uncertainty may depend on how policies have been designed and capacity has been prepared. Here, the concept of dynamic robustness is very useful because it refers to the process by which, in a given policy area, from banking (Bakir, 2017) to the environment and climate change (Fraussen et al., 2020; Tschakert & Dietrich, 2010), specific procedural tools are employed to adjust the policy design over time to make it more robust in the achievement of long-term objectives. Consider, for example, the early stages of the COVID-19 pandemic: decision-makers were called upon to make decisions under conditions of extreme uncertainty (Boin, McConnell, 2021). However, from a policy perspective, a robust design could have been useful for dealing with such uncertainty: on this point, for example, there is no doubt that the policy robustness (in terms of proper preparation and capacity to detect and interpret early signals) of countries like Korea or Taiwan or Singapore was higher than that of other Asian countries or Western countries (Capano et al., 2022; Yen et al., 2022). Adequate institutional robustness, as well as adequate analytical and organizational capacity, can therefore help in dealing with high uncertainty until it is decreased.

However, it is clear that there may be situations in which this rationalist perspective cannot be pursued. When this is the case, the policy perspective also suggests adopting an adaptive, learning-by-doing strategy (Nair & Howlett, 2017). This is in line with the pragmatic approach of the crisis management literature (Ansell & Boin, 2019; Boin & Lodge, 2021).

It should also be noted that systemic political institutional capacity is very important when dealing with high uncertainty. Political capacity includes sociopolitical trust, policy and political communication skills, and broader legitimation processes that public institutions and policymakers need to ensure public support for policies and foster greater compliance with rules and regulations (Wu et al., 2018). This is a type of capacity that depends on the characteristics of institutional arrangements (e.g., in the way they design the accountability chain) and on sedimented political practice (Capano & Toth, 2023; Sørensen & Ansell, 2023). Political capacity is crucial in dealing with uncertainty because it is the real resource of legitimacy for the implementation success of the decision taken (whatever its content), as shown, for example, during the COVID-19 pandemic (Chen et al., 2023; Devine et al., 2024).

Centralization/decentralization

Regarding the centralization/decentralization controversial issue, the policy lenses are quite clear. That is, the design of institutional arrangements, procedures, and processes should be definitively characterized by scalability, modularity, polycentricity, and coordinated autonomy (Capano & Woo, 2018; Sorensen & Ansell, 2023). Examples of scalability, such as various emergencies in the Danish and Norwegian cases (Krogh & Lo, 2023) and the Italian case of flood emergencies (Paciarotti et al., 2018), relate to the incorporation of volunteers

to scale up operational responses to crises. Regarding modularity, Sørensen and Torfing (2019), for example, show that the adaptability of Copenhagen's regional scheme, known as the "finger scheme," was robust because it was designed to be modular, allowing different components of the regional scheme to be combined in different ways in response to the dynamic and unforeseeable expansion of the metropolitan area. Hunter (2021), comparing the responses of Melbourne, New York, and Milan to COVID-19, shows how modularity, if properly designed, can make cities more effective in dealing with crises.

Polycentric governance can be an effective configuration for dealing with crises (but it should be remembered that polycentricity does not necessarily mean the absence of any kind of hierarchy); it implies the cooperation (often coordinated) of many public and private actors during crises. For example, in their study of Hurricane Sandy in the US, Storr et al. (2017) argued that polycentric ordering (or configuration), including private actors, played a key role in the post-disaster recovery efforts. In terms of water policy, Pahl-Wostl and Knieper (2014), by comparing the governance arrangements of 27 basins, have shown how polycentric arrangements are more effective than fragmented and monocentric arrangements in addressing the challenge of climate change adaptation.

Coordinated autonomy is a trait that can be designed but should be based on long-term practice and learning. As Capano and Toth (2023) have shown in the case of the first health response to COVID-19 in three Italian regions, limited local autonomy is important for acting appropriately in certain contexts. This allows for decentralized, "heterarchic" institutional arrangements in which each decentralized component is able to take the initiative, improvise, and think for itself without waiting for orders from the center. At the same time, there should be a central role in designing a common commitment, clear guidelines that encourage local responses when needed, monitoring (and eventually correcting) local performance, and disseminating best practices.

The issue of coordination (i.e., relevant for coordinated autonomy and polycentric governance) can also be reinforced by specific procedural instruments that oblige/incentivize the various stakeholders to cooperate (Howlett & Ramesh, 2023). Thus, from the robustness point of view, the way to read this controversial issue is apparently simple: there should be an appropriate design that according to the context and the characteristics of the policy field is capable of discerning the most effective point of equilibrium between centralization and decentralization. Thus, the policy lens perspective does not claim to definitively solve this controversial issue but simply helps shed light on the fact that the design of the relationship of centralization/decentralization makes a difference in terms of the quality of the response to a crisis.

However, the policy capacity lens elucidates that operational and political capacities at the organizational and systemic levels are very relevant in effectively implementing a coordinated autonomistic strategy to combat crises. The complexity of the set of relationships, procedures, and processes of a coordinated autonomistic arrangement needs to be based on a higher level of reputation and operational capacity to engage the related stakeholders of the public organizations involved as well as ensure the higher public trust and legitimacy of the government. Thus, the political dimension, in how it is conceptualized in terms of capacity, again emerges as strategic, as a source for implementing the coordinated autonomistic design (Capano & Lippi, 2021; Capano & Toth, 2023).

Here, it is necessary that the center of the system takes into account the quality of local policy capacity since decentralization implies that local authorities and public organizations have the appropriate policy capacity to act as expected. Thus coordinated autonomy should be linked to the existing policy capacities and, eventually, to a plan to strengthen them.

Table 3 summarizes the just discussed contribution of policy lenses to deal with controversial issues in crisis management.

TABLE 3 Combining crisis management and public policy studies.

	Crisis management	Policy robustness	Policy capacities	The synergy
Emergency plans	<ul style="list-style-type: none"> Preparedness is much more than a written plan. Drawing lessons from previous experiences. 	<ul style="list-style-type: none"> Continuous learning. Improvisation. Preparedness is built over time, learning from experience and updating response plans continuously. 	<p>Preparedness should be systemic. The capacity to improvise and make decisions under pressure must be trained.</p>	<p>Plans are not detailed instruction booklets but identify “response principles” and leave discretion to field workers.</p>
Detecting early signals	<ul style="list-style-type: none"> Mindfulness: awareness of the discriminating detail. Cultural framework that does not hinder ‘report culture’ and stimulates information sharing. 	<ul style="list-style-type: none"> Plurality and redundancy of sensors at decentralized level. Redundancy not only of the sensors but also of those who must interpret the signals. 	<p>Strengthen analytical capacities, at the individual and systemic level (individuals often sound the alarm, but the policymakers do not take this into account). Strengthen the operational capacities at the organizational and systemic level.</p>	<p>Plurality and redundancy of sensors. Strengthen the systemic and individual capacities of policymakers to pick up signals. Reinforce the operational capacity and legitimization of public organizations involved in the specific policy field.</p>
Decision in the fog of uncertainty	<ul style="list-style-type: none"> Avoid interpreting problems as dichotomous. Importance of learning during crises. 	<ul style="list-style-type: none"> The overall design must favor the sharing of information and interpretations. Adaptive, trial-and-error approach. Political capacity. 	<p>Strengthen analytical capacities, both individual, organizational, and systemic, to quickly reduce uncertainty. Strengthen political capabilities to build consensus and trust around decision-makers.</p>	<p>Pragmatic approach proceeding through decisions that are not irreversible. Relevance of political capacity.</p>
Centralization vs decentralization	<ul style="list-style-type: none"> Competence more important than hierarchy. The decision should be made by those who have more expertise in the matter. 	<ul style="list-style-type: none"> Polycentricity, modularity, scalability, and local autonomy. 	<p>Strengthen the operational capacities of the decentralized components to be autonomous. Political capacity of the center to delegate and of the nodes to take responsibility and be legitimate.</p>	<p>“Coordinated autonomy.” Decentralized components must be able to make decisions and act autonomously. The center must support peripheral components in need.</p>

CONCLUSIONS

This article contributes to the crisis management debate by offering at least two original insights. The first contribution is the identification of four main controversial issues in the literature on crisis and disaster management. The second original contribution is the search for solutions to these controversial issues by combining the crisis management literature with public policy analysis (with specific reference to the concepts of “policy robustness” and “policy capacities”). These two research strands have thus far interacted only to a limited extent. However, the authors of this paper believe that these theoretical traditions are largely complementary. The crisis management literature combines conceptual richness with in-depth interpretations of individual case studies, but it often lacks a systemic perspective. Public policy studies are more inclined towards a systemic and comparative perspective, but they usually have a less practical orientation and have so far largely neglected the issue of crisis management and prevention. It is therefore our belief that the integration of these different research traditions can help address and solve the controversial issues discussed in the above.

We are well aware that the theoretical contributions concerning policy robustness and policy capacities illustrated and discussed above, however useful and enlightening they may be, are not yet capable of fully and definitively overcoming all the crucial controversial issues and questions raised in Section 2. Nevertheless, the aim of this paper is not to provide definitive answers to the four identified controversial issues but rather to open a novel research path and initiate a broader reflection on how to frame and address crises.

What is argued in Section 4 should therefore be considered only a first application, a first attempt, which needs further study and reflection. This first exercise shows the potential added value of framing crisis management by adding a genuine public policy perspective. Such a perspective allows individual crisis episodes to be placed in a broader analytical and theoretical framework. The research on policy robustness emphasizes the importance of the design of the entire process, which considers not only the “acute phase” of a crisis but also the phases before and after it. Hence, studies on policy capacities suggest developing competencies and skills not only at the individual and organizational levels (as recommended by most research on crisis and disaster management) but also at the meta-organizational and systemic levels.

Our proposal therefore opens the door to further research, which should follow at least two promising paths of analysis.

From a theoretical point of view, the possibility of building an integrated framework in which the main elements of policy robustness and policy capacity theorization are integrated with the main elements of crisis management in a diachronic perspective should be deepened. This means developing a framework in which the dynamic and processual dimension of crises should be pivotal. Policy robustness and policy capacities are essential in every phase of the process (from prevention to response), but they can be present in different ways and forms, whereby they can be considered cumulative properties. How they accumulate can be strategic in addressing controversial issues.

From an empirical point of view, there is a need for more comparative and longitudinal studies to better understand the critical points in the analyzed controversial issues and what characteristics of policy robustness and policy capacities are more salient according to the specific stage of the process.

Accordingly, bridging the event-oriented perspective of crisis management with the processual and systemic perspective of public policy is, therefore, a promising way not

only to resolve the controversial issues analyzed but also to construct a more fine-grained framework for better understanding and thus practically managing crises.

ACKNOWLEDGMENTS

This article was funded by the project *RETURN* (multi-Risk sciEnce for resilient commUnities undeR a changiNg climate), Spoke DS, funded by the Italian Ministry of Universities and Research on NextGENERATION EU resources. Open access publishing facilitated by Università degli Studi di Bologna, as part of the Wiley - CRUI-CARE agreement.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

ORCID

Gilberto Capano  <http://orcid.org/0000-0003-3533-7407>

REFERENCES

- Alexander, D. 2005. "Towards the Development of a Standard in Emergency Planning." *Disaster Prevention and Management: An International Journal* 14(2): 158–75. <https://doi.org/10.1108/09653560510595164>
- Allison, G. T. 1971. *Essence of Decision: Explaining the Cuban Missile Crisis*. Boston: Little, Brown and Company.
- Ansell, C. K., J. Trondal, and M. Øgård. 2017. *Governance in Turbulent Times*. Oxford: Oxford University Press.
- Ansell, C., and M. Bartenberger. 2019. *Pragmatism and Political Crisis Management*. Cheltenham: Edward Elgar Publishing.
- Ansell, C., E. Sørensen, and J. Torfing. 2021. "The COVID-19 Pandemic as a Game Changer for Public Administration and Leadership? The Need for Robust Governance Responses to Turbulent Problems." *Public Management Review* 23(7): 949–60. <https://doi.org/10.1080/14719037.2020.1820272>
- Ansell, C., E. Sørensen, and J. Torfing. 2023. "Public Administration and Politics Meet Turbulence: The Search for Robust Governance Responses." *Public Administration* 101(1): 3–22. <https://doi.org/10.1111/padm.12874>
- Ansell, C., and A. Boin. 2019. "Taming Deep Uncertainty: The Potential of Pragmatist Principles for Understanding and Improving Strategic Crisis Management." *Administration & Society* 51(7): 1079–112.
- Ansell, C., A. Boin, and A. Keller. 2010. "Managing Transboundary Crises: Identifying the Building Blocks of an Effective Response System." *Journal of Contingencies and Crisis Management* 18(4): 195–207. <https://doi.org/10.1111/j.1468-5973.2010.00620.x>
- Bakir, C. 2017. "How Can Interactions Among Interdependent Structures, Institutions, Agents Inform Financial Stability? What We Have Still to Learn From Global Financial Crisis." *Policy Sciences* 50(2): 217–39.
- Bankes, S. 2010. Robustness, adaptivity, and resiliency analysis. Association for the Advancement of Artificial Intelligence, Papers from Fall Symposium. [paper/view/2242/2643](https://papers.nips.cc/paper/view/2242/2643).
- Baumgartner, F. R., and B. D. Jones. 1993. *Agendas and Instability in American Politics*. Chicago, IL: University of Chicago Press.
- Béland, D., A. J. He, and M. Ramesh. 2022. "COVID-19, crisis responses, and public policies: from the persistence of inequalities to the importance of policy design." *Policy and Society* 41(2): 187–98.
- Boin, A., and P. 't Hart. 2003. "Public Leadership in Times of Crisis: Mission Impossible?" *Public Administration Review* 63(5): 544–53. <https://doi.org/10.1111/1540-6210.00318>
- Boin, A., and P. 't Hart. 2010. "Organising for Effective Emergency Management: Lessons from Research." *Australian Journal of Public Administration* 69(4): 357–71. <https://doi.org/10.1111/j.1467-8500.2010.00694.x>
- Boin, A., and F. Bynander. 2015. "Explaining Success and Failure in Crisis Coordination." *Geografiska Annaler: Series A, Physical Geography* 97(1): 123–35. <https://doi.org/10.1111/geoa.12072>
- Boin, A., and P. Lagadec. 2000. "Preparing for the Future: Critical Challenges in Crisis Management." *Journal of Contingencies and Crisis Management* 8(4): 185–91. <https://doi.org/10.1111/1468-5973.00138>
- Boin, A., and M. Lodge. 2021. "Responding to the COVID-19 Crisis: A Principled or Pragmatist Approach?" *Journal of European Public Policy* 28(8): 1131–52. <https://doi.org/10.1080/13501763.2021.1942155>
- Boin, A., P. 't Hart, and S. Kuipers. 2018. "The Crisis Approach." In *Handbook of Disaster Research*, edited by H. Rodriguez, W. Donner and J. E. Trainor, 23–38. Cham: Springer.

- Boin, A., M. Ekengren, and M. Rhinard. 2021. "Understanding Creeping Crises: Revisiting the Puzzle." In *Understanding the Creeping Crisis*, edited by A. Boin, M. Ekengren and M. Rhinard, 165–77. Basingstoke: Palgrave Macmillan.
- Boin, A., A. McConnell, and P. 't Hart. 2021. *Governing the Pandemic: The Politics of Navigating a Mega-Crisis*. Basingstoke: Palgrave Macmillan.
- Boin, A., E. Stern, and B. Sundelius. 2005. *The Politics of Crisis Management: Public Leadership under Pressure*. Cambridge: Cambridge University Press.
- Blouin Genest, G., N. Burlone, E. Champagne, C. Eastin, and C. Ogaranko. 2021. "Translating COVID-19 Emergency Plans into Policy: A Comparative Analysis Of Three Canadian Provinces." *Policy Design and Practice* 4(1): 1–18. <https://doi.org/10.1080/25741292.2020.1868123>
- Braun, B. 2015. "Preparedness, Crisis Management and Policy Change: The Euro Area at the Critical Juncture of 2008–2013." *The British Journal of Politics and International Relations* 17(3): 419–41. <https://doi.org/10.1111/1467-856X.12026>
- Capano, G., and J. J. Woo. 2017. "Resilience and Robustness In Policy Design: A Critical Appraisal." *Policy Sciences* 50(3): 399–426. <https://doi.org/10.1007/s11077-016-9273-x>
- Capano, G., and J. J. Woo. 2018. "Designing Policy Robustness: Outputs and Processes." *Policy and Society* 37(4): 422–40. <https://doi.org/10.1080/14494035.2018.1504494>
- Capano, G., and A. Lippi. 2021. "Decentralization, Policy Capacities, and Varieties of First Health Response to the COVID-19 Outbreak: Evidence From Three Regions In Italy." *Journal of European Public Policy* 28(2): 1197–218. <https://doi.org/10.1080/13501763.2021.1942156>
- Capano, G., and F. Toth. 2023. "Thinking Outside the Box, Improvisation, and Fast Learning: Designing Policy Robustness to Deal With What Cannot be Foreseen." *Public Administration* 101(1): 90–105. <https://doi.org/10.1111/padm.12861>
- Capano, G., M. Howlett, D. S. L. Jarvis, M. Ramesh, and N. Goyal. 2020. "Mobilizing Policy (In)Capacity to Fight COVID-19: Understanding Variations in State Responses." *Policy and Society* 39(3): 285–308. <https://doi.org/10.1080/14494035.2020.1787628>
- Capano, G., M. Howlett, D. S. L. Jarvis, and M. Ramesh. 2022. "Long-Term Policy Impacts of the Coronavirus: Normalization, Adaptation, and Acceleration in the Post-COVID State." *Policy and Society* 41(1): 1–12. <https://doi.org/10.1093/polsoc/puab018>
- Capoccia, G., and R. D. Kelemen. 2007. "The Study of Critical Junctures: Theory, Narrative and Counterfactuals in Historical Institutionalism." *World Politics* 59: 341–69. <https://doi.org/10.1017/S0043887100020852>
- Castrejon-Campos, O., L. Aye, and F. K. P. Hui. 2020. "Making Policy Mixes More Robust: An Integrative and Interdisciplinary Approach for Clean Energy Transitions." *Energy Research & Social Science* 64: 101425.
- Cavalcante, L., W. Pot, P. van Oel, S. Khouk, G. R. Neto, and A. Dewulf. 2023. "From Creeping Crisis to Policy Change: The Adoption of Drought Preparedness Policy in Brazil." *Water Policy* 25(10): 949–65. <https://doi.org/10.2166/wp.2023.073>
- Chen, C., C. B. Frey, and G. Presidente. 2023. "Disease and Democracy: Political Regimes and Countries Responsiveness To COVID-19." *Journal of Economic Behavior & Organization* 212: 290–9. <https://doi.org/10.1016/j.jebo.2023.04.034>
- Clarke, L. 1999. *Mission Improbable: Using Fantasy Documents to Tame Disaster*. Chicago: University of Chicago Press.
- Cunha, M. P., K. Kamoche, and J. V. Cunha. 2002. *Organizational Improvisation*. London: Routledge.
- Cunha, M. P., S. R. Clegg, and K. Kamoche. 2006. "Surprises in management and organization: Concept, sources and a typology." *British Journal of Management* 17(4): 317–29.
- Denford, J. S., G. S. Dawson, K. C. Desouza, and A. P. Manoharan. 2022. "Assessing the Relevance of Governmental Characteristics to Address Wicked Problems in Turbulent Times." *Public Management Review*, 1–22. Early view 25 September.
- Devine, D., V. Valgarðsson, J. Smith, W. Jennings, M. Scotto di Vettimo, H. Bunting, and L. McKay. 2024. "Political Trust in the First Year of the COVID-19 Pandemic: A Meta-Analysis of 67 Studies" *Journal of European Public Policy* 1(3): 657–79.
- DiMaggio, P. J., and W. W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality In Organizational Fields." *American Sociological Review* 48(2): 147–60. <https://doi.org/10.2307/2095101>
- Douglas, M. and A. Wildavsky. 1983. *Risk and culture*. Berkeley: University of California Press.
- Doz, Y. and M. Kosonen. 2014. "Governments for the future: Building the strategic and agile state." *Sitra Studies* 80. Available from <https://www.sitra.fi/app/uploads/2017/02/Selivityksia80.pdf>
- Eriskin, L., M. Karatas, and Y.-J. Zheng. 2024. "A Robust Multi-Objective Model for Healthcare Resource Management and Location Planning During Pandemics." *Annals of Operations Research* 335: 1471–518.

- Fraussen, B., A. Albareda, and C. Braun. 2020. "Conceptualizing Consultation Approaches: Identifying Combinations of Consultation Tools and Analyzing Their Implications for Stakeholder Diversity." *Policy Sciences* 53(3): 473–93. <https://doi.org/10.1007/s11077-020-09382-3>
- Gundel, S. 2005. "Towards a New Typology of Crises." *Journal of Contingencies and Crisis Management* 13(3): 106–15. <https://doi.org/10.1111/j.1468-5973.2005.00465.x>
- Hindmoor, A., and A. McConnell. 2013. "Why Didn't They See it Coming? Warning Signs, Acceptable Risks and the Global Financial Crisis." *Political Studies* 61(3): 543–60. <https://doi.org/10.1111/j.1467-9248.2012.00986.x>
- Hofstede, G. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations* (2nd ed.). Thousand Oaks, CA: Sage.
- Howlett, M., and M. Ramesh. 2016. "Achilles' Heels of Governance: Critical Capacity Deficits and Their Role in Governance Failures: The Achilles Heel of Governance." *Regulation & Governance* 10(4): 301–13.
- Howlett, M., G. Capano, and M. Ramesh. 2018. "Designing for Robustness: Surprise, agility and Improvisation in Policy Design." *Policy and Society* 37(4): 405–21. <https://doi.org/10.1080/14494035.2018.1504488>
- Howlett M. and I. Mukherjee. (eds.). 2018. *Routledge Handbook of Policy Design*. London: Routledge.
- Howlett, M., and M. Ramesh. 2023. "Designing for Adaptation: Static and Dynamic Robustness in Policy-Making." *Public Administration* 101(1): 23–35. <https://doi.org/10.1111/padm.12849>
- Hudson, B., D. Hunter, and S. Peckham. 2019. "Policy Failure and the Policy-Implementation Gap: Can Policy Support Programs Help?" *Policy Design and Practice* 2(1): 1–14. <https://doi.org/10.1080/25741292.2018.1540378>
- Hunter, M. 2021. "Resilience, Fragility, and Robustness: Cities and COVID-19." *Urban Governance* 1(2): 115–25. <https://doi.org/10.1016/j.ugj.2021.11.004>
- Kingdon, J. W. 1984. *Agenda, Alternatives and Public Policies*. Glenview: Scott Foresman.
- Klein, G. A. 2009. *Streetlights and Shadows: Searching for the Keys to Adaptive Decision Making*. Cambridge, MA: MIT Press.
- Krogh, A. H., and C. Lo. 2023. "Robust Emergency Management: The Role of Institutional Trust in Organized Volunteers." *Public Administration* 101(1): 142–57. <https://doi.org/10.1111/padm.12894>
- Linardos, V., M. Drakaki, P. Tziona, and Y. Karnavas. 2022. "Machine Learning in Disaster Management: Recent Developments in Methods and Applications." *Machine Learning and Knowledge Extraction* 4(2): 446–73. <https://doi.org/10.3390/make4020020>
- MacIntyre, C. R., X. Chen, M. Kunasekaran, A. Quigley, S. Lim, H. Stone, H.-Y. Paik, et al. 2023. "Artificial Intelligence in Public Health: The Potential Of Epidemic Early Warning Systems." *Journal of International Medical Research* 51(3): 03000605231159335. <https://doi.org/10.1177/03000605231159335>
- Mathijssen, J.A., P. Petersen Besseling, A. Rahman, and H. Don. (eds.). 2007. *Dealing with uncertainty in policy making*, CPB/PBL/Rand Europe, Final report of the conference Dealing with Uncertainty in Policy Making, 16–17 May 2006, The Hague.
- Majchrzak, A., S. L. Jarvenpaa, and A. B. Hollingshead. 2007. "Coordinating Expertise Among Emergent Groups Responding to Disasters." *Organization Science* 18(1): 147–61. <https://doi.org/10.1287/orsc.1060.0228>
- Mao, Y. 2021. "Political Institutions, State Capacity, and Crisis Management: A Comparison of China and South Korea." *International Political Science Review* 42(3): 316–32. <https://doi.org/10.1177/0192512121994026>
- McConnell, A., and L. Drennan. 2006. "Mission Impossible? Planning and Preparing for Crisis." *Journal of Contingencies and Crisis Management* 14(2): 59–70. <https://doi.org/10.1111/j.1468-5973.2006.00482.x>
- McConnell, A. 2010. *Understanding Policy Success: Rethinking Public Policy*. Basingstoke: Palgrave Macmillan.
- Mergel, I., S. Ganapati, and A. B. Whitford. 2020. "Agile: A New Way of Governing." *Public Administration Review* 81(1): 161–5. <https://doi.org/10.1111/puar.13202>
- Mignone, A. T., and R. Davidson. 2003. "Public Health Response Actions and the Use of Emergency Operations Centers." *Prehospital and Disaster Medicine* 18(3): 217–9. <https://doi.org/10.1017/S1049023X00001084>
- Militello, L. G., E. S. Patterson, L. Bowman, and R. Wears. 2007. "Information Flow During Crisis Management: Challenges to Coordination in the Emergency Operations Center." *Cognition, Technology & Work* 9: 25–31.
- Moynihan, D. P. 2009. "The Network Governance of Crisis Response: Case Studies of Incident Command Systems." *Journal of Public Administration Research and Theory* 19(4): 895–915. <https://doi.org/10.1093/jopart/mun033>
- Mukherjee, I., M. K. Coban, and A. S. Bali. 2021. "Policy Capacities and Effective Policy Design: a Review." *Policy Sciences* 54(2): 243–68. <https://doi.org/10.1007/s11077-021-09420-8>

- Nair, S., and M. Howlett. 2017. "Policy Myopia as a Source Of Policy Failure: Adaptation and Policy Learning Under Deep Uncertainty." *Policy and Politics* 45(1): 103–18. <https://doi.org/10.1332/030557316X14788776017743>
- Paciariotti, C., A. Cesaroni, and M. Bevilacqua. 2018. "The Management of Spontaneous Volunteers: A Successful Model From a Flood Emergency in Italy." *International Journal of Disaster Risk Reduction* 31: 260–74. <https://doi.org/10.1016/j.ijdr.2018.05.013>
- Pahl-Wostl, C., and C. Knieper. 2014. "The Capacity of Water Governance to Deal With the Climate Change Adaptation Challenge: Using Fuzzy Set Qualitative Comparative Analysis To Distinguish Between Polycentric, Fragmented and Centralized Regimes." *Global Environmental Change* 29: 139–54. <https://doi.org/10.1016/j.gloenvcha.2014.09.003>
- Painter, M. and J. Pierre. eds. 2005. *Challenges to State Policy Capacity: Global Trends and Comparative Perspectives*. Basingstoke: Palgrave Macmillan.
- Pearson, C. M., and I. I. Mitroff. 1993. "From Crisis Prone To Crisis Prepared: A Framework for Crisis Management." *Academy of Management Executive* 7(1): 48–59.
- Perrow, C. 1984. *Normal Accidents. Living with High-Risk Technologies*. Princeton: Princeton University Press.
- Perry, R. W., and M. K. Lindell. 2003. "Preparedness for Emergency Response: Guidelines for the Emergency Planning Process." *Disasters* 27(4): 336–50.
- Peters, G. and G. Fontaine. (eds.) 2022. *Research Handbook of Policy Design*. Cheltenham: Edward Elgar.
- Previtali, P. and E. Salvati. 2023. "Governance Robustness Put to the Test by Covid-19. The Case of Local Area Plans in the Lombardy Region." *European Planning Studies* 31(12): 2637–58. <https://doi.org/10.1080/09654313.2023.2203714>
- Quarantelli, E. L. 1985. "Organizational behavior in disasters and implications for disaster planning." The Disaster Research Center, Report Series n. 18.
- Quarantelli, E. L. 1988. "Disaster Crisis Management: A Summary Of Research Findings." *Journal of Management Studies* 25(4): 373–85. <https://doi.org/10.1111/j.1467-6486.1988.tb00043.x>
- Roberts, K. H. 1990. "Some Characteristics of One Type of High Reliability Organization." *Organization Science* 1(2): 160–76. <https://doi.org/10.1287/orsc.1.2.160>
- Roberts, K. H., S. K. Stout, and J. J. Halpern. 1994. "Decision Dynamics in Two High-Reliability Military Organizations." *Management Science* 40(5): 614–24. <https://doi.org/10.1287/mnsc.40.5.614>
- Rochlin, G. I., T. R. La Porte, and K. H. Roberts. 1987. "The Self-Designing High-Reliability Organization: Aircraft Carrier Flight Operations at Sea." *Naval War College Review* 40(4): 76–92.
- Rosenthal, U., P. 't Hart, and M. T. Charles. 1989. "The World of Crises and Crisis Management." In *Coping With Crises. The Management of Disasters, Riots and Terrorism*, edited by U. Rosenthal, M. T. Charles and P. 't Hart, 3–33. Springfield, IL: Charles C Thomas.
- Rotberg, R. I. 2014. "Good Governance Means Performance and Results." *Governance* 27(3): 511–8. <https://doi.org/10.1111/gove.12084>
- Shaker Ardakani, E., N. Gilani Larimi, M. Oveysi Nejad, M. Madani Hosseini, and M. Zargoush. 2023. "A Resilient, Robust Transformation of Healthcare Systems to Cope With COVID-19 Through Alternative Resources." *Omega* 114: 102750. <https://doi.org/10.1016/j.omega.2022.102750>
- Sørensen, E., and J. Torfing. 2019. "The Copenhagen Metropolitan Finger." In *Great Policy Successes*, edited by P. 't Hart and M. Compton, 218–43. Oxford: Oxford University Press.
- Sørensen, E., and C. Ansell. 2023. "Towards a Concept of Political Robustness." *Political Studies* 71(1): 69–88. <https://doi.org/10.1177/0032321721999974>
- Storr, V. H., L. E. Grube, and S. Haefele-Balch. 2017. "Polycentric Orders and Post-Disaster Recovery: A Case Study of One Orthodox Jewish Community Following Hurricane Sandy." *Journal of Institutional Economics* 13(4): 875–97. <https://doi.org/10.1017/S1744137417000054>
- Tan, H., Y. Li, J. Huang, and X. Liu (2023). Is It All About the Government's Early Response? A Configurational Analysis of 27 Cases in Governing COVID-19 in China. *Review of Policy Research*, early view 27 November, 1–24.
- 't Hart, P., U. Rosenthal, and A. Kouzmin. 1993. "Crisis Decision Making: The Centralization Thesis Revisited." *Administration & Society* 25(1): 12–45.
- Tiernan, A., and J. Wanna. 2006. *Competence, Capacity, Capability: Towards Conceptual Clarity in the Discourse of Declining Policy Skills. Paper presented at the govnet international conference*. Australian National University, Canberra, Australia.
- Toth, F. 2021. "How the Health Services of Emilia-Romagna, Lombardy and Veneto Handled the Covid-19 Emergency." *Contemporary Italian Politics* 13(2): 226–41. <https://doi.org/10.1080/23248823.2021.1903174>
- Tschakert, P., and K. A. Dietrich. 2010. "Anticipatory Learning for Climate Change Adaptation and Resilience." *Ecology and Society* 15(2): art11. <https://doi.org/10.5751/ES-03335-150211>
- Turner, B. A., and N. F. Pidgeon. 1997. *Man-Made Disasters*. Oxford: Butterworth-Heinemann.

- Vaughan, D. 1996. *The Challenger Launch Decision*. Chicago: University of Chicago Press.
- Voltolini, B., M. Natorski, and C. Hay. 2020. "Introduction: The Politicisation of Permanent Crisis In Europe." *Journal of European Integration* 42(5): 609–24. <https://doi.org/10.1080/07036337.2020.1792460>
- Yen, W.-T., LY. Liu, E. Won, and U. Testriono. 2022. "The Imperative of State Capacity in Public Health Crisis: Asia's Early COVID-19 Policy Responses." *Governance* 35(3): 777–98. <https://doi.org/10.1111/gove.12695>
- Weible, C. M., D. Nohrstedt, P. Cairney, D. P. Carter, D. A. Crow, A. P. Durnová, T. Heikkilä, et al. 2020. "COVID-19 and the Policy Sciences: Initial Reactions and Perspectives." *Policy Sciences* 53(2): 225–41. <https://doi.org/10.1007/s11077-020-09381-4>
- Weick, K. E., and K. Sutcliffe. 2007. *Managing the Unexpected: Assuring High Performance in an Age of Complexity*. San Francisco: Jossey-Bass.
- Wenzelburger, G., P. D. König, and F. Wolf. 2019. "Policy Theories in Hard Times? Assessing the Explanatory Power of Policy Theories in the Context of Crisis." *Public Organization Review* 19(1): 97–118. <https://doi.org/10.1007/s11115-017-0387-1>
- Wu, X., M. Ramesh, and M. Howlett. 2015. "Policy Capacity: A Conceptual Framework for Understanding Policy Competences and Capabilities." *Policy and Society* 34(3–4): 165–71. <https://doi.org/10.1016/j.polsoc.2015.09.001>
- Wu X., M. Howlett, and M. Ramesh. eds. 2018. *Policy Capacity and Governance: Assessing Governmental Competences and Capabilities in Theory and Practice*. Cham: Palgrave Macmillan. <https://doi.org/10.1007/978-3-319-54675-9>

AUTHOR BIOGRAPHIES



Giliberto Capano is a professor of Public Policy at the University of Bologna, Italy. He specializes in public administration, public policy analysis, and comparative higher education. His research focuses on governance dynamics and performance in higher education and education, policy design and policy change, policy instruments' impact, the social role of political science, the policy impact of Covid-19, and leadership as an embedded function of policy making. His recent books are *A modern Guide to Public Policy* (coedited with M. Howlett, Edward Elgar, 2020); *Convergence and Diversity in the Governance of Higher Education* (coedited with D. Jarvis, Cambridge University Press, 2020); *Trajectories of Governance How States Shaped Policy Sectors in the Neoliberal Age* (coauthored with A. Zito, J. Rayner, and F. Toth, Palgrave, 2022); *The Fate of Political Scientists in Europe* (with Luca Verzichelli, Palgrave, 2023).



Federico Toth is a full professor of Political Science at the University of Bologna, where he teaches Organization Theory and Health Systems. His main areas of research include comparative health policy, policy-making analysis, and—for some time now—crisis management. In 2021 he published, with Cambridge University Press, the monograph entitled "Comparative Health Systems: A New Framework." He recently authored, together with Giliberto Capano, Anthony R. Zito, and Jeremy Rayner, "Trajectories of Governance. How States Shaped Policy Sectors in the Neoliberal Age" (Palgrave Macmillan, 2022).

How to cite this article: Capano, G., and F. Toth. 2024. "Controversial Issues in Crisis Management. Bridging public policy and Crisis Management to Better Understand and Address Crises." *Risk, Hazards, & Crisis in Public Policy* 16: e12304. <https://doi.org/10.1002/rhc3.12304>