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Collaborative crisis management: a plausibility probe of core assumptions

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ABSTRACT

In this article, we utilize the Collaborative Governance Databank to empirically explore core theoretical assumptions about collaborative governance in the context of crisis management. By selecting a subset of cases involving episodes or situations characterized by the combination of urgency, threat, and uncertainty, we conduct a plausibility probe to garner insights into a number of central assumptions and dynamics fundamental to understanding collaborative crisis management. Although there is broad agreement among academics and practitioners that collaboration is essential for managing complex risks and events that no single actor can handle alone, in the literature, there are several unresolved claims and uncertainties regarding many critical aspects of collaborative crisis management. Assumptions investigated in the article relate to starting-points and triggers for collaboration, level of collaboration, goal-formulation, adaptation, involvement and role of non-state actors, and the prevalence and impact of political infighting. The results confirm that crises represent rapidly moving and dynamic events that raise the need for adaptation, adjustment, and innovation by diverse sets of participants. We also find examples of successful behaviours where actors managed, despite challenging conditions, to effectively contain conflict, formulate and achieve shared goals, adapt to rapidly changing situations and emergent structures, and innovate in response to unforeseen problems.

KEYWORDS

Collaborative governance; crisis management; comparative case-studies; extreme events; disasters

Introduction

It is a central precept of good governance to prepare for predictable risks as well as unthinkable contingencies and to invest the necessary resources to minimize the impacts on people and society from catastrophic events when they occur (Ansell, 2019; Widmalm, Parker, & Persson, 2019). To effectively prepare for and respond to complex crises, such as natural hazard events, terrorist attacks, pandemics, or, other large-scale accidents and emergencies, an array of responsible organizations must be able to collaborate across sectors, disciplines, jurisdictions,

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territorial boundaries, and levels of authority (Ansell, Boin, & Keller, 2010; Bynander & Nohrstedt, 2020; Nohrstedt, Bynander, Parker, & 't Hart, 2018; Parker & Sundelius, 2020).

Supplying societal security – safeguarding citizens from harm, protecting critical infrastructure, and ensuring the capability of government and civil society to function under stress – necessitates a 'whole-of-government' approach, and often even a 'whole-of-society' approach, which in turn necessitates collaborative governance and collaborative crisis management capacities ('t Hart & Sundelius, 2013; Ansell & Gash, 2007; Sundelius, 2006). From this viewpoint, the provision of safety and security requires the active involvement of a variety of actors and stakeholders engaging in collective action across organizational boundaries to rapidly furnish expertise and capabilities, both of which are essential for managing events that surpass the capacity of individual organizations.

Scholars of crises, disasters, and emergencies have long been sensitive to the collective-action challenges related to preparing for and responding to risks, threats, and extreme events. Social science research, dating back to the disaster sociology of the 1960s, has zeroed in on studying the related phenomena of coordination, cooperation, and collaboration (Drabek, 2007). More recently, developments in collaborative public management and policy networks have advanced our understanding of collaboration in crisis management (Ansell & Gash, 2007; Choi & Brower, 2006; Kapucu, Arslan, & Demiroz, 2010) and as collaborative governance research flourished, so did scholarship on collaborative crisis management (Bynander & Nohrstedt, 2020; McGuire, Brudney, & Gazley, 2010; Nohrstedt et al., 2018). However, mirroring the pattern we see in collaborative governance more broadly (Douglas et al., 2020), the existing research on collaborative crisis management is dominated by case-studies and small N comparative case-studies with limited effort to explore the generalizability of core assumptions. Past empirical research has also been biased toward North American and European cases (Nohrstedt et al., 2018).

In this article, we conduct a comparative case-study involving seven suitable cases (Table 1) of collaboration in crisis management selected from the Collaborative Governance Databank. These cases, covering events in Europe, North America, Asia, and Africa, specifically represent instances of collaborative governance, defined by the Collaborative Governance Databank (Douglas et al., 2020) as 'a collective decision-making process based on more or less institutionalized interactions between two or more actors that aims to establish common ground for joint problem solving and value creation'. We focus here on a subset of collaborative governance cases pertaining to episodes or situations characterized by a level of urgency to act, combined with a threat to

Table 1. Overview of Collaborative Crisis Management Cases

Case (period)	Policy domain*	Country or area
Volcanic ash cloud (2010, 2011)	Environment and climate, Public safety, Technology and transport	Europe
Wildfire Fort McMurray (2016)	Environment and climate	Canada
Earthquakes Van and Ercis (2011)	Security and public safety, Disaster response	Turkey
Floods (2011– 2016)	Environment and climate	Vietnam
Foodborne disease (2011)	Agriculture, Economy and trade, Health, Food	Germany, France
Ebola epidemic (2014)	Health	West Africa
Wildfire Västmanland (2014)	Agriculture, Environment and climate, Infrastructure planning, Health, Security and public safety, Emergency management	Sweden

*Domains predefined by the Collaborative Governance Databank (Douglas et al., 2020, see specifically coding item #9) and indicated by case coders. Multiple domains possible.

core societal values, and uncertainty considering the nature of the situation and the viability of different courses of action (Boin, 't Hart, Stern, & Sundelius, 2017).

Although it is often said that each crisis is unique, in our view, collaborative crisis management involves a set of common challenges that demand further comparative research. Therefore, we aim to broaden the scope of inquiry in relation to previous studies that explore assumptions concerning collaborative crisis management in single cases. Clearly, the seven cases examined here are still far too limited and eclectic as an empirical basis for conducting reliable validity 'tests' or reaching robust generalizations (George & Bennett, 2005). Instead, we start by utilizing the suitable cases that now exist in the Databank to conduct a 'plausibility probe' in an effort to make an empirically informed judgment whether more ambitious and systematic tests of the assumptions are warranted (Eckstein, 1975). The areas investigated in the article include starting-points and triggers for crisis management collaborations, formal planning versus emergent collaborations, level of collaboration, bottom-up and top-down processes, the upscaling dilemma, goal-formulation, adaptation through intra-crisis learning, the involvement and role of non-state/governmental actors, and the prevalence and impact of political infighting.

Past research and theoretical departure points

Collaborative crisis management can broadly be defined as the collective efforts of multiple autonomous actors working across organizational boundaries, levels of authority, and sectors to prepare for, respond to, and learn from risks and extreme events that disrupt our modern society (Bynander & Nohrstedt, 2020; Nohrstedt et al., 2018). For a crisis – defined as a situation or event that threatens core values and necessitates urgent action in the face of uncertainty – to be managed effectively, decision makers and involved organizations must pull together in order to contribute to the specific phases and activities that make up crisis management including preparedness, mitigation, response, recovery, and learning (Boin et al., 2017).

Prior research has examined the factors, institutional arrangements, and processes that enable and constrain collaborative crisis management including starting-points, the jurisdictional level at which the collaboration occurred in various phases, goal-formulation, adaptation, the types of actors participating in collaboration, and the role of political infighting (Choi & Brower, 2006; Kapucu, 2006; McGuire & Silvia, 2010). Other aspects have also been examined, but we concentrate on these areas because they constitute core theoretical assumptions in the literature that are also all covered in the coding framework for the case databank. These theoretical departure points are introduced below.

Starting-points and triggers: formal planning versus emergent CM collaborations

Collaborative governance arrangements emerge under different circumstances, be it externally directed by law or authority, self-initiated by its participants, or independently convened by a third party (Emerson & Nabatchi, 2015; Provan & Kenis, 2007). Because responsible authorities are expected to protect their citizens and respond effectively when disaster strikes (Ansell, 2019; Boin et al., 2017; Parker, Persson, & Widmalm, 2019), designated emergency management

organizations and networks are generally given the responsibility to prepare for and respond to known contingencies, commonly referred to as 'routine emergencies'. However, when a crisis strikes, due to the scale, novelty, or cascading dynamics of the event, it can require the mobilization of a more diverse network of organizations to respond to and manage the situation (Boin & 't Hart, 2010; Nohrstedt, 2016; Nohrstedt et al., 2018).

What remains unclear is whether crises provoke responsible organizations to rely more strictly on previous collaborative arrangements with familiar partners or whether they drive new collaborations that expand the number of involved actors (Bodin, Nohrstedt, Baird, Plummer, & Summers, 2019). It has been noted in the literature that emergencies, which require rapid decision-making due to the urgency and time-pressure, are not ideal times for establishing emergent collaborations with new partners or expanding existing collaborative arrangements (Kapucu, Arslan, & Collins, 2010). The issue of participation also raises questions regarding the potential costs and benefits related to the scale of collaboration, including transaction-costs, incentives to contribute to the collective effort, and opportunities for frequent interactions (Poteete & Ostrom, 2004).

Level of collaboration: bottom-up and top-down processes

Large-scale crises and disasters are often so complex that the management and response of the event will consist of multiple organizations and can involve multiple levels (Boin & Bynander, 2015; Bynander & Nohrstedt, 2020; Nohrstedt et al., 2018). In many systems, collaborative crisis management is organized according to what has been called the 'principle of disaster subsidiarity' (Boin et al., 2017) or a bottom-up process that is guided by the proposition that local authorities are best situated to plan for and respond to crises and emergencies in their geographical area, but, depending on the situation, or if there is a lack of capacity to cope with the situation, upscaling will be required. This can be a tricky and contentious issue and previous research has identified the 'upscaling dilemma' as a key issue in collaborative crisis management (Boin & Bynander, 2015). For example, it can be challenging to forge agreement about when higher authorities should get involved, what form their involvement should take, and how they should relate to actors at lower levels of authority (Boin et al., 2017; Nohrstedt, Baird, Bodin, Summers, & Plummer, 2020).

It should be kept in mind that not all systems are organized according to the disaster subsidiarity principle and some, such as in Vietnam and Turkey, for example, are centrally organized at the national level and have a much more top-down hierarchical character (Hermansson, 2016). Nonetheless, the reality that extreme events and crises can overwhelm single actors and cross geographical, organizational, and sectoral boundaries has created the need for organizations, regardless of the level of government, to collaborate and coordinate their efforts, vertically as well as horizontally, to meet these challenges (Ansell et al., 2010; Boin & Bynander, 2015; Galaz, Moberg, Olsson, Paglia, & Parker, 2011; Parker, Stern, Paglia, & Brown, 2009; Parker & Sundelius, 2020).

Goal formulation

Jointly formulating and realizing shared goals has been identified as an essential aspect of collaboration (Ansell & Gash, 2007). At the same time, it has been recognized that a narrow focus on goal-attainment can limit a full understanding of collaboration, which in practice entails complex interactions leading to differential outcomes at the level of individual organizations, networks, and for society at large (Keast & Mandell, 2013).

Goal-attainment is crucial, yet also problematic, as a basis for understanding collaborative crisis management. Considerable time and resources are often devoted to establishing structures and routines to support shared problem perceptions and goals during crises. Examples include practices for achieving 'shared situation awareness' and 'joint operating pictures' to support sense-making among diverse sets of actors (Boin et al., 2017). However, focusing exclusively on the ability of actors to articulate and achieve joint goals is insufficient as a basis for assessing effectiveness, especially since the collaborating actors can put up smoke screens with the motive of attempting to make themselves look good after the fact and that might obscure the complexity of setting consensus goals. Clearly, there is more at stake and what is required for judging crisis management as a success or a failure goes beyond narrow conceptions of goal-attainment (McConnell, 2011; Nohrstedt et al., 2018).

Nonetheless, the formulation and attainment of shared goals are key aspects of crisis management. Given transaction costs, one may also expect goal-attainment to be challenging; that is, the collaborative crisis response outcomes may not correspond with goals and ambitions that were formulated at the onset.

Adaptation through intra-crisis learning

Adaptation is a key attribute that can determine the success of collaborative governance arrangements in turbulent environments. This is based on the insight that when faced with complex and uncertain problems, actors are generally better off if they can continuously monitor, review and, if needed, adjust their understanding of problems, their working methods, and solutions. Such adaptive capacity is a defining characteristic of a resilient system capable of renewal (Berkes, 2007; Folke, Hahn, Olsson, & Norberg, 2005) and an attribute of well-functioning collaborative governance regimes (Emerson & Nabatchi, 2015). Adaptation has also been depicted as a key feature of so-called High Reliability Organizations, which are found in areas where the costs of errors are high (for example, nuclear power, air traffic control, military operations). These organizations are generally able to switch from a normal mode of operation to rapid response and contingency when required (La Porte, 2006). These capacities are important in collaborative crisis management as well.

Acute crises provide a unique context in this regard. Most discussion about adaptation concerning complex policy problems usually focuses on adaptation over time, where actors gradually learn and adjust in iterative and incremental cycles through trial-and-error. This is also a common emphasis in collaborative governance studies on learning (Gerlak & Heikkila, 2011) and literature on network evolution (Nohrstedt & Bodin, 2014). Crises are different, since actors have limited – if any – time to review and reflect

upon their plans and actions. Moreover, crises are situations where information is either incomplete or overwhelming, which complicates accurately assessing the situation and evaluating the efficacy of any actions taken. Consequently, actors often resort to 'fuzzy gambling' and make decisions under substantial uncertainty and with a limited sense of probabilities (Moynihan, 2008).

Despite these difficulties, adaptation is viewed as crucial for successful crisis response (Harrald, 2006). More generally, adaptation is depicted as a success factor that explains why (some) collaborative arrangements are effective in addressing complex problems. Collaborative arrangements are particularly important as they support several dimensions conducive to adaptation, including inclusiveness, diversified leadership, knowledge generation and learning, and resources (Emerson & Gerlak, 2014). Similarly, learning, flexibility and the ability to improvise are often described as characteristics of an effective crisis response system (Comfort, 2002; Wise, 2006).

Non-state/governmental actors

Governance, in many modern societies, has undergone a paradigmatic change in which greater levels of power, influence, and responsibility have gradually been transferred from the state to private actors and stakeholders (Peters, 2012). Crisis management is no exception to this development, as recognized by the key role of business, non-profit, and voluntary groups in the various phases of planning for, responding to, and recovering from crisis events. Examples of such constellations include various forms of public-private partnerships, for example, critical infrastructure, resilience building, crisis response operations, community physical reconstruction, and collaborative learning (Chen, Chen, Vertinsky, Yumagulova, & Park, 2013).

Such arrangements are more or less formalized and range from institutionalized arrangements, such as contractual partnerships, to more informal and emergent *ad hoc* social networks that form in response to an acute need to integrate and coordinate resources and actions across sectoral boundaries. These collaborative arrangements also vary according to the types of non-state actors that participate, including non-profit organizations, voluntary associations, community actors, and private interests. Multi-organizational approaches based on such cross-sectoral interactions and relationships have been described as an important condition for reducing the risk of natural hazards, such as the 'whole-of-society' approach promoted by the Sendai Framework for Disaster Risk Reduction to reduce disaster losses worldwide.

Political infighting

One could imagine that the atmosphere created by a dramatic crisis would bring organizations closer together and temporarily suspend any bureau-political frictions. Although there may be examples of such experiences, findings from crisis management research often seem to point in the opposite direction, recognizing the role of conflict, inter-organizational tensions and infighting – a phenomenon disaster experts have coined the 'battle of the Samaritans' (Rosenthal, 't Hart, & Kouzmin, 1991).

Conflicts are a natural part of collaborative governance more generally and many collaborative arrangements entail mechanisms for mediating and resolving conflicts

among the participants (Emerson & Nabatchi, 2015), such as developing a conflict management plan, insisting on participation based on good faith, and maintaining transparency (O'Leary & Bingham, 2009). During crises, the potential negative effects of unresolved conflicts are many, including the breakdown of channels for vital communication and coordination. For these reasons, the absence of political infighting has been depicted as a condition for effective crisis response networks (Boin & 'tHart, 2010) and why when problems do arise there is a need for some actors to take on leadership roles to resolve or mitigate conflicts between other actors (Sullivan, Williams, & Jeffares, 2012).

Methods

Case-selection

To select cases for this analysis, we included from the Collaborative Governance Databank all cases featuring episodes or situations characterized by the combination of urgency, threat, and uncertainty. At the time this search was conducted (August, 2019), the databank contained a total of 44 coded cases, out of which seven fulfilled these criteria (Douglas et al., 2020). The final selection includes cases from different parts of the world (Europe, North America, Asia, and Africa), which provides valuable analytical variance across cases and contexts regarding, for example, geography, income-levels, democracy, and types of socio-political systems. Furthermore, this subsample includes different types of events; although the cases involve natural hazard events and one disease outbreak (as opposed to so-called 'man-made' accidents, such as terrorism or infrastructure breakdowns), there is still considerable variability in event type, spanning geophysical (volcanic activity and earthquakes), hydrological (floods), climatological (wildfires), and biological (epidemic) hazards. Given this variance, we can at least rule out the possibility that theoretical assumptions – if supported in the majority of the seven cases – only apply with regard to certain geographical areas, socio-political contexts, or event types. Table 1 summarizes the seven cases, including time-period, policy domain, and geographical area.

Plausibility probe

Our objective here is to compare these seven cases, to empirically explore the validity of theoretical assumptions regarding collaborative governance in crisis management. This is done systematically as we consistently use the same indicators (coding items) derived from the Collaborative Governance Databank across the seven cases to see whether the evidence confirms core assumptions. Hereby, we expand the orbit of inquiry in comparison to previous studies that explore assumptions in single cases. Nonetheless, it is clear that the seven cases reviewed here are too limited as an empirical basis for conducting a thorough 'test' of the validity of the claims examined here. Instead, we aim for a 'plausibility probe' in an effort to make an empirically informed judgment whether more ambitious and rigorous tests are warranted.

As originally envisioned by Harry Eckstein (1975, p. 108), '[…] plausibility probes involve attempts to determine whether potential validity [of hypotheses] may reasonably be considered great enough to warrant the pains and costs of testing, which are almost always considerable, but especially so if broad, painstaking comparative studies are

undertaken'. In this regard, here, the selected assumptions are examined across the seven cases, which, thus, fulfil the role as 'inductive feedback devices' for this particular subset of cases (Kaarbo & Beasley, 1999). Although the sample is obviously too small to focus on frequency distribution, we seek to establish whether each assumption receives empirical support across the whole subsample, or, if it rather seems limited to one or a few cases, or, if it is not supported at all. Again, following the logic of a plausibility probe, assumptions that receive broad support would be worthy of further investigation in a bigger sample of cases, which we hope becomes possible once the Collaborative Governance Databank accumulates additional cases.

Operationalisations

We reviewed each case, focusing on the codes derived from the coding-framework that were deemed relevant for assessing each assumption respectively. This was done systematically by focusing on the same codes across all seven cases. More specifically, we relied on numeric codes as well as qualitative information (open questions) for each case. Table 2 summarizes these codes by assumption.

Crises are dynamic events that can dramatically change over the course of the episode and one of the advantages of the database is it enables researchers to follow and compare the evolution of collaborations over time (to document change and stability in, for example, jurisdictional level, the type and number of involved actors, and the presence and importance of goals). Nonetheless, as the article that introduces the Collaborative Case Databank acknowledges, while this resource provides new opportunities, it also

Table 2. Overview of coded elements.

Assumption	Coding frame-work item(s)	Summary description of coding
Starting-points	Item #16	How the collaboration was first initiated (self-initiated by participants, externally directed by law or authority, Independently convened by a third party)
	Item #23	Type and number of actors involved in the collaboration process (from the start, middle, and end of the period)
Jurisdictional level	Item #7	The level – local, regional (subnational), national, international, supranational (UN, EU, etc.), multi-level) – at which the collaboration occurred (from the start, middle, and end of the period)
Goal-formulation	Item #10	Ambitions driving the collaboration, including any changes between the start, middle, and end of the period
	Item #13	Open question about challenges, ambitions, and evolution of collaboration
	Item #55	Outputs or outcomes (same ambitions as in Item #10) produced by the collaboration
	Item #61	Open question about outputs or outcomes produced
Adaptation	Item #10	See above
	Item #13	See above
	Item #14	Pre-history of mutual engagement among core actors
	Item #15	Trust among participants
	Item #21	Open question about history of collaboration, initiation
	Item #52	Innovations produced by collaboration
Non-governmental actors	Item #23	Types of actors participating in collaboration, including any changes between the start, middle, and end of the period
Political infighting	Item #10	See above (focus exclusively on containment of conflict as ambition)
	Item #34	Role of leadership in effectively resolving or mitigating conflicts between actors within the collaboration

comes with limitations (Douglas et al., 2020). For example, the framework cannot capture all aspects of collaboration and other researchers may want to include different or additional questions and indicators. The ability to accurately capture each dimension of collaboration furthermore depends on the judgement of the coder in applying each coding item to the cases (Douglas et al., 2020).

It should also be noted that the cases examined in this article primarily deal with situational crises and the functional dimensions of managing them. Crises, of course, also have strategic and political dimensions, dealing with institutional and accountability issues that, other than examining political infighting, we do not explore in this article. The databank does cover institutional and accountability issues, however, those dimensions were not the focal points of the cases covered here. Hopefully, those dimensions can be looked at in greater depth once the number of collaborative crisis management cases increases in the future.

Results

Starting-points and triggers: formal planning versus emergent CM collaborations

Do crises, which demand quick decisions under conditions of urgency and time-pressure, provoke responsible organizations to rely more strictly on pre-existing collaborative arrangements with familiar partners or does it spur new collaborations that expand the number of involved actors? Does what we see in our cases square with claims that crises are not conducive for emergent collaborations with new partners or the expansion of existing collaborative arrangements?

As might be expected in crises being handled by actors with formal mandates and responsibilities, in four of the seven cases the initiation of the collaborations were externally directed by law or authority (the floods in Vietnam, the earthquakes in Turkey, the Canadian wildfire, and the Ash cloud crisis). Two were self-initiated by participants (the Swedish wildfire and the German Foodborne disease outbreak) and one was independently convened by a third party (the Ebola case).

We can see that even if the genesis of collaboration was externally directed, acute crises can give rise to emergent collaborative processes and arrangements. A case in point is the 2010 ash cloud crisis, in which the European Commission gave EUROCONTROL, the organization responsible for safe air traffic management in Europe, the responsibility of proposing a solution to the massive disruption to air travel that had paralyzed the European air space in the wake of the eruption of the Icelandic volcano Eyjafjallajökull (Nohrstedt, 2013; Parker, 2015). This collaboration produced a temporary solution that unlocked the crisis, led to a revised volcanic ash contingency plan, new Safety Risk Assessment (SRA) guidelines, and the formalization of the improvised collaborative arrangement through the establishment of a European Aviation Crisis Coordination Cell (EACCC). Once activated, the EACCC is chaired by the Commission and EUROCONTROL and participants include the EU Presidency, air navigation service providers, airspace users, airports, as well as other relevant stakeholders (Parker, 2015).

Self-initiated collaborations, such as the ones observed in the Swedish wildfire and the German foodborne disease cases, also resulted in emergent collaborative arrangements.

As we discuss below, both cases are good examples of adaptation through intra-crisis learning.

Regarding the question of whether crises spur the expansion or contraction of the type and number of actors involved in the collaboration process, in contrast to what might be expected (Kapucu, Arslan & Demiroz, 2010), none of the cases exhibited contraction. In six of the seven cases, we saw expansion, particularly in the type of actors involved (public organizations/civil servants, political organizations/politicians, private for-profit organizations, private non-profit organizations, and citizens). In one case (Vietnam floods), the number and types of actors involved were stable throughout the collaborative process.

Level of collaboration: bottom-up and top-down processes

The coding framework allows us to see at which jurisdictional level the collaboration started and whether and how that changed over time by adding actors from other levels. In our cases, the local level was involved in five of the seven collaborative arrangements. In two cases (the Canadian wildfire and the German foodborne disease outbreak) the collaboration was initiated at the local level and in a third (the Swedish wildfire) the initial collaboration involved the local and regional (subnational) level, but in all three of these cases, the crises escalated so quickly that upscaling occurred. In the Swedish case, the national level got involved along with additional types of actors (Bodin & Nohrstedt, 2016; Bodin et al., 2019; Nohrstedt et al., 2020). In the cases of Vietnam and Turkey, the collaborative arrangements were centrally directed from the national level. Vietnam included the regional and local levels throughout the collaborative process (Rubin, 2014), while in Turkey the local level only became involved after the 2011 Van and Erciş earthquakes struck (Hermansson, 2019).

The German foodborne disease case is interesting because the collaboration started at the local level but quickly expanded and upscaled to include the regional (subnational), national, and EU (supranational) levels. The collaborative response to the large-scale outbreak of enterohemorrhagic Escherichia coli (EHEC) in Germany in 2011 brought together the local states, medical authorities, risk assessment authorities, consumer protection authorities, and the European Food Safety Authority to contain and fight the outbreak (Berthod, Müller-Seitz, & Sydow, 2014).

The 'upscaling dilemma' emerged as a key issue in several of our cases. As discussed earlier, it can be far from clear when higher authorities should get involved, what the scope of their involvement should be, or how they should interact with actors at lower levels of authority (Boin et al., 2017; Boin & Bynander, 2015). The Canadian and Swedish wildfire cases are good examples of this challenge. The Swedish case illustrates the difficulties involved with making a collective decision concerning the appropriate moment to upscale, which was complicated by divergent perceptions among actors at local and regional levels concerning the need to bring in actors at higher levels (Nohrstedt et al., 2020). In the Canadian case, collaboration was initially solely at the local level but, due to the rapidly escalating wildfire, the collaboration quickly upscaled to the provincial level with some federal support. Incident Command System protocols, because of the fire's severity, mandated collaboration between the local and provincial authorities. Initially, the local authorities were reluctant to relinquish control and the upscaling phase from municipal to provincial leadership was not a smooth transition and the desired configuration of involved

actors and at what level was contested. Over time, the municipality became more amenable to a province-led effort and ultimately the collaboration proved successful in achieving its goals of fire containment and preventing loss of life. Furthermore, a study of the involved wildfire responders in both cases found that respondents rated the collaborative effectiveness to be quite high (Bodin et al., 2019).

The codes suggest that the local level was not involved in two of the cases in our subset. The absence of the local level in these instances appears to be due to the nature of the crises and the collaboration processes studied. The 2010 and 2011 ash cloud events were transboundary crises involving multi-level collaboration between national, European, and international aviation authorities and the 2014 Ebola case only looked at the international response of the UN and non-affected national governments to raise funds and encourage countries to send health care workers to respond to the epidemic.

Goal-formulation

To address assumptions about goal-attainment in the seven cases, we first look at whether the formulation of shared goals constituted a key ambition driving the collaboration and, second, whether this ambition was achieved. Here it is important to note that the coding framework only captures whether actors were able to formulate shared goals in the form of accomplishing a plan to tackle a shared problem. Hence, this should not be conflated with whether goal-attainment was actually achieved.

The evidence suggests that the formulation of shared goals constituted an important ambition driving collaboration in all seven cases. In fact, the coded cases show that the development of a plan (our proxy for goal formulation) constituted the core ambition for most collaborative arrangements. However, a closer look at case-study material unveils three different scenarios.

In the first scenario, goal-formulation remained the core ambition of the collaboration throughout all phases in the observed period. In these cases – including Ebola, the Swedish wildfire, and Vietnam floods – actors appear to have worked continuously with developing and adjusting joint plans. In the second scenario, as seen in the Turkish earthquakes and the Canada wildfire, formulation of shared goals did not constitute a core ambition. In these examples, other ambitions – such as increasing the effectiveness and legitimacy of the response – were listed by the coders as being more important drivers of collaboration. In the third scenario, the importance of goal-formulation grew gradually as the events escalated. This pattern was noted in the volcanic ash case and the foodborne disease outbreak in Germany. In both cases, the development of shared goals initially appeared subordinated to other ambitions but gradually became the core ambition of the collaboration. We may only speculate as to what may account for these differences. One potentially important factor includes the level of hierarchy (in more hierarchical systems, such as Vietnam, Turkey, and Canada, it may be the case that goal-formulation is more formalized through, for example, chain of command). The scale of the event and if actors have prior experience to draw from may also be important; in large, unprecedented situations – such as the wildfire in Sweden and Ebola – actors may be faced with novel problems that require continuous efforts to formulate shared goals and plans. Yet, these explanations remain speculations warranting future examination.

Turning to whether the formulation of shared goals was achieved in the end, we find that this was an aspect of collaboration that worked well overall. While we miss data for the Ebola case, codes for the other six cases suggest that actors, in general, succeeded in developing a shared plan. Again, the level of success in achieving shared goals varies over time and is also linked to the level of importance attributed to goal-formulation in each phase. In other words, in those cases where goal-formulation was depicted as a core ambition of the collaboration, this was generally achieved.

Adaptation through intra-crisis learning

In our cases, we cannot observe processes of adaptation directly based on, for instance, empirical evidence of individual or collective learning. However, the coding framework enables us to systematically review the cases in search for indications of adaptation, focusing specifically on reported changes in the structure and process of collaboration in the context of crises.

All seven cases reviewed here exhibit some elements of adaptation. First, all cases give evidence of how the challenges and, in turn, the ambitions of the collaborative arrangements evolved. Some of these cases are examples of processes of quick escalation where the number and nature of the challenges changed relatively rapidly. This was particularly evident during the two wildfire cases and the earthquakes in Turkey. Other events escalated more gradually, as in the case of Ebola, the ash cloud crisis, and the Vietnam floods. The specific managerial problems related to these events also changed over time, which provided stimuli for change in the collaborative crisis responder systems. Again, the two wildfire events are illustrative. In both cases, the rapid escalation brought on a range of problems related to, for example, evacuation, public communication, and inter-organizational coordination, which led to a rapid increase in the number of actors involved in the response. This also resulted in the adjustment of the organizational structures from more localized operations to large-scale inter-organizational arrangements. A similar development was noted in the Ebola case, which started as a more limited operation involving NGOs, which was gradually scaled-up to an international response coordinated by the UN and with assistance from many other countries. Another example of how challenges shift is provided by the foodborne disease outbreak in Germany, which initially was focused on more technical aspects that were handled by an *ad hoc* multi-organizational task force of experts from different authorities. Later on, the focus moved to a political debate regarding the alleged lack of coordination, which swung attention to other actors and expanded the crisis from a functional to a political perspective (Nohrstedt et al., 2018).

We also see some evidence that individuals that were involved in the response to these events adapted relatively quickly to emergent organizational structures. In the cases, there are several examples of temporary arrangements that emerged to meet the need for inter-organizational coordination in response to unforeseen problems. Many cases, including the Swedish wildfire, the foodborne disease outbreak, and the ash cloud crisis, gave rise to different types of emergent inter-organizational collaborative arrangements that were necessary to achieve coordination in the absence of pre-existing structures and routines. Interestingly, these arrangements appear to have worked relatively well. For instance, although some tensions arose in all cases, there is evidence that trust among the actors developed within

a relatively short time-frame. In the case codes, we see no evidence of tensions or conflicts hampering the responses.

These experiences also corroborate the role of multi-organizational collaborative arrangements as forums for innovation and improvisation, which is conceptually linked to adaptation. In the literature, there has been a surge in interest in the role of collaborative governance in fostering innovation in public policy and services. This work acknowledges the role of diverse experience, resources, and knowledge as a basis for generating innovative solutions and practices (Sørensen & Torfing, 2011). During the foodborne disease case, for example, the ad hoc multi-organizational task force was important in developing and implementing a new study method for identifying disease carriers.

Non-state/governmental actors

Concerning the involvement and role of non-governmental actors, our review of the seven cases confirms that a broad range of non-state actors can become actively involved in major crisis events and that they can play key roles in their resolution by working side-by-side with representatives of political and public organizations. The coding-framework identified three broad organizational categories, including for-profit organizations (business), non-profit (for example, interest groups and other associations), and citizen groups.

Representation of these categories of organizations varied across the seven cases with non-profit and citizen groups being most common. For-profit organizations participated in the response to five of the seven cases, including earthquakes in Turkey, the two wildfire cases in Sweden and Canada, the volcanic ash cloud case, and the foodborne disease case. Non-profits appeared in four cases, including the two wildfires, the earthquakes, and Ebola. Finally, citizen groups appeared in all cases but the ash cloud crisis and Ebola.

One pattern that can be noted across the seven cases is that non-state actors appear to join the response at some point after the acute event erupted. Except for the Vietnam floods, where citizen groups were actively involved at the onset, and the earthquakes in Turkey, where for-profit organizations joined the response early on, these groups mostly became actively involved sometime in the middle of the period observed. Non-profit organizations, however, appeared more frequently in the initial phases of three cases, including the earthquakes in Turkey, the wildfire in Sweden, and Ebola.

The participation of these organizations appears to fade somewhat toward the end of these events. Although non-state actors seem to be more engaged at the end of the observed period compared to the beginning, it appears that their participation fades after the acute phase of the event. However, the evidence suggests that participation during the end-phase differs by organization type, with non-profit organizations participating most frequently (in three cases: earthquakes in Turkey, the wildfire in Sweden, and Ebola) and for-profit organizations being less involved (ash cloud case and Canadian wildfire case). Yet, these trends should be looked at with considerable caution since the participation of these organizations in the collaborative response varies overall (with different organizations being involved in the seven cases).

Overall, the cases reviewed here confirm that non-state actors participate quite actively in different settings and across the different phases of collaborative crisis management. The fact that public organizations participated in all phases across all seven cases (except during the initial phase of the Ebola epidemic) underscores the need to continue

investigating conditions for achieving effective cross-sectoral collaboration in crisis management.

Political infighting

Turning to the evidence regarding the prevalence and impact of political infighting, we can infer the level of conflict in the seven cases indirectly by looking at whether containment of conflict constituted a core ambition of the collaboration. In other words, although we cannot directly measure the level of conflict in each case, we can study conflict indirectly by focusing on the weight attached to conflict management within the collaboration.

We find that conflicts were not significant in the seven cases. In two cases (Ebola and earthquakes in Turkey), the codes suggest that conflict seemed to play a limited role in the response. However, in cases where conflicts did occur, the available evidence appears to indicate that these were relatively effectively contained, partially through leadership involvement. Except for two cases (the foodborne disease case and the Vietnam floods case), conflict mitigation was not a core ambition in any of the cases. In fact, in the remaining five cases, the evidence suggests that conflicts played a limited role in the collaborative response or did not occur at all. Also, no clear temporal trends are evident across these cases, which suggest that the level of conflict remained relatively stable over time. One exception was the foodborne disease case, where conflict mitigation was a core ambition in the early stages of the crisis response but became less important as the situation unfolded.

Regarding the role of leadership in effectively resolving conflicts among actors, we only have valid codes from four of the seven cases (the other three reported missing data on this dimension). Therefore, the empirical basis for drawing any conclusions about the role of leadership is quite limited. Looking at the four cases with valid codes (wildfires in Sweden and Canada, Vietnam floods, and the volcanic ash case), the evidence suggests that leadership was only moderately effective in mitigating conflicts between actors. In addition, the level of effectiveness remained relatively stable over time, yet with a small increase towards the later phases. However, we attribute the moderate levels of effectiveness in crisis containment to the fact that conflict resolution did not constitute a core ambition in any of the coded cases. Thus, we conclude (with some caution) that the level of conflict remained relatively low in these cases and that the leadership was relatively successful in containing any tensions when they erupted.

Conclusion

In this article, we compared seven cases of crisis management derived from the Collaborative Governance Databank in an effort to empirically explore the validity of theoretical assumptions about collaborative crisis management. The study hereby contributes to the cumulative effort to advance knowledge about collaborative governance in general and collaborative crisis management in particular.

Our study empirically explores theoretical assumptions concerning triggers, level of collaboration, goal-formulation, adaptation, the role of non-state actors, and political infighting. The seven cases are obviously too limited as a basis for empirically testing and

generalizing theoretical expectations. However, this subsample represents a selection of different hazard event types derived from different parts of the world, which enable us to probe the plausibility of assumptions in different countries and settings. Although we cannot verify causal linkages, we can identify and discuss the associations and patterns we saw across the cases.

The findings confirm that crises represent relatively rapidly moving and dynamic events that raise the need for adaptation, adjustment, and innovation in the context of collaboration. Studies of collaborative governance in cases of 'normalcy' cannot offer insight into how collective-action unfolds given situational constraints and stressors caused by considerable urgency, uncertainty, and imminent threat to the core values of a system. Past collaborative governance research has depicted crises as one incentive among others that create awareness and pressure actors to engage in collaboration (Emerson & Nabatchi, 2015). Building from this study, we can better specify how these incentives play out in practice.

One recurrent observation across the seven cases is that crises do not just create some general pressure for swift and broad collaboration. Rather, demands for collaboration are likely to shift over time, which necessitates adaptation by actors. Such adaptation often takes place in relation to 'upscaling' whereby an increase in the scale of an event outstrips resources at lower levels and creates pressure to shift responsibility and steering to organizations at higher levels (Nohrstedt et al., 2020). The evidence reviewed here, however, confirms that there is rarely consensus around decisions to move responsibility up the government hierarchy because actors have different understandings of local capacities and the right timing for shifting responsibility. Experiences from the cases also shed light on other adaptive behaviours, including the creation of *ad hoc* collaborative arrangements and adjustment of organizational structures and ambitions of collaboration. These insights corroborate the observation that collaborative crisis management brings a unique set of challenges characterized by uncertainty, conflicting priorities, and *ad hoc* behaviours (O'Leary & Bingham, 2009).

We have also noted several behaviours and outcomes that can be depicted in terms of success – or at least as more positive experiences. Here we show that actors in most cases were relatively successful in formulating and pursuing a shared plan. Again, it should be recognized that the importance attributed to goal-formulation varied between the cases and also over time. However, in cases where goal-formulation was defined as an important task, it worked relatively well. Another positive observation is that even in the cases in which pre-existing structures for collaboration were initially lacking, actors managed to establish viable collaborations in an *ad hoc* fashion. These constellations entailed relationships across sectoral and jurisdictional boundaries. Although conflicts did occur, the coded cases indicate that actors developed mutual trust within a relatively short time-span and also addressed conflicts in ways that did not hamper the collective response. The level of conflict remained relatively low in all cases and when conflicts emerged, they were, in most cases, sufficiently contained through leadership involvement.

These experiences can help to advance the understanding of performance, effectiveness and outcomes of collaborative crisis management, which has been elevated as an important next step to advance the research agenda around collaborative crisis management (Nohrstedt et al., 2018). In this regard, the takeaway message from this study is threefold. First, analysts should be attentive to unexpected success-stories (Di Baldassarre

et al., 2018). Generally, one would expect that a disruptive crisis creates an atmosphere where productive collaboration is encumbered. This has been confirmed elsewhere through cases of suboptimal inter-organizational relations emerging as a result of, for example, poor communication and strong tribal identities (Boin & 't Hart, 2010; Parker & Stern, 2002). Crisis conditions can furthermore amplify factors that generally constrain collaboration in normal times, including high transaction-costs, self-interested behaviour, and low trust. Identifying and analysing aspects of collaboration that appear to work relatively well under these challenging conditions is clearly a productive path forward.

Secondly, as highlighted in the introduction to the special issue (Douglas et al., 2020), an important next step is to draw on insights from larger sets of cases to explore causal relationships. Perhaps we may see progress on that front in the future, which might enable large-N analyses of crises as a particular subset of collaborative governance. The literature offers plenty of suggestions regarding what factors may enable high performing collaboration in this specific context, including coordination, inclusion, and low conflict (Boin & 't Hart, 2010). Moreover, although we cannot empirically verify causal relationships, the cross-case comparison was useful for identifying more specific patterns worthy of further investigation once the number of collaborative crisis management cases expands in the future. Specifically, it remains puzzling why actors across the cases, despite being faced with large-scale and partially novel challenges, were mostly able to effectively contain conflict, formulate and achieve shared goals, adapt to rapidly to changing situations and emergent structures, and innovate in response to unforeseen problems. Research efforts to find the collective behaviours, structures, and processes that enabled these actions would partially require alternative sources of data, but hold great potential as a next step to push this research frontier forward.

Finally, the seven cases also suggest that some common collaborative challenges are likely to emerge regardless of the event type. For example, the evidence reviewed here suggests that even if the 'triggering events' are different, the process of collaboration often involves recurrent problems related to, for example, the mobilization of diverse sets of actors and the coordination of joint activities. Comparative approaches can be leveraged to assess how actors deal with these common challenges in different contexts, under varying amounts of pressure, and in relation to different types of events. Studies could investigate how different types of collaborative arrangements (e.g. self-organized versus hierarchically orchestrated) respond to similar challenges. It can also be valuable to examine how similar collaborative arrangements cope with different types of crises. Another potential line of inquiry is to carry out comparative assessments over time to investigate how collaborative arrangements change (Nohrstedt & Bodin, 2014) and the fluctuating levels of overlap between planned or pre-existing networks and emergent crisis responder networks (Bodin et al., 2019; Kapucu, 2005). Including the temporal dimension is also helpful for unveiling processes of learning and how the outputs of learning, such as new or revised plans and strategies, might affect collaborative crisis management regarding recurrent or similar hazards (Nohrstedt & Parker, 2014; Parker, 2015).

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