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Collaborative Crisis Management: Insights from the Literature and Avenues for Future Research

Abstract

Effective interorganizational collaboration is a pivotal ingredient of any community or nation's capacity to prepare for and bounce back from disruptive crisis events. The booming research field of collaborative public management (CPM) has been yielding important insights into such collaboration that as yet await effective transfer to the study and practice of crisis management (CM). Also, we argue that the general CPM literature has not sufficiently addressed the distinctive and unique collaboration challenges involved in coping with crises. This paper seeks to bridge this twofold gap. Based on a systematic review of prior research in collaborative crisis management, this study identifies dominant areas of theoretical emphasis, methodological practices, and patterns of empirical enquiry. The paper highlights areas where CPM research has potential to further inform the understanding of collaborative crisis management, including performance, success factors, managerial skills, and learning. The paper then identifies five properties associated with CM – uncertainty, leadership, magnitude, costs, and urgency – which deserve further analysis to advance the understanding of the application of CPM principles and strategies. We conclude with outlining a research agenda and offering a set of testable propositions aimed at investigating inter-organizational collaboration given functional and political dimensions of crisis management.

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Introduction

Natural hazards, terrorism, pandemics, economic turmoil, large scale accidents and other intractable problems require an assemblage of organizations to collaborate, some continuously and some temporarily, in multiple areas and often across different levels of government (Comfort et al. 2010; Quick and Feldman 2014). Many scholars maintain that crisis management (CM) is an illustrative case of collaborative public management (CPM), which lies close to related concepts, such as collaborative governance (Emerson, Nabatchi and Balogh 2011), and is commonly understood as “the process of facilitating and operating in multiorganizational arrangements to solve problems that cannot be solved or easily solved by single organizations. Collaborative means co-labor, to achieve common goals, often working across boundaries and in multi-sector and multi-actor relationships. Collaboration is based on the value of reciprocity and can include the public” (Agranoff and McGuire 2003a, p. 4). In this article, we take stock of recent developments in CPM and CM research to investigate how a dialogue between these related fields may help advance research on collaborative crisis management. We explore what key insights and lessons from CPM and CM research should inform the understanding of contemporary crisis governance, and what specific properties of crisis preparedness, response and recovery may hinder and foster the practical application of CPM principles and strategies.

Crises, and hence crisis management, have *functional* and *political* dimensions. From a functional perspective, crises denote situations or events that threaten core values, require immediate action, and must be managed under conditions of uncertainty (Rosenthal et al. 1989), which increasingly transcend organizational boundaries and cross sectors and levels of authority (Boin et al. 2013). To confront these ‘situational crises’ there is a need for approaches that are better able to understand information-sharing, the alignment of expectations and actions across organizations, and the willingness and ability of managers, policy makers, and stakeholders to do so (Drabek and McEntire 2002). In contrast, crises and crisis management also have significant implications for organizational reputation, ministerial survival, and the legitimacy of institutional orders. In other words, they have an inherently political dimension. While the functionalist perspective sets the focus on conditions for achieving multiorganizational collaboration under conditions of uncertainty and collective stress, a political perspective shifts attention to ‘institutional crises’ focusing on episodes of accountability, reform, blame-games, turf-wars, and intense public scrutiny. Extreme and destabilizing events may thus trigger a whole new set of challenges associated with managing accountability and avoiding blame (Boin et al. 2010; Brändström and Kuipers 2003).

Disaster sociology research in the 1960s through the 1990s empirically studied coordination, focusing on “the cooperation of independent units for the purpose of eliminating fragmentation, gaps in service delivery, and unnecessary (as opposed to strategic) duplication of services” (Gillespie 1991, p. 57). Many of these studies were concerned with community coordination during acute ‘on the ground’ response operations, hence taking the functionalist view of CM (Drabek 2007). Propelled by catastrophic disasters, such as the 9/11 terrorist attacks and hurricane Katrina in the United States, studies emerged that were influenced by the growing CPM literature. Following these contributions, researchers increasingly promoted cross-fertilization between the emergent CPM field and CM research. One example is the framework of ‘collaborative emergency management’ focusing on interorganizational communication, the role of information technologies, and mechanisms for joint decision-making (Kapucu et al. 2010; Mendonca et al. 2007; Patton 2007). Other scholars (McGuire et al. 2010) discussed ‘the new emergency management’, focusing on cross-sectoral (public-private) interactions in response to emergency and disaster, resulting in a research agenda for identifying the professional competencies of emergency managers, criteria for assessing performance, and conditions for building theory around collaborative crisis management.

Ansell et al. (2010) similarly identified a need for research to address the ‘transboundary dimensions’ of crises and disasters. They introduce four boundary-spanning mechanisms that constitute an effective transboundary crisis response: distributed sense-making (merging conflicting problem definitions), networked coordination (institutional design to support cooperation), surge capacity (overcoming problems of supply logistics), and formal scaling procedures (clarifying decision-making structures and procedures). In addition, other studies (e.g. Pearson and Clair 1998; Roux-Dufort 1998) have documented the evolution of crisis management studies but not specifically situated the field in relation to advances in CPM.

Although these contributions have improved the understanding of crisis management on different fronts, we argue that more work remains to be done to exploit the full potential of combining the CPM and CM literatures as a basis for advancing our knowledge of *collaborative crisis management*. Our conception of crisis management reaches beyond to disruptive and acute events and situations that threaten core societal values under urgency and a high degree of uncertainty (i.e. the functionalist view of ‘situational crises’). Instead, we define it more broadly as pertaining to “a systematic attempt by organizational members with external stakeholders to avert crises or effectively manage those that do occur” (Pearson and Clair 1998, p XX). Following this definition, collaborative crisis management involves regular interactions among diverse sets of actors and stakeholders in relation to preparedness, mitigation, response, recovery, and learning. Furthermore, actions relate to events with different speed of development and different pace of termination (‘t Hart and Boin 2001), which in practice cover a wide range of scenarios as well as the political aftermath of extraordinary and disturbing events.

Our study is motivated by the broad variety of institutional arrangements and processes that have evolved to cope with extreme events on different scales and across cases and political systems. These arrangements vary in terms of structure and performance, which calls for more research to unveil pathways to effective collaborative crisis management. Prior research recognizes that CM is influenced by several evolving circumstances and performance expectations: diverse participation, professionalization of operational functions, attention to performance measurement and efficiency, availability of education and training (McGuire et al. 2010). Studies also provide detailed accounts of the multiorganizational arrangements involved in planning and preparedness, emergency response and recovery, and processes of interorganizational lesson-drawing. These studies share an aspiration to reach beyond the response activities undertaken by official organizations by investigating linkages among public, non-profit, and private organizations operating in more complex multiorganizational networks. Thus, a common starting point is to empirically investigate patterns of participation of various organizations in CM, which in turn covers a wide range of informal and formal activities and contacts across organizational boundaries. For example, Kapucu and associates found that a total of 580 organizations participated in response and recovery activities in relation to hurricanes Katrina and Rita and as many as 1,607 organizations were involved in the response to the 9/11 terrorist attacks (Kapucu et al. 2010). Some previous studies have examined the relationship between crisis preparedness and crisis response networks, shedding light on the disparity between formal planning and actual CM networks (Choi and Brower 2006). Other studies seek to better explain how various background and process conditions influence the formation, mobilization, and performance of interorganizational arrangements in CM. For example, McGuire and Silvia (2010) demonstrate that interorganizational collaboration is shaped by influences from problem severity, managerial capacity, and structural factors. Hicklin et al. (2009) show how collaboration in the wake of disaster can be explained by organizational capacity, the size of shocks, and public management. Considerable attention has also been devoted to advance the understanding of various forms

of public-private partnerships in CM (Kapucu 2006; Simo and Bies 2007). These studies analyze the challenges involved with integrating public CM systems and networks of local community-based organizations.

These studies merely give a snapshot of the rich diversity of empirical research on collaborative crisis management and there are certainly other important contributions not covered by this study. However, thus far there has been little effort to synthesize the existing body of knowledge about collaborative crisis management and the factors that enable and constrain effective cross-boundary work in relation to extreme events. Also, limited attention has been devoted to criteria for performance assessment and measurement. In addition, we find relatively scant empirical interest in the political dimension of crisis management. In response, we undertake a systematic literature review to identify what have been the dominating themes in the literature so far and what issues have attracted less attention. We then build from the literature review to discuss emergent trends and the range of questions that could inform an empirical research agenda into the future.

Literature review

To get an account of published work on collaborative public administration with a bearing on crisis management or particular hazards of public concern, we have searched nine high-ranking public administration journals and one leading crisis management journal: Public Management Review (PMR), Public Administration Review (PAR), American Review of Public Administration (ARPA), Journal of Public Administration Research and Theory (JPART), Policy Studies Journal (PSJ), Journal of Policy Analysis and Management (JPAM), Public Administration (PA), Governance, and International Review of Public Administration (IRPA). In addition, we conducted an identical search in the Journal of Contingencies and Crisis Management (JCCM), a journal specialized on crisis management. The last search was conducted in May 2016.

We excluded anthology chapters or articles published in handbooks/encyclopedias as the search results were too random – we would have missed an unknown number of relevant texts. Articles in relevant journals gave us a better sense of topical articles in relation to the total number published by the respective periodical. The earliest article is from 1990 and the search includes April of 2016. The final selection of articles for coding is associated with potential limitations of the search criteria. Early articles were vetted on the extent to which it actually incorporates what we mean by “collaborative public management”, which led to the omission of many early texts that may have included networks or cross-sectoral coordination, but failed to bring in basic tenets of collaborative public management theory. The search distinguished articles on crisis relevant CPM by first using the search word “collaborative” and then manually determining the relevance of each article by scanning the title and abstract. When in doubt regarding the inclusion of an article in the review, we scanned the full article for the relevant content. In all, 74 articles were included in the final sample. Figure 1 shows the frequency distribution of our selection of articles in the 26-year period and the total number of articles per journal.

INSERT FIG 1 HERE [Fig 1. *Frequency distribution of articles 1990-2016*]

In order to assess the state of knowledge and remaining gaps in the literature, we coded the articles on eight variables. These variables seek to capture dominating trends in the literature concerning main empirical scope, substantive focus, and methodological approaches. Table 1 summarizes the coding framework with descriptions of each item coded.

Table 1: *Article Coding Framework*

Coding categories and items	Explanation	Codes
<i>Empirical scope</i>		
1. Geographical area	Regions covered	North America; Europe; Asia; multiple; n/a
2. Level of analysis	Administrative level	Local; state/regional; national; international; multiple; n/a
3. Hazard type	Type of event	Geological; hydrometeorological; man-made; n/a
<i>Substantive focus</i>		
4. Aspect of collaboration	Dimensions covered	Antecedents; process; outcomes; other; n/a
5. Crisis management phase	Aspect of crisis management 'cycle'	Pre; response; post; multiple; n/a
6. Collaboration incentive	Objective of collaboration	Policy-driven; hazard-driven; n/a
<i>Methodological approaches</i>		
7. Research design	Type of study	Single case-study; comparative case-study; conceptual analysis; n/a
8. Data collection	Method of data acquisition	Content analysis; survey; ethnographic; interviews; multi/mixed methods; literature review; other; n/a

For each variable, we focused on coding the main emphasis in the articles. Although multiple codes are indeed possible in theory, we focused on the main research question to determine what was the main emphasis in each article. Results are presented in figures 2.1-2.8 below.

INSERT FIG 2 HERE [Figures 2.1-2.8. Frequency distribution of article themes]

Generally we get medium to high variation on most codes with a few exceptions. First, fig 1.1 shows that the number of articles published per year has increased over time with a clear spike in 2013 (n=14), which is evidence of a growing interest among public administration scholars in matters related to collaborative crisis management. On average, we found five articles published per year. Second, there is an unmistakable geographical bias toward the US and European countries (fig 2.1). Studies involving cases from Asia constitute a minor category while cases from other parts of the world are completely absent from the sample. This trend is noteworthy, given the frequent exposure to major natural hazards of many countries in e.g. South America and Africa, which, however, might be covered by a different set of journals. Third, most articles focuses on phenomena at the local level, or consider interactions across levels, while studies of regional, state, and nation levels are less common (fig 2.2). We speculate that the focus on the local level stems from the fact that most events impact local communities, which justifies examination of local-level preparedness and response activities and capacities. Fourth, one surprising observation is that half of the studies are not concerned with any specific type of hazard event (fig 2.3). While we found studies of geological, hydrometeorological, and man-made hazards, 38 of the articles (51%) did not address any specific events. Most of these articles address topics beyond hazard response, e.g. community resilience, service delivery, communication, and networking in general. Fifth, there is a predominance of qualitative studies with a further tilt towards single case studies (fig 2.7). The image of the emerging field is one of inductive ambitions, often trying to create meaningful analytical categories and concepts to help grasping collaboration under difficult circumstances. This observation is supported by the relatively strong focus in one fifth of the articles on conceptual analysis. Studies in this group primarily borrow concepts and assumptions from public administration theory, but many incorporate theoretical insights and concepts from, for example, command and control, emergency response, theories of democracy, entrepreneurship, and a host of other fields, generating a multitude of approaches to collaboration in crisis. In summary, the literature review confirms that existing research on

collaborative crisis management is methodologically diverse and interdisciplinary in the sense that it applies theory and concepts from a relatively diverse set of social science disciplines. Meanwhile, the literature is also somewhat narrow in empirical scope with a predisposition toward the US and Europe.

CPM and collaborative crisis management

Despite the growth of applications of the CPM perspective in cases of CM, several of its central assumptions and propositions have not yet received sufficient empirical attention. Below, we identify seven areas where insights and lessons from CPM research could be useful to further advance the understanding of collaborative crisis management. These seven areas are derived from our understanding of what constitute major themes and areas of emphases in the broader CPM literature. Thus, we do not offer an exhaustive list of major themes in CPM but rather a summary of topics that we believe are central to the future development of this field that can also highlight important aspects of collaborative crisis management. Concretely, we focus on themes that enhance our understanding of outcomes as well as drivers of collaboration at different levels. Together, these themes can be helpful to explain why collaborative crisis management works well in some cases and not in others.

Assessing collaborative performance

How to differentiate success and failure in CM operations remains challenging. Our literature review (fig 2.4) shows that studies focusing on outcomes of crises remain relatively sparse (14%) while studies addressing collaborative processes are more common (61%). There is much at stake, and the range of possible benchmarks, perceptions, and interpretations of ambiguous and conflicting outcomes is wide (McConnell 2011a). Despite efforts to develop generic criteria and approaches to document CM effectiveness (e.g. Harrald 2006; Quarantelli 1997), more work should be devoted to refining approaches and analytic methods for assessing collaborative performance in the context of CM (McConnell, 2011b). The starting-point is the insight that conventional performance measures employed to evaluate hierarchical organizations are inadequate as a baseline to assess performance in the context of complex governance and interorganizational collaboration, which promotes individual organizational goals as well as shared collective goals (cf. Moynihan et al. 2011).

Performance measurement is one area where the general CPM literature can offer potentially useful guidance for crisis research. CPM scholars evaluating network effectiveness generally rely on multi-dimensional approaches and matrices capturing the relational operating style of networks, output and outcomes at different levels (organization, network, and community) as well as differences between networks in terms of purpose, structure, and underpinning relationships (Emerson and Nabatchi 2015b; Koppenjan 2008; Mandel and Keast 2008; Mitchell, O’Leary and Gerard 2015; Provan and Milward 2001; Turrini et al. 2010; Ulibarri 2015). Evaluation criteria are also adjusted to the level of ‘maturity’ of networks as a basis for studying effectiveness at different stages of network development (Provan and Kenis 2009). These studies provide a rich set of analytic tools and approaches to assess collaborative performance. For example, they provide guidance and example applications to assess perceived success among network members (Lubell et al. 2017; Varda and Retrum 2015) as well as more specific results and effects (Plummer et al. 2017). Meanwhile, crisis studies offer some middle-range approaches to define crisis management effectiveness. For instance, Tindall and ‘t Hart (2011) develop an evaluation framework for assessing response performance in relation to key crisis response functions, including leadership challenges at strategic and operational levels as well as coordination through preexisting networks and emergent opportunities for joint action. Taken together, these different approaches can assist

scholars with an interest in advancing knowledge of collaborative crisis management performance.

Success factors

The number of assumptions, propositions, and hypotheses offered by the CPM literature regarding explanations for successful collaboration is vast (O’Leary and Vij 2012) but only a few of these have been explored in empirical analyses of collaboration in CM. One path to theory development would be to begin by thoroughly examining existing theoretical CPM models, before developing some grand theory of collaborative crisis management (Drabek 2007; McGuire et al. 2010). For example, ‘antecedent-process-outcome’ frameworks (e.g. Ansell and Gash 2008; Bingham and O’Leary 2008; Thomson and Perry 2006) have potential to generate new insights into the realm of collaboration in crisis management (Simo and Bies 2007). Some work in this direction is already underway, as indicated by the relatively large number of studies (34%) documenting collaboration across crisis preparedness, response, and recovery phases (fig 2.5). While these models hold some promise, we also encourage future examination of perspectives that target specific dimensions of collaborative crisis management, focusing for instance on the relationship between structural properties and collaborative crisis response effectiveness (Wise and McGuire 2009) and the role of management strategies in shaping network outcomes (Klijn et al. 2010; Ysa et al. 2014). At the same time, assessment of conditions for effective collaboration will lead researchers into murky methodological waters where performance measurement must be taken seriously (our point above). Researchers should also be aware of the fact that there are multiple ways to organize for effective collaboration in response to crisis (cf. O’Leary and Bingham 2009).

Collaborative skills for emergency managers and leaders

Collaborative arrangements are generally described as interorganizational structures and processes, which in practice are populated and orchestrated by individual managers, operators, and leaders (Huxham and Vangen 2005; Williams 2012). One important step to better understand collaborative arrangements and networks is therefore to examine the ‘skill set’ or ‘collaborative capacity’ of individuals that operate networks for crisis planning, response, and recovery (McGuire 2006). What particular skills may support effective collaborative crisis management? Studies suggest that several managerial skills are conducive to successful collaboration more generally, for example personality traits (an open mind, patience, risk-orientation, flexibility and unselfishness), interpersonal skills (being a good communicator and listener), group process skills (facilitation, negotiation, skills in group dynamics, organizational culture, dealing with personalities, conflict resolution), strategic leadership, and substantive/technical knowledge (Goldsmith and Kettl 2009; O’Leary et al. 2012; Williams 2012).

The unique task environment of crisis management – characterized by uncertainty, fluid participation, and urgency for action – brings additional demands and expectations. Crisis managers do not only need to deal with the challenges typically associated with collective action – they must also be able to cope under conditions of sudden disruption and collective stress, which require additional skills (e.g. endurance, persistence, and ability to improvise). A few studies (Kapucu 2006; Kapucu and Ustun 2017; Page et al. 2006; Patton 2007; Waugh and Streib 2006) have investigated some of these attributes but this is an area where research can do more. Relevant topics to consider in future studies include professionalization and how social and technical skills can be ‘learned’ through high-quality training, education, and crisis experience (Bingham and O’Leary 2008; McGuire et al. 2010). Studies investigating managers’ collaborative and improvisational skills could also yield interesting insights

(Mendonça et al. 2007). Although researchers have a good understanding of what leadership tasks and qualities promote effective CM (Boin et al. 2012), less work has been devoted to studying how leadership qualities and actions can promote effective interorganizational collaboration during major crises. Collaborative (‘connective’ or ‘integrative’) leadership (Crosby and Bryson 2010; Morse 2010; Sullivan et al. 2012) is one area where the CPM field can provide some useful guidance to crisis research, focusing, for example, on distinct collaborative leadership styles (‘sponsors and champions’) and behaviors (‘ideology and pragmatism’) that appear important to explain successes and failures of collaborative systems (Connelly et al. 2008; Vangen and Huxham 2003). Some of these ideas have been explored in studies of CM (Devitt and Borodzicz 2008; Waugh and Streib 2006), but overall there is a shortage of empirical work investigating the relationship among leadership, collaboration, and CM performance (Wise and McGuire 2009).

Transaction costs and diminishing returns

Judging from the historical record, there are good reasons to question the effectiveness of networked responses to extreme events. Research and post hoc evaluations report time and again that interorganizational networks repeatedly break down or fail to meet public expectations of a coherent and well-organized crisis response system (McGuire et al. 2010). In turn, oftentimes disruptive crises are followed by calls for reforms to fix ‘dysfunctional’ institutional structures and processes for collaboration. Cases of alleged ‘failure’ in collaboration turn attention to the costs associated with increasingly complex arrangements for collaborative crisis management. This insight reflects a more skeptical (or perhaps realistic) view of CPM emphasizing that network management is more difficult and costly than is commonly portrayed, which calls for more research into the obstacles that managers confront when attempting to change and improve institutional arrangements to facilitate collaboration (Agranoff 2012; Ansell and Gash 2008; Emerson et al. 2011; Head 2008; McGuire and Agranoff 2011). CM is obviously a unique case in this regard where it is difficult to determine if collaboration problems are due to the magnitude of the challenges or inherent flaws in the structures and processes of network governance (AUTHOR 2011). This is an area where theorizing about networking can be exploited to reveal more about how various managerial tradeoffs may affect collaborative crisis management performance (Meier and O’Toole 2003).

Overlapping networks

In practice, crisis response operations frequently involve not one, but several overlapping interorganizational networks (Drabek 1985; Kapucu and Hu 2014; Kiefer and Montjoy 2006). This is a common observation in the CPM literature as well (McGuire 2006). CM networks overlap along temporal (preparedness-response, response-recovery, recovery-learning) and spatial dimensions (local, regional, national, transboundary) and functional-task areas (warning, mobilisation, evacuation, search and rescue, information dissemination, etc.) and managers need to cope simultaneously with increasingly crowded vertical and horizontal interactions. In addition, there is the relationship between the functional and the political spheres of crises, which are intrinsically linked through learning and accountability. Studying these interconnections is costly and analytically challenging. However, some important steps have been taken in this direction as suggested by studies focusing on collaboration across crisis management phases (34%, fig 2.5) and organizational levels (36%, fig 2.6). The complexity inherent in multiple overlapping networks raises important questions about collaborative crisis management performance (Alter and Hage 1993). For example, how are the ‘right’ networks members found (Johnson et al. 2011; Nowell and Steelman 2014)? What interactions and collaboration partners should be prioritized given scarce resources? What

considerations guide partner selection in emergent crisis responder networks under conditions of urgency and collective stress (Bodin and Nohrstedt 2016)? How does the co-existence of multiple overlapping networks enable and constrain crisis decision-making? Nested networks—their nature, development and change—is an area of the CPM literature which “cries out for more detailed research” (Agranoff and McGuire 2003b, p. 1405). Recent advances in the ecology of games framework (Lubell 2013) and polycentric approaches to governance (Ostrom 2010; Tierney 2012; Carlisle and Gruby 2017) offer some starting-points to clarify some of these issues. For instance, CM researchers can expand the empirical focus beyond single networks or venues to consider coordination within more complex institutional systems of multiple networks that engage in linked collective-action problems and overlapping policy issues. Such analyses would give insight into how policy actors engage in learning about solutions that provide beneficial outcomes and how they can achieve cooperation to implement joint solutions (Lubell 2013).

Managing semi-hierarchies through more effective meta-governance

Due to the difficulties of establishing and operating well-functioning interorganizational networks, arrangements for collaborative crisis management are often semi-hierarchical structures. These networks are a mix of centralized command and interdependent relationships among multiple autonomous organizations and are common in other sectors as well (Head 2008; McGuire 2006). Such ‘hybrid-like’ structures bring attention to the broader issue of network (meta-) governance and how governmental actors and leaders can mandate, steer, support, and lead collaboration networks to promote better as well as more democratic solutions (Provan and Kenis 2008; Sørensen and Torfing 2009). For example, studies of Incident Command Systems spotlighted some of the difficulties of network governance in CM (Moynihan 2009; Waugh 2009). One lesson from these studies is that semi-hierarchical structures work well in non-catastrophic crises but are less successful in response to more complex crises. In this perspective, network governance introduces a dilemma in the CM context where centralization may be necessary to facilitate collaboration but also potentially harmful as it may feed reliance on direction from central organizations (Waugh 2009). To find ways to cope with these tensions more research is needed to assess alternative models of network management and the behaviours of network participants under different modes of governance. One particularly interesting avenue for future research is how managers cope with pressures to “do more networking” and how such pressures may reinforce efforts to collaborate while maintaining the capacity to cope with unclear means and ends (Rodríguez et al. 2007).

Collaborative learning

Substantial scholarly attention has been devoted to crises as triggers or ‘windows of opportunity’ for learning and policy reform (Birkland 2006; Stern 1997; AUTHOR 2005; 2009; 2012). While many studies assess the impact that crises have on organizational reform and policy change, less work has been done to examine collaboration network change and learning in the wake of crisis (notable exceptions include e.g. Goldstein 2012; Moynihan 2008). This is confirmed by our literature review, which shows that only a smaller number of studies (14%) are concerned with collaboration in the aftermath of crises (fig 2.5). The shortage of empirical research in this area is surprising given the importance attributed to network adaptation as an important element of effective CM systems (Weick and Sutcliffe 2001). Yet, different theoretical perspectives on learning in the context of collaborative management have emerged and can offer guidance for research (e.g. Daniels and Walker 2001; Knight 2002; Gerlak and Heikkila 2013). However, the issue of learning is not only confined to assessing how actors collectively draw lessons from disruptive events. Given that

major crises and disasters are low-frequency events, network actors need to retain capacities to engage in continuous learning and adjustment to stay prepared for unexpected events. Such ‘dynamic social learning’ seeks to ensure that crisis preparedness routines and practices are up to date (cf. Emerson and Nabatchi 2015a). Thus, collaboration networks play a dual role to support learning; they may serve as conduits for organizational learning (by collaborating with representatives of other organizations, managers bring back information and experience to their own organization) and may also support collective learning among its participants (managers collectively learn joint lessons at the ‘network level’ exceeding the individual or the organization). Engagement in network learning is particularly important to transform the ways managers work together, which is an important aspect of developing joint CM capacities. But network learning is also hard since it usually requires a deeper understanding of relationships and commitment among participants (Mandell, Keast and Brown 2009). How network actors cope with these challenges and how network learning influence collaborative crisis management capacity are areas for further research. To advance knowledge on these issues, scholars could investigate both the process of learning, including how actors acquire, assess, and disseminate new knowledge, and the outcomes of learning, including the range of new shared ideas, policies, rules, and strategies that emerge from the process (cf. Gerlak and Heikkila 2011).

Crisis and the application of CPM principles and strategies

McGuire et al. (2010, p. 125) depict emergency management as the “ideal test case”, which “has all the ingredients, complexities, and challenges of networked and collaborative public management”. Many useful lessons have emerged from this research, which have already begun to inform the CPM literature (e.g. O’Leary and Bingham 2009; McGuire 2006; Waugh and Streib 2006). Meanwhile, some of this research has also been narrow in scope and omitted some important aspects of CM. Below, drawing on some key lessons from this research, we discuss what specific properties of crisis preparedness, response and recovery may be taken into account to further advance the understanding of the application of CPM principles and strategies.

Following the distinction between functional and political dimensions, crises present different challenges to the strategic and operational levels of a response system (Boin and ‘t Hart 2010). The *technical-operational (functional) level* involves first responders, incident commanders, operations managers and other CM ‘professionals’ engaging in activities related to mitigation, planning and preparedness, early warning, decision-making, coordination, recovery programs, and lesson-drawing. Core challenges related to collaborative crisis management at this level include formulating and continuously updating an ‘operational picture’ of the nature and extent of the threat, efficiently soliciting and deploying operational resources, transmitting accurate and actionable information, mobilizing and sustaining multiorganizational ‘front-line’ response networks including collaboration with business and society. At the *strategic-political level*, political office-holders, agency leaders, and other senior public executives must manage the ‘secondary impacts’ of crises. These actors are formally charged with providing direction, making strategic decisions, and are looked upon to provide guidance and support to the general public and response network participants. Each level brings specific challenges to collaborative management.

Below, we identify five areas that deserve close attention by scholars and policymakers. Specifically, these are areas that pose some unique challenges associated with crisis management. Closer attention to these challenges can bring new insights and help push the envelope in CPM research.

Goal-attainment and uncertainty

Most conceptions of collaboration refer to the broad-based, active engagement of multiple organizations attempting to work together in defining and achieving some common goal (Ansell and Gash 2008). In return, ‘goal-attainment’ is a common benchmark to assess whether collaboration is effective or not. Although overarching goals (reducing risk, providing security and safety, saving lives, reducing property damage, restoring infrastructure and public service etc.) are generally uncontroversial, specifying joint operational goals for crisis preparedness, response, and recovery can be more complicated and value-laden. What risks and threats should be prioritized given scarce resources? Whose security should be safeguarded and at what cost? What is the appropriate scale and jurisdiction for addressing risks and threats effectively? These are fundamentally normative questions that permeate policy agendas at the strategic-political level and also pose challenges to managers at the operational level that must make difficult choices on the ground. Risk and threats associated with incompatible beliefs, perceptions, and interests may feed political advocacy, organizational turf battles, bureau-political rivalry and conflict rather than consensus and productive interorganizational collaboration (Agranoff and McGuire 2011; Boin and ‘t Hart 2012; Rosenthal et al. 1991; AUTHOR 2013). Nevertheless, many CPM scholars maintain that effective collaboration is ultimately about bringing together organizations with both similar and divergent goals (Ansell and Gash, 2008; Williams 2012). In this view, maintaining diversity in resources and expertise is essential to reap collaborative benefits. This introduces a “goals paradox” where too much homogeneity feeds reluctance to collaborate and too much heterogeneity increases transaction costs and the risk for conflict (Connelly et al. 2008). In a functional perspective, effective collaborative crisis management is therefore about finding mechanisms that acknowledge these inherent tensions “rather than seeking resolutions free of any compromises or trade-offs” (Vangen and Huxham 2012, p. 758). In addition, one of the potential areas where CPM could benefit from CM studies is for helping to improve our understanding of collaboration outcomes and the factors that matter for success and failure. As our review showed, process was the aspect of collaboration that has received the most attention and generating better knowledge of outcomes is a goal shared by many scholars. Crises produce outcomes, some positive and some negative, which can be mined for insights (Boin et al. 2008). Moreover, when a crisis occurs, it forces the collaborating actors to respond and provides an acid test for evaluating the collaboration processes and the performance of the participants.

Leadership

Crises build momentum for public leadership – good and bad. In some cases (for instance, New York Mayor Giuliani in response to 9/11), leaders succeed in shouldering the burden of providing direction, boosting public morale, and aligning the actions of different organizations and levels of government. In other cases (for instance, Japanese prime minister Naoto Kan during the Fukushima disaster), leaders inadvertently hinder or even paralyze the response system. Control-oriented, top-down leaders risk complicating collaboration by sending mixed signals and by undermining the legitimacy of networked response systems. From the political leader’s perspective, however, the time it takes to get the multiorganizational machinery up and running may be problematic or unacceptable in the face of intense public pressure to ‘do something’. Past collaboration failures may further increase the temptation for leaders to intervene early. Blame-avoidance behavior may also muddy the collaborative waters (Hood 2010). For these reasons, CM is sensitive to tensions between executive politics and collaborative governance. Much is at stake politically; if the (collaborative) crisis response is inadequate or does not live up to public expectations there is a risk of major consequences for political leaders and institutions. Leaders and organizations,

not collaborative networks, will be held accountable in the wake of crisis (Kuipers and 't Hart 2014). At times, these political incentives may end up on a collision course with the cornerstones of effective collaboration in crisis: voluntarism, autonomy, adaptation, improvisation, and learning (Waugh 2009). Thus, we may ask to what extent do these political motives interfere with collaborative crisis management? How do leaders navigate between the tasks of leading and supporting? How are these tradeoffs dealt with in relation to other public problems where there is less urgency and uncertainty? These questions could inform future research on collaborative crisis management as well as the broader field of CPM.

Costs of collaboration

Interorganizational collaboration seeks to promote effectiveness and efficiency but networking with other organizations also brings significant costs (time, money, energy), which may impede organizational performance (Meier and O'Toole 2003; AUTHOR 2017). Some external networking activities are mandated or a natural part of an organization's responsibilities but managers must also decide how much to invest in external collaboration. If the payoffs are unclear, as is often the case in CM, managers may not be prepared to commit to time-consuming collaborative processes. Power imbalances are another commonly noted problem for collaborative management: resources are often unevenly distributed among network participants, which may generate distrust and weak commitment (Ansell and Gash 2008). These constraints conflict with the importance the CM literature attributes to pre-existing networks (Boin and 't Hart 2010). Pre-existing networks provide 'slack' – reservoirs of organizational resources to support flexible solutions to unanticipated problems. At the same time, establishing and maintaining such preparatory networking for effective CM is constrained by a unique set of challenges. Above all, it may be difficult to motivate stakeholders to engage in collaborative activities with the purpose to build 'generic' capacities for unknown future events that have a low perceived probability of materializing. High-reliability organizations, which put a strong emphasis on risk and security, are likely to be actively engaged over time and so the main challenge is to provide incentives for actors that do not have CM as a natural part of their organizational repertoire.

Responding to crises across scales

How the magnitude of an acute crisis affects the emergence and performance of a response network is another topic that warrants more research. Most observers agree that "normal" networks can adequately deal with narrow-impact, low-fidelity emergencies. These events are fairly predictable and mobilize actors with capacities and resources needed to buffer impacts from a range of predefined events. But at what order of magnitude does the game change and call for a wider and more organized response? And how do these "normal" networks perform in cases of unscheduled extreme events? Pre-existing collaborative arrangements might be turned upside-down and met with unforeseen and demanding challenges under severe time constraints of a major crisis. Many systems fail to perform well under such conditions, which explains why many after-action reports of CM identify collaboration and coordination as the missing links of an effective crisis response system. Networks formed to plan and prepare for CM can generally be expected to increase the odds for better response as they contribute with knowledge about potential partners, inter-personal trust, and incentives to motivate collaboration. This, however, presumes that actors have learned how to effectively exploit the capacity offered by collaboration and that networking is not only reduced to symbolic interaction (Lubell 2004). Overall, such collaborations might create confidence in the network participants and a sense of heightened collective capacity (Head 2008). However, some rare events will likely be too complex for these networks to handle. In the most extreme cases, the joint capacities of the network will be overwhelmed and additional stakeholders will become

involved, pushing managers into temporary and *ad hoc* arrangements, which require skills to adapt and improvise. For these reasons, CM gives rise to several managerial tensions: between an all hazards approach to planning and preparedness for specific contingencies, and between actions to promote trust among a stable set of participants and the necessity to motivate additional stakeholders to engage in collaboration. Studying the various collaborative arrangements across the different phases of CM is thus crucial to advance knowledge about the limits of collaborative management under pressure. In this regard, examination of crisis management collaboration can add new insights to the discussion in the CPM literature about ‘environmental turbulence’ and how it affects collaboration (Bryson *et al.* 2006; Isett and Provan 2006).

Network formation and time

The context of situational crisis – particularly dynamic and rapidly evolving events that impose urgency to take collective action – offers a useful setting for advancing knowledge about drivers of collaborative network formation. The CPM literature establishes that viable collaboration takes time to generate results. Participants need to interact regularly to jointly define problems, work out solutions, and make collective decisions. In addition, developing mutual trust, solving conflicts, engaging in joint learning and adaptation, and delivering results are tasks that test the patience and endurance of all participants and may delay action. However, crisis managers do not have the luxury of time but have to make decisions quickly, often with limited information and a fragmented understanding of the situation which also tends to differ between network participants. In addition, actions often have to be coordinated in emergent networks and arrangements in which individuals come together for the first time. Crises thus present a very different operating environment from ordinary policy problems and policy-making processes where actors can afford to develop relationships over time. In this perspective, emergent *ad hoc* collaborative arrangements that form in response to acute crises can generate important lessons and insights about ways to speed up processes of network formation and collective action. Illustrative cases include information transfer and coordination within responder networks in, for instance, wildfires (Bodin and Nohrstedt 2016; Nowell and Steelman 2014) and pest and disease incursions (McAllister *et al.* 2017) where swift collective-action is needed to mitigate urgent problems. Research efforts ought to be directed at the range of cases from alledged ‘success-stories’ where multiorganizational networks form relatively quickly and without any major glitches, to cases of alledged collaborative ‘failures’ marked by bureaucratic infighting, rivalry, and competition between organizations (Boin, ‘t Hart and McConnell 2009; Rosenthal, ‘t Hart and Kouzmin 1991). How can these different collaborative processes be explained? How, more specifically, does event criticality and urgency help overcoming barriers to collective-action (Morgensen and DeRue 2006)? Answering these questions could help advancing new insights concerning the drivers of network formation in different collaborative settings.

Conclusion

This article review demonstrates how the two fields of collaborative public management (CPM) and crisis management (CM) research can be cross-fertilized to advance our understanding of collaborative crisis management. Both fields face enduring theoretical, conceptual, and methodological challenges, yet we argue that closer dialogue between these two fields provides an excellent opportunity for making progress on these fronts. The findings reported in this review have provided a diverse picture of previous research in this area albeit one with some omissions in some areas of interest. We will draw upon these results to suggest ways to advance research in the future.

Our study shows that existing research on collaborative crisis management is already quite rich and diverse. Although we have limited our sample to a selection of 74 articles collected from ten public administration journals, we found significant diversity in methodological approaches and theoretical venues. Our review confirms the general expectation that establishing and maintaining collaborative arrangements is a core activity in crisis management. The studies reviewed here show that collaboration is important in cases involving different types of hazards, at different levels of authority, in a variety of geographical areas, and throughout the different cycles of crisis management. At the same time, we have identified areas that have been less explored, including for instance studies of cases outside the US and Europe and questions related to international aspects of collaborative crisis management. Furthermore, we found relatively few empirical works that target post-crisis processes, including the role and impacts of collaborative approaches in relation to accountability, learning, and reform.

Our study has identified a number of topics and themes derived from the broader collaborative public management literature that could potentially generate new insights concerning collaboration in crisis management. Conversely, we also build upon some of the unique properties of crisis management, which pose challenges to collaborative public management more generally. Based on these perspectives, we have identified several avenues for future research that together can advance new insights about collaborative crisis management:

- Develop, refine, and apply evaluation frameworks for assessing crisis response performance
- Identify particular individual skills contributing to effective collaborative crisis management, including different personality traits and group processing skills as well as endurance, persistence, and ability to improvise
- Enhance knowledge of the obstacles that managers confront when attempting to change and improve institutional arrangements to facilitate collaboration in crisis management
- Expand the empirical focus beyond single networks or venues to consider coordination across multiple networks that engage in linked collective-action problems and overlapping policy issues
- Advance insights concerning how governmental actors and leaders can mandate, steer, support, and lead collaboration networks under conditions of threat and urgency
- Examine how actors in collaboration network can engage in constructive change and learning in the wake of crisis
- Enhance the understanding of how actors overcome real or perceived costs of engaging in collaboration towards building generic capacity in preparation of uncertain future events
- Study how much collective stress and turbulence collaboration networks can handle before there is a need for greater steering, control and centralization
- Examine emergent *ad hoc* collaborative arrangements to draw lessons and insights about ways to speed up processes of network formation and collective action

We note that much of the literature is located in the vein of the functional dimension of crisis management and offers important insights regarding ways to enhance mobilization, maintenance, and performance of multi-stakeholder collaboration under difficult circumstances. Meanwhile, it is equally important to advance knowledge of the political dimension of crisis management, particularly how collaboration unfolds when crisis management actors as well as responsible office-holders, capacities, and decisions are subject to public scrutiny and critique. How instances of ‘institutional crises’ (Alink, Boin and ‘t Hart 2001) occur and evolve is a long-standing focus in some crisis management literature (‘t Hart 1993; Rosenthal, ‘t Hart and Kouzmin 1991). Questions about the accountability of

collaborative arrangements have gained some attention in the collaboration literature but studies tend to focus on *ex ante* accountability, such as the importance of maintaining accountability systems and close relationships with key constituencies for achieving effective collaboration (Bryson, Crosby and Stone 2006; Page 2004). In contrast, studies of institutional crises can shed new light on how accountability unfolds *ex post*, in the wake of disruptive crises, and what this does to collaboration.

In an effort to pave the way for a more inclusive future research agenda that also incorporates the political dimensions, another way forward is to consider the likelihood for achieving effective collaborative crisis management in relation to situational and institutional crises respectively. In this perspective, we imagine that the ability to collaborate effectively varies considerably across the functional and political dimensions of crisis management. This logic can be illustrated by four different scenarios (Figure 3), each which presents a unique set of conditions for inter-organizational collaboration:

INSERT FIGURE 3 HERE [**Figure 3.** *Likelihood of effective collaborative crisis management as a function of crisis type and dimensions of crisis management*]

- **Type A:** Effective collaborative crisis management is highly likely to occur. As emergencies or disasters create a self-evident superordinate goal ('saving lives' etc.) their sheer scale impact clearly transcends the coping capacity of any single organization or jurisdictional authority (e.g. Barton, 1969; Dynes, 1974). In turn, collaboration unfolds as a response to acute interdependence and lack of extant, partly or wholly disrupted traditional authorities to provide effective protection, direction and order. Collaboration does need to overcome siloed institutional routines, cultural faultlines (e.g. 'professionals' versus 'amateurs', or 'local' versus 'national') if it is to become effective (see Boin and 't Hart 2012).
- **Type B:** Effective collaborative crisis management is moderately likely to occur. Functional incentives for and institutional pressure on actors in an embattled policy sector (for example the institutional field of Dutch social housing corporations) to pull together and coordinate both their presentational and substantive crisis response strategies so as to increase or reassert the sector's reputation for effective and legitimate governance coexist with perceived short term reputational costs of continued association with the sectoral status quo, and incentives to posture as 'agent of difference' or 'advocate for change' within the sector.
- **Type C:** Effective collaborative crisis management is moderately likely during the acute response phase because of an overwhelming need to reduce threat and mitigate damage, but depending on the state of pre-existing interorganisational and inter-jurisdictional relations acute emergency responses can also display palpable lack of willingness to share information, coordinate operations up to outright confrontational 'turf' behaviour ('battle of the samaritans', see Rosenthal et al, 1991). Viable collaboration is much less likely to occur in the recovery phase and in the accountability process, where functional imperatives for coordination diminish and the political incentives for blame avoidance and self-interested behaviour increase.
- **Type D:** Effective collaborative crisis management is extremely infeasible. Institutional crises are 'framing contests'; where not just reputation but institutional survival is at stake. Institutional fields will be split wide open into status-quo oriented, blame-avoiding, defensive-reactive players and change-oriented, blame-assigning, offensive-proactive players, defending their respective positions in public 'blame games' and with the latter seeking to engage in crisis exploitation (Boin, 't Hart and McConnell 2009).

1.

Besides considering the distinction between functional and political dimensions, advancing the research frontier on collaborative crisis management also requires alternative research designs. We have shown that existing research on collaborative crisis management is dominated by case-studies (n=22) and small to medium n comparative case-studies (n=28). Although it is often argued that each crisis is unique, we maintain that collaborative crisis management entails a set of common properties that prompt further comparative research. Even if hazard agents (the ‘triggering events’) are fundamentally different, the process of collaboration in relation to situational crises entails a set of common challenges related to e.g. mobilization of diverse sets of actors and coordination of joint activities under urgency and uncertainty. Comparative approaches can be utilized to a greater extent to assess how actors cope with these common challenges in different contexts, under varying amounts of pressure, and in relation to different types of events. Studies could contrast how different types of collaborative arrangements (e.g. self-organized versus hierarchically orchestrated) respond to the same type of challenge. Conversely, one may assess how well similar collaborative arrangements cope with different types of crises. Another line of inquiry – one that we also picked up from our literature review – is to conduct comparative assessments over time to investigate how collaborative arrangements change (AUTHORS 2014a) and the fluctuating levels of overlap between planned or preexisting networks and crisis responder networks (Kapucu 2005). Including the temporal dimension is also helpful to unveil processes of learning and how the ‘products’ of learning, such as new or revised plans and strategies, might affect collaborative crisis management in repeated hazards (AUTHORS 2014b). Studies of crisis-induced learning can also consider how the political aftermath – including blaming and framing contests – affect the ability to collectively identify lessons and reforms. Finally, researchers might also study the behavior and performance of collaborative crisis management arrangements operating in different institutional systems. For example, crisis management researchers debate – but rarely empirically investigate – how collaborative crisis management unfolds in command-and-control systems versus systems that apply principles of self-organization (Ansell, Boin and Keller 2010). These comparative approaches would certainly bring costs in terms of data-collection but are promising next steps to learn more about collaborative crisis management across cases and contexts.

We began this review based on the observation that research on collaborative crisis management has attracted growing scholarly attention in the past decades and is continuing to grow. Based on theoretical and empirical contributions by public administration scholars, we know quite a bit more about collaborative crisis management today than we did a few decades ago. Despite this progress, we agree with McGuire’s (2006) assessment from about a decade ago that there is still much to learn. The review and research agenda outlined in this article can hopefully support future efforts to this end.

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