Services Not Required? Assessing the Need for 'Coordination Agencies' During Disaster Response

Johanu Botha

Abstract In the 1950s, North American disaster research, then encapsulated within sociology, identified the lack of interorganizational coordination as a fundamental barrier to effective disaster response. Consequently, the idea of a public agency tasked with coordinating those organizations engaged in disaster response emerged. Disaster research has since grown into a multidisciplinary endeavor that has largely affirmed the importance of some type of coordinating agency during the response phase. Jurisdictions across the United States and Canada have paralleled this academic concern by including some type of disaster response coordinating agency within their bureaucracies. However, the need for coordination agencies expressed in the literature and their prominence in actual bureaucracies does not by themselves mean that coordination agencies perform a fundamental function during disaster response. Some form of hypothesis testing where the impact of coordination agencies is the main object of study is required. Yet no extensive review of disaster case studies and response frameworks has been pursued with the explicit goal of assessing the efficacy of coordination agencies in actual disaster responses. This chapter provides – to the author's knowledge – the first such review, where the different disciplines engaged in disaster research are kept in mind. It is shown that a discrepancy exists in the disaster literature between the 'conceptual frameworks' of ideal disaster response and the case studies of actual disaster events; unlike the assumption of the frameworks, the case studies demonstrate that the assumed importance of coordination agencies is unfounded.

Keywords Emergency management · Institutions · Coordination

J. Botha (✉)
School of Public Policy and Administration, Carleton University, Ottawa, Canada
e-mail: johanubotha@cmail.carleton.ca

J. Kendra et al. (eds.), *Disaster Research and the Second Environmental Crisis*,
Environmental Hazards, https://doi.org/10.1007/978-3-030-04691-0_11

Introduction

In the 1950s, North American disaster research, then encapsulated within sociology, identified the lack of interorganizational coordination as a fundamental barrier to effective disaster response.[1] Consequently, the idea of a public agency tasked with coordinating those organizations engaged in disaster response emerged. Disaster research has since grown into a multidisciplinary endeavor that has largely affirmed the importance of some type of coordinating agency during the response phase. Jurisdictions across the United States and Canada have paralleled this academic concern by including some type of disaster response coordinating agency within their bureaucracies. However, the need for coordination agencies expressed in the literature and their prominence in actual bureaucracies does not by themselves mean that coordination agencies perform a fundamental function during disaster response. Some form of hypothesis testing where the impact of coordination agencies is the main object of study is required.[2] Yet no extensive review of disaster case studies and response frameworks has been pursued with the explicit goal of assessing the efficacy of coordination agencies in actual disaster responses. This chapter provides – to the author's knowledge – the first such review, where the different disciplines engaged in disaster research are kept in mind. It is shown that a discrepancy exists in the disaster literature between the 'conceptual frameworks' of ideal disaster response and the case studies of actual disaster events; unlike the assumption of the frameworks, the case studies demonstrate that the assumed importance of coordination agencies is unfounded.

This chapter will first provide a brief overview of coordination agency titles, mandates, and administrative locations in the American and Canadian disaster response systems. Second, the importance given to coordination agencies in disaster research and actual bureaucracies from the mid-twentieth century to the early twenty-first century will be demonstrated. Third, it will then be shown that the case for coordination agencies as a crucial component of the disaster response system has not been made. This third section provides a (re)interpretation of the disaster literature, including prominent case studies that span a variety of jurisdictional contexts and hazards. It provides a novel contribution to disaster research by assessing how coordination agencies deal with hazards independent of their official mandates. The conclusion will suggest avenues of future research to ascertain the actual roles that coordination agencies play, and the degree to which coordination agencies may be warranted, so that communities experiencing disaster, disaster management

[1] While disaster management includes preparation for, mitigation of, response to, and recovery from disasters, this chapter focuses on the role of coordination agencies during the response phase as it is the response phase that was identified early on in the literature as ostensibly requiring central coordination. The role of coordination during the other phases also warrants investigation, but is beyond the scope of this chapter.

[2] In Waugh, Comfort, and Cigler's overview of emergency management research within the public administration literature, none of the research focused on bureaucratic coordination agencies as primary objects of study (2012).

systems, and the public administration of disaster response in particular, can better meet the challenges ahead.

Coordination Agency Titles, Mandates, and Locations

Coordination agencies come under a variety of titles. During the years following World War II, nuclear attack was the most salient large-scale domestic threat in both the United States and Canada, which engendered the term 'Civil Defense' into the titles of agencies mandated to mitigate the effect of such attacks. Later in the twentieth century other hazards, especially natural ones, began to fall under these organizations' purview and some variation of 'Disaster/Emergency Management Agency' became widespread.[3] Most coordination agencies in the United States and Canada currently fall under the title 'Emergency Management (or Measures) Organization (or Agency).' The recent rise of similar organizations housed in policy-specific departments, such as 'Health Emergency Management' agencies, has somewhat complicated such generality. For the sake of convenience, all organizations mandated by government with the coordination of other organizations during disaster response will be referred to here as 'Emergency Management Organizations' (EMOs), regardless of the level of government or scale at which they function. Both the United States and Canada largely apply an 'all-hazards approach' to disaster management, wherein a single agency deals with a variety of threats, versus the 'hazard-specific approach,' wherein specialized agencies are created for each possible threat. While some threats may warrant specialized agencies (e.g. threats to national security and the resulting security-specific governmental apparatus), most public agencies mandated to 'manage disaster' include a variety of hazards under their purview. Even a policy-specific EMO such as the aforementioned 'Health Emergency Management,' will coordinate the mitigation of not only obvious health hazards such as epidemics, but also floods, heat, and smoke from wildfires.

EMOs should not be conflated with emergency operations centers (EOCs). EMOs are organizations while EOCs are physical areas from which a particular event is managed. EMOs have an evolving, but constantly active, organizational life, while EOCs activate for the duration of a hazardous – or potentially hazardous – event. An EMO may have an EOC, but an EOC need not exist in an EMO. Many disaster response organizations may have an EOC, including frontline organizations like police departments, but may not have the EMO-distinguishing feature of a specific mandate to coordinate other organizations during disaster response.

Similarly, the coordination function central to the mandate of EMOs should not be confused with collaboration. While collaboration is important to disaster management (Waugh and Streib 2006; McGuire and Silvia 2010), some aspects of

[3] For a detailed history on the evolution of hazards and the agencies tasked with 'managing' them in the United States, see Knowles, Scott Gabriel (2011) *The Disaster Experts: Mastering Risk in Modern America,* Philadelphia: University of Pennsylvania Press.

coordination, such as inhibiting redundant actions and miscommunication, entail more than initiating collaboration between agencies. Indeed, effective coordination may dictate that two organizations stop collaborating on an objective best achieved by a single organization.

EMOs should also be distinguished from 'business continuity' offices found in private and public organizations. The mandated goal of 'business continuity' offices is the survival of a particular organization as an end in itself, while the mandated goal of an EMO is to coordinate those organizations that respond to disaster. 'Business continuity' aims to keep a particular organization resilient, while an EMO aims to keep people and property within a defined jurisdiction resilient.

The Federal Emergency Management Agency (FEMA) in the United States, while active in all phases of disaster management beyond response, is tasked with the coordination of organizations and resources should local and state capacity for response be diminished. After the 9/11 terrorist attacks FEMA was folded into the Department of Homeland Security, but is still an agency of substantial import, with its own identity and evolution in the American federal government (Tierney 2007; Cigler 2009). Similarly, Canadian provincial governments, the level of government largely responsible for coordinating emergency management in Canada, all include an agency of considerable size specifically tasked with coordination during disaster response (Government of Canada). FEMA and provincial EMOs are the main players in the United States and Canada, respectively, but are not the only ones. Each American state has established some type of agency responsible for coordination during disaster response and the Canadian federal government holds formal coordination capacity in its department of public safety. The key difference between the two countries is the scope of the federal level EMO. While FEMA plays an influential role in the standards, guidelines, and even funding of state EMOs,[4] as well as in actual disaster response, Public Safety Canada has not been a salient presence in disaster management, which is largely handled by the provinces through applying their own legislation (Lindsay 2014).

The formal mandates of EMOs are to 'mitigate, prepare for, respond to, and recover from emergencies and disasters,' or a slight variation of this phrase. In practice this usually means dealing with 'non-routine emergencies,' which are those events that are "generally anticipated, and for which there may be generic plans; but they stretch the emergency system, and require some shifts in operational procedures and thinking through more than expected scale, complexity and/or uncertainty" (Handmer and Dovers 2013). Examples include large fires, major storms, intense flooding, epidemics of known diseases and multi-vehicle accidents. In legislative terms, 'non-routine emergencies' largely fit the description of 'major disasters' in the American Stafford Act. '*Routine* emergencies' are lower in intensity, higher in frequency, and largely handled by hazard-specific and frontline emergency response organizations, such as police, fire, and emergency medical services. 'Complex emergencies,' such as the impacts of climate change, or severe and

[4] For example, state EMOs qualify for funds if they establish FEMA backed guidelines, such as the Incident Command System.

widespread socioeconomic decline, transcend any particular agency and demand the attention of the highest political authority. Responses to 'complex emergencies' generally entail the entire social, cultural, economic and political system.[5] While EMOs can be involved in routine and complex emergencies, they are the main players in non-routine emergencies.

The last word in this section is reserved for how EMOs fit into organizational theory. In his classic typology, Dynes observes four types of organizations that are involved in American disaster response (1970): 'established' organizations that carry out their regular tasks (e.g. police department directing traffic around a tornado impact zone), 'expanding' organizations established to meet regular tasks during a disaster (e.g. Red Cross volunteers providing shelter after a hurricane), 'extending' organizations that undertake non-regular tasks (e.g. construction company using its equipment to clear debris during rescue missions), and 'emergent' groups that engage in non-regular tasks (e.g. an ad hoc group of leaders overseeing general response effort).[6] Scanlon has replicated this work and demonstrated that the categories largely hold in a Canadian context (1999). It is not immediately clear, however, where EMOs fit into Dynes's framework. While an ad hoc body that coordinates response could be an 'emergent' organization, EMOs are far from ad hoc, and are established into a structure, which suggests an 'established' organization. Yet EMOs in their disaster response function are only activated during a disastrous event, which suggests an 'expanding' organization. EMOs may 'extend' to fulfill other more-frontline functions during a disaster that severely taxes many organizations' resources, but at that point an EMO is no longer purely a 'coordination agency,' and so any 'extending' functions are not under investigation in this chapter. EMOs within Dynes's framework, then, are 'established' *and* 'expanding' organizations. This is not a fundamental conceptual problem; Scanlon usefully applies Dynes's framework even while noting that organizations need not fit into only one category (1999, 33).

The Perceived Importance of EMOs

While still in its infancy, disaster sociology identified lack of coordination among organizations as a central problem to effective disaster response (Rosow 1955; Williams 1956; Form and Nosow 1958).[7] Coordination occurred when the actions of more than one organization improved outcomes. Lack of coordination, in turn, occurred when the actions of more than one organization did not improve, or even

[5] For an extended discussion on frameworks used to categorize emergency and disaster types, see Handmer and Dovers (2013).

[6] These are the Dynes's own examples.

[7] Programs of disaster research took hold in American sociological departments in the decade after World War II as concerns about nuclear disaster due to atomic weapons became widespread (Baker and Chapman 1962, 4).

worsened, outcomes. While not a logical requirement of such basic definitions, the analytical leap made by this early work was that 'coordination' necessarily meant 'formal coordination,' while 'lack of coordination' meant 'lack of formal coordination'. Desirable disaster response outcomes, such as quickly delivering the right amount of resources, the speed at getting individuals to safety, and generally matching the supply of relevant organizational expertise and capacity with corresponding 'on the ground' demands, was argued to be negatively affected by the lack of an official agency empowered to organize the variety of frontline organizations involved in disaster response. These frontline organizations could range from non-profits like the Red Cross to law enforcement agencies like a local police force to private sector companies providing anything from food to bulldozers. The academic solution posed to remedy this lack of coordination was an organization tasked solely with providing a "central communications system" during a disaster (Form and Nosow 1958, 224). Extensive planning for disaster by individuals in 'the disaster business' was not enough; their crucial role would be running an organization that coordinates the other organizations involved (Barton 1969, 239). In other words, an EMO.

A prominent early and influential finding emphasized the need for EMOs. In 1957, Fritz and Mathewson observed a general phenomenon during disaster events: an array of resources made up of people, information and materials flood *into* disaster zones. The authors characterized this *convergence* as a problem because it made coordination of disaster response more difficult. They posed two main solutions to the problem: (1) greater control of information acquisition and distribution and (2) greater control of the disaster site itself. Both of these suggestions warrant some type of EMO that coordinates people, information and material (or the organizations that channel them) so as to minimize 'unnecessary' convergence.[8]

The theme of interorganizational disarray as problem, and central coordinating organization as solution, echoes throughout the subsequent literature. In a 2010 overview of disaster sociology, Drabek stressed that while it is not uncommon to find sophisticated coordination and communication mechanisms *within* response organizations, "the thing that hits like a freight train is the marked disorganization among the agencies responding" (2010, 148). While Drabek did not call for excessively centralized bureaucratic management of disaster response organizations, he did suggest the need for some type of EMO to establish "properly controlled" communication (2010, 161).

The importance disaster sociology placed on the lack of coordination and the resulting need for EMOs was affirmed by new disciplines as they entered disaster research, especially those with strong links to practitioners, such as public administration and crisis management. A prominent and established introduction to emergency management textbook stated that communication among responding organizations is the 'Achilles heel' in the field (Haddow et al. 2008, 143). An extensive report in *Homeland Security Affairs* by Donahue and Tuohy on 'lessons never learned' in disaster response stressed the pervasiveness of too little coordination

[8] Scanlon, Steele and Hunsberger have since observed that desirable forms of convergence do occur, including a form of 'invited convergence' (2012).

among organizations (2006). Criticisms of the (mis)management of Hurricane Katrina prominently included the lack of some type of 'effective' central coordination mechanism (Farazmand 2007). In their work on crisis management, Boin and Hart suggested that contemporary citizens expect their governments to play a role during disaster response (2007, 48), from which they build the need for an EMO (2007, 50).

The practitioner side to these disciplines enacted policies, programs and organizations that run parallel to the academic literature's perspective: the 'professional model' of all-hazards emergency management that arrived after the 'traditional,' nuclear attack-focused model underscored "the need to integrate activities," where "the police, fire and [Emergency Medical Services] collaborate with the media, the coroner's office, and crisis counselors" (McEntire 2007, 99). EMOs were the organizations mandated to spark such collaboration through coordination and were identified as the mechanisms through which disaster response activities could be 'integrated.' In 1979 President Carter created FEMA (2007, 96) while Canadian provinces filled their country's federal void in emergency management by establishing their own disaster response coordination mechanisms throughout the 1970s (Scanlon 1982). Today FEMA and provincial EMOs are salient features in their respective governments' bureaucracies, and join a host of other coordination-tasked agencies and individuals at higher and lower levels of government.

No strong causal link can be drawn between the need for EMOs expressed in the academic literature and the manifestation of EMOs in the actual bureaucracies of the United States and Canada, but the parallel exists: both disaster research and governments have accepted the coordinative function of EMOs as key players in disaster response. What evidence exists, however, that such organizations are crucial variables in the desirable outcomes of disaster response? Has the academic disaster literature, with its myriad of multidisciplinary inputs, been rigorous enough in overviewing, interrogating and defending the – often implicit – assumption that some form of an EMO is a necessary cog in disaster response? Can governments justify allocating resources to EMOs over other parts of the disaster management system? This chapter turns to these questions in the following sections.

The *raison d'etre* of EMOs: How Important is the Formal Coordination of Disaster Response?

The perceived need for EMOs, justified by the problems that ostensibly stem from the lack of (formal) interorganizational coordination, can be found throughout the disaster literature. Yet while research that proposed conceptual frameworks for disaster response, reviewed 'lessons never learned' in disaster response, and elaborated on emergency management best practices point to a role for EMOs, analyzing the disaster literature's extensive range of *case studies* produces evidence to the contrary. There is ample room for doubt regarding the degree to which EMOs

improve or create desirable outcomes in disaster response and, more generally, the degree to which the lack of (formal) coordination among organizations poses a fundamental problem in the first place.

Leaving aside for the moment the degree to which formal coordination is in fact desirable, local EMOs have historically struggled in actually achieving the coordinative function – to whatever result – for which they were apparently tailor made (Tierney et al. 2001). While this was partly due to lack of legitimacy and funding in their infancy, the coordinative ability of local EMOs during disaster response remained uncertain even as their symbolic and financial support grew. The number of tasks an EMO was involved in appears to have increased as a function of its disaster experience, but greater involvement from an EMO did not by itself mean greater coordination among those facing a disaster. For example, EMOs with greater legitimacy and funding may have had the resources to participate in the preparedness and mitigation phase of disaster management through extensive planning, but lack of coordination were "seen even in cases where planning was judged to be of high quality" (2001, 125).

Turning to the desirability of EMO coordination, it should be noted that the criteria established by Wenger, Quarantelli and Dynes in 1986 for 'effective EMOs' does not necessarily translate to effective overall response by the disaster response system. An EMO may have good information inputs and outputs, a high-functioning emergency operations centre, enough human and material resources, healthy relationships with the organizations it is tasked to coordinate, and an accepted internal authority structure, but not have any measurably desirable impact on disaster response. The criteria established by Wenger, Quarantelli and Dynes measured a healthy EMO, not a healthy overall disaster response. In a similar vein, an array of introductory textbooks are produced on emergency management 'best practices' or 'principles' (Haddow et al. 2013; Rubin 2012; Waugh and Tierney 2007; Lindell et al. 2006), but the degree to which these texts described the 'ideal' emergency management coordination agency is evidence only that such agencies exist and that there is a demand for academic knowledge on how to structure them.[9] In general, these texts addressed the 'second order' problem of how best to operationalize emergency management, but not the 'first order' problem of whether emergency management manifested through a central coordination agency is needed.[10]

[9] Kapucu's recent work on collaborative governmental responses to terrorist attacks included examples of effective interorganizational coordination, but is focused on the particular 'hazard' of terrorism (2012).

[10] Researchers such as Kuban (1996) and Boin and Hart (2007) argue that government has a key role to play in disaster response. This argument, however, may be perfectly valid without saying anything about the need for EMOs during response. It is also noteworthy that overview articles on emergency management and emergency management policy in Canada barely pay attention to the specific roles of EMOs (Wachtendorf 2005; Henstra 2003). Kapucu and Garayev have noted the positive impacts of mutual aid agreements between emergency management agencies at the U.S. state level, but have stressed that such collaboration does not translate to central coordination (2011).

Ironically, the limits of EMOs can be found in the same early literature that suggested the need for EMOs in the first place. Barton observes that the larger the scale of a disaster the more important grassroots responses become (1962, 223). These responses are bottom-up and by definition uncoordinated in any formal sense. In later work, he adds that when the "onset of stress is sudden and preparedness is low," which is characteristic of disaster,[11] "mass self help rather than activity of formal organizations would be the immediate response" (1969, 46). The nature of disaster, including but not limited to its potentially large scope, can make spontaneous and uncoordinated (in any formal sense) behaviour *functional*. While the early observation of convergence phenomena during disaster (discussed above) may have been characterized as a 'problem' by Fritz and Mathewson, the behaviour *types* that arose during convergence are largely desirable: most individuals descended upon disaster zones to help or inquire about loved ones and almost nobody arrives to exploit the situation (Dynes 1968; Quarantelli and Dynes 1972). If the lack of coordination is less problematic than the literature assumes, then the convergence of helpful individuals to a disaster site is not a chaotic phenomenon that requires 'controlling' by an EMO. Furthermore, even if convergence *is* a substantial problem in regards to disaster response, there is no reason to assume by default that an EMO would not contribute to convergence. Indeed, 'official' organizations can cause as much convergence as informal behaviour (Scanlon 1992).

A vibrant niche in disaster research on spontaneous behaviour, or *emergence,* confirmed the observations by early scholars like Barton that – formally – uncoordinated behaviour during disaster may be profoundly functional (Disaster Research Group 1958; Zurcher 1968; Scanlon 1999; Voorhees 2008). Emergence is the new sets of behaviour – including the formation of new groups – that arise during disaster to deal with its effects. For example, in his case study on volunteer organization during the New York City response to the 9/11 World Trade Centre attack, Voorhees showed that fast forming new groups emerged on the disaster scene before official authorities arrived and formal organizations took control. These groups formed a functional disaster response structure that could efficiently carry out a variety of response functions, from food and shelter provision to finding missing people. Voorhees stressed that desirable disaster response outcomes increased when formal organizations did not try to impose their prearranged response structure on the organic activity that occurred 'on the ground'. The apparently crucial role of a coordinating EMO that channels appropriate activity from on high appears at least somewhat diminished in light of functional emergent behaviour.

The early disaster literature is littered with case studies where existing organizations perform exceedingly well during disaster response without central agency coordination. One of the early disaster case studies surveyed tornado-impacted communities for their perception of the performance of response organizations (Moore 1958). The United States Army and Air Force received, on average, the best

[11] While not all disasters need be unprepared for, all sudden and adverse events that are *not* prepared for can be disastrous. For an overview of the literature on the definitions of disaster, see "What Is a Disaster?" by Ronald W. Perry in the *Handbook of Disaster Research* (2007).

reviews. The disaster response of those organizations with cohesive internal organization received 'higher marks' than those organizations charged with the coordination of resources, such as the Civil Defense Office. This finding ran parallel to studies on the Michigan State Police compared to other organizations, which found that minimal dependence on other organizations can be an asset to effective response (Form and Nosow 1958, 226). Similarly, the mining company that ran the response to the severe Springhill, Nova Scotia coal mine 'bump' in 1958 appears to have benefitted from its monopoly of the response and its internal cohesion (Beach and Lucas 1960).

It could be argued that these case studies from the mid-twentieth century have little relevance to a contemporary moment with a greater array and variety of stakeholders during a disaster, and a greater expectation from citizens regarding the responsibility of government to 'manage' a disaster. However, more recent case studies also demonstrated the success of disaster responses where multiple organizations are involved in the absence of central coordination. Scanlon showed the primary importance geography can play in disaster response independent of an EMO by tracing the inherent functionality of disaster response operations in locations where the ocean can be instrumentalized (1996). His investigation into how Eastern Ontario handled the 1998 ice storm suggested that disaster response in Canada is more a function of that country's federal structure, which determines the organizations with legitimacy to act, and individual leadership, than central coordination (Scanlon 1998). How Gander, Newfoundland handled diverted flights during the 9/11 terrorist attack on New York City showed that multiple emergency operation centres (EOCs), operating independent of an umbrella EMO, can meet disaster victims' needs efficiently as long as each EOC has relatively discrete objectives (Scanlon 2002). Other case studies described disaster responses where familiarity with previous disaster experience, not central coordination, appears to be far more important in dictating response capability (Scanlon 1982).

Perhaps the most striking recent work on the efficient ways *uncoordinated* individuals and organizations can work together came from the case study of the successful evacuation of lower Manhattan by water transport during the 9/11 World Trade Centre attacks. Kendra, Wachtendorf and Quarantelli note the following:

> [There] had been no planning for this scale and kind of organizational activity. No group was responsible for making such an activity a central part of its disaster planning. No organization or official was in complete charge of the overall emergent evacuation activities. Who went where, where evacuees were disembarked in New Jersey or Staten Island, and how long any vessel operated, were decisions often *made independently by the multiple operators of different vessels who had little direct communication with one another or agencies elsewhere*. (2003, 316 – 317, emphasis added).

Kendra and Wachtendorf also observed that one of the few much-praised responses during the otherwise maligned Hurricane Katrina response was improvisational and uncoordinated in nature. Here again the Coast Guard elected not to play an EMO-role in coordinating civilian boat operators. Water vessels conducted a successful search and rescue operation by converging on "heavily damaged areas […] on their own initiative" (2005, 3). These case studies suggest that the crucial variable in

desirable disaster response outcomes, then, may not be a central, coordinating agency, but some other variable, such as an internally-cohesive organization with a monopoly of the disaster response, favorable geography, or functional emergent behaviour.

While disaster responses may be successful independent of EMOs, the presence of an EMO may be detrimental to the response effort. In his overview of disaster responses in the context of Canadian federalism, Scanlon noted that the main areas of interorganizational conflict have occurred *within* levels of government, the very areas EMOs should be able to 'coordinate' (1995). Interaction *between* levels of government, where no central coordinating body dictated communication, worked together relatively well across a variety of incidents. The introduction of an extra organization without explicit frontline duties into the disaster response system seems to have increased rather than diminished conflict.

Furthermore, recent surveys have shown that individuals within EMOs may have perspectives that undermine effective disaster response by perpetuating counterproductive myths about how people behave during disaster. Despite dismissing the importance of social science research, almost half of Ontario's emergency managers expressed beliefs regarding widespread panic and looting behaviour that has long been dismissed by the academic literature (Nirupama and Etkin 2009). A substantial number of emergency managers also expressed support for a strictly hierarchical, command and control structure for disaster response. A strict command and control structure is rigorously challenged by disaster research and can have adverse consequences for disaster response. For example, functional and adaptive search and rescue (SAR) during and after a disaster is done by a variety of official *and non-official* individuals and organizations, especially those already on the scene, the survivors of an event (Poteyeva et al. 2007). EMOs working under a rigid 'command and control' structure would allow only the 'right' people to perform SAR activities, diminishing the efficiency of the total SAR operation.

Whether 'command and control'-style or more collaborative, there is a deeper, structural reason why EMOs may harm disaster response. Perrow has identified 'tight coupling' as a characteristic of high-risk systems or organizations (1984, 2007a, b, 2008). Tightly coupling means that variable X is directly linked to variable Y, and that an event in the former will impact the latter in a way that cannot easily be stopped. EMOs may be a mechanism for 'tightly coupling' the disaster response system. The intention may be to ensure effective communication and task-assignment among all engaged organizations, but EMOs may have an inbuilt vulnerability in as far as they become the main anchor to which other organizations are tethered. If an adverse event impacts the EMO, or the EMO contains some undesirable trait during disaster response, it could necessarily impact the entire disaster response system. This is in contrast to a 'loosely coupled' system where individual response organizations build relationships with each other. The failing of one relationship or the undesirable actions of one organization will not necessarily impact the entire system.

The Sign of Successful Coordination: Can a Case for EMOs Be Made?

Desirable disaster response outcomes can occur in the absence of formal coordination and in some cases tentative links can be made between coordination agencies and undesirable disaster response. However, these two outcomes – significant as they appear – may simply be exceptions to the rule. Desirable outcomes in the absence of variable X does not mean outcomes cannot be improved with variable X, and tentative links are not enough to dismiss the 'ideal version' of a coordination agency. Perhaps the impact of EMOs on disaster response can be measured with enough data, and a positive picture of EMOs could therefore theoretically drawn. The ability to draw such a picture does not currently exist in the disaster literature (certainly not enough of one to warrant the implicit assumption that formal coordination is important). Furthermore, painting such a picture faces severe methodological challenges.

The impact of EMOs on disaster response outcomes is difficult to measure given ongoing confusion around what, exactly, emergency management as manifested in a coordination agency entails. Despite the formal mandate of EMOs and the types of events they generally address (discussed early in this chapter), Schroeder, Walmsley and Ward noted the following:

> [We have not] completely settled how emergency management should be organized [… There] are seemingly intractable problems of organization, administration, and coordination. How can one agency be given the power and jurisdiction necessary for effective disaster planning and coordination of response and recovery operations without giving it more power in times of both nonemergencies and emergencies than other participants in the political process are willing to grant it? (2001, 359)

Schroeder et al. tapped into the political problem of power sharing, policy agendas and empire building inherent to the public policy process. This problem suggests that high value issues will be drawn to the most powerful actors in the process, which is indeed what happens when a disaster reaches a certain scope. The process for declaring a Presidential disaster in the United States, and thereby denoting what counts as a major disaster, is a political process, not one based on consistent criteria (Cutter 2005, 46). The location of FEMA in the federal bureaucracy is itself largely affected by presidential preference (Cigler 2009), and presidential performances during disasters demonstrate the president's direct link to the emergency management file (Kapucu 2009). Drabek stressed that the ability to perform effective interorganizational coordination is a function of how tightly an emergency manager is linked to "the key point of authority and power" (2010, 217). In their multi-year comparative study on the effects of centralization in the United States, Japan and Italy on disaster responses, McLuckie and Benjamin noted that the final authority for coordinating response during major disasters automatically moves to the relevant political authority (1977, 78).[12] In short, the president is "the nation's *de facto*

[12] In his classic study on the infamous Waco, Texas tornado, Moore also observes the link between the intensity of a disaster and the movement of 'managing' the disaster up the political authority chain (1958).

crisis manager in chief" (Stern 2009, 189). At a smaller scale, Fritz et al.'s case study on behaviour in an emergency shelter during a snow-storm demonstrated that the coordination function automatically moved to the individuals who arose as political authorities (1958). The problem these dynamics pose for assessing the impact of EMOs is that the moment adverse events reach a point where they need 'professional' coordination, they are often salient enough issues for the political authority to take over, rendering null any substantial coordinating authority an EMO might have had.

Schroeder et al. also pointed to an operational problem: even if granting EMOs coordinating power during the response phase of a disaster was universally accepted, is it possible that one agency can effectively coordinate the multitude of organizations involved? Considering that these organizations include the Red Cross, the Salvation Army, other agencies in government, police and other emergency services, effective coordination is far from obvious. Indeed, lack of coordination is identified as a perennial problem for public administration writ large (La Porte 2006), and key insights from the operation of complex systems – as disaster response systems certainly are – is that no single agency contains the capacity to manage large-scale threats (Skertich and Comfort 2012). As just another creature of the bureaucracy, it is not clear how an EMO – despite its official mandate – should solve a problem that transcends its purview and capacity.

Given these political and operational problems, do any bars exist that can be used to demonstrate the degree to which EMOs have positive, negative or neutral impacts on disaster response? Emergency management leaders themselves have noted the positive impacts of EMOs and regularly call for more resources to do what they have stressed are essential jobs (Donahue and Tuohy 2006). It is common, however, for directors of public agencies to call for more resources (McNutt 2002), and such calls can be motivated by a desire to grow the power and prestige of an agency. Organizations can – and often are – used for goals other than their official mandates (Perrow 2007a, b). An example of this can be seen in efforts to tie the EMO's fate to the fate of government. Hugh and Grant suggested the 'continuity of government' as a framework for EMOs (2001), which rooted the EMO function in serving government as an end in itself, not in coordinating all organizations as a means to the broader end of better disaster response. EMOs could therefore mandate government resources because government survival under crisis relies on EMOs. This manoeuvre essentially conflates EMOs with business continuity offices and suggests EMOs should be the business continuity office for government writ large. A more subtle approach generates the very conditions that require the services an agency provides. For example, Kirschenbaum noted the following:

> [More] disasters mean the need for more [EMO] budgets, more manpower, and eventually more recognition. The relatively simple task of administratively redefining disasters can by default triple the workload. While floods were formerly part of nature and taken in stride, now they are disasters. (2004, 99)

More disasters – actual or perceived – can be opportunities for EMOs to call for more resources. They have an incentive to do so, and therefore measuring the impact

of EMOs needs to control for this incentive. One way of doing so is to not rely on the characterization of EMO impacts provided by emergency management professionals themselves or even emergency management-specific scholars (both have incentives to value EMOs), but by external monitoring of EMO behaviour and its impact on disaster response by public agencies or public administration scholars that have a less obvious stake in EMO success. Given the nature of an EMO's mandate, however, such monitoring is difficult. Breton and Wintrobe note three characteristics that inhibit effective monitoring of a public agency's actual impact: secret, non-routine, and complex work (1982). While EMOs may not be secret, their work is by definition non-routine. Disasters are unpredictable and will change in nature and scope every year. It will be difficult – although perhaps not impossible – to compare 1 year's work on disasters to another year's work, which is a fundamental challenge to measuring improvement of performance over time. Disaster response is also inherently complex given the array of organizations involved, which allows for accountability shirking or 'blame avoidance' (Moynihan 2012). It is not easy to pin point where a response went wrong, and fingers can always be pointed at someone else.

EMOs could perhaps be primed – if not measured – for success by mandating a certain level of skill set in their employees. Such standardization, however, runs into intractable problems when projected onto emergency management. There does not appear to be a specific set of distinguishable skills that justifies denoting emergency management with the type of professional status given to physicians and lawyers (Drabek 2010, 214). Furthermore, there appears to be incredible divergence among emergency managers themselves on what successful emergency management entails (Nirupama and Etkin 2009).

Perhaps the measurement of EMO impact on disaster response is clouded by a preoccupation with what EMOs *should* be doing versus what they are actually doing. If all normative assumptions are left aside, what functions do EMOs fulfil? Answering this question may lead to the sort of analysis employed by Clarke on disaster and emergency plans. Clarke did not assume that the officially stated goals of such plans are synonymous with their actual function. The results of his study demonstrated that the actual functions of these plans were to act as 'fantasy documents' meant to assure external stakeholders and competitors that the organization in question is competent, sophisticated, and prepared for disaster (1999). Emergency plans, then, can be more about interorganizational competition than about preparing for the worst. The degree to which EMOs are 'fantasy *agencies*' meant to assure the public and non-government organizations, from non-profits to companies, that the government is ready and able to protect them from a variety of hazards is an avenue of inquiry not explored in the disaster research. The official mandates of EMOs and their actual function are assumed to be one and the same.

The assumption that the outcomes of EMO behaviour is a function of its formal mandate – the effective coordination of disaster response – casts a blind eye to substantial work in public administration that assesses the outcomes of bureaucratic behaviour. Conflating formal bureaucratic mandate with policy outcomes ignores a variety of mechanisms that could in actuality be driving the outcomes, including:

the incentives faced by individuals within an agency and how they perceive their roles (Allison 1971), whether such individuals are driven by day-to-day situations, expectations from colleagues, ideology, or professional values (Wilson 1989), the degree to which an agency is representative of the public it serves (Meier 1975), and the institutional context of EMOs and the programs they provide (Seidman 1998).

Conclusion: Future EMO Research

The widespread use of 'coordination agencies' in American and Canadian bureaucracies and the assumption of their importance to disaster response systems is not justified in the case studies of actual disaster events. These studies suggests that a public agency specifically mandated with coordinating other organizations during disaster response may be an ineffectual solution to a problem that a.) does not exist (i.e. formal coordination is not a problem) or b.) transcends the solution provided (i.e. lack of formal coordination is a perennial feature of public administration in particular and collective action in general, the solution to which will not be another creature of the bureaucracy). However, the literature as it currently stands focuses heavily on sociological outcomes of disaster and the disaster response system writ large. It does not include extensive research where EMOs are the primary object of study. A wholesale rejection of EMOs as important to the disaster response system and worthy of public resources is therefore not in order. Rather, the expected call for 'more research' is in this case far from perfunctory: future research needs to ascertain if and when the formal coordination of disaster response by a public agency has a measurable impact on such response, and whether such impact merits the academic assumptions and public resources that support the coordination function of EMOs.

Future research can include: comparative case studies of similar disasters with and without an active EMO; assessments of relationships between disaster response outcomes and the bureaucratic location of EMOs; cross-jurisdictional, historical and cultural analyses of what coordinating bodies look like and which of them have desirable impacts on disaster response; and meta-analyses of EMO responses to allow broader empirical claims. In order to answer the question of actual EMO impact, this research must be distinct from the existing disaster literature in at least two ways. First, the object of study for all this research should be EMOs themselves. The hazards, sociological response, socioeconomic outcomes, legal frameworks, media attention, the disaster response system writ large and other phenomena related to disasters are of secondary importance, and only to the degree that they tell the researchers something about the role of EMOs. Second, careful attention should be paid to the methodological approach used to study EMOs. As EMOs in the United States and Canada are government-mandated public agencies, public administration scholars in particular should apply frameworks from their field to delineate EMO impacts, including theories of bureaucratic politics where particular attention is paid to incentives faced by agencies and individual bureaucrats independent of their formal mandates. The current research on EMOs is replete with assumptions

that the primary driver of emergency managers and emergency management agencies is the management of emergencies. Such assumptions at best naively take official mandates at face value and at worst conflate normative with objective assessments. Even frameworks established on the border between disaster management and public administration – e.g. the highly developed concepts of 'high-reliability' and 'complex adaptive' systems (see La Porte 2006; Comfort 2007) – prioritize the disaster management system writ, and all its constitutive parts, over the specific bureaucratic agencies mandated to coordinate disaster response. In these frameworks the – potentially perverse – incentives faced by individuals within such agencies, and the way such agencies are constrained by their particular institutional contexts (i.e. a Westminster parliamentary versus presidential system), are not salient features of analysis.

Interesting and new hypotheses can be created once EMOs become a primary object of study. For example, while the disaster response system may be "'highly prepared' for a given type of stress if it has well defined roles for individuals, for which they are adequately trained, and with these roles integrated in workable organizations and plans" (Barton 1969, 41), such a hard structure may not be flexible enough to meet novel adverse phenomena. Entrenched roles may improve response for specific types of disaster but increase vulnerability for disasters that diverge from expected patterns. Frequent response to routine emergencies can lead to a 'trained incapacity' that is blind to "the unique needs of situations that are qualitatively different" (Drabek 2010, 149). It could be posited that EMOs, with their all-hazards approach, and by not being entrenched in a specific department, or a part of conventional fire, police or medical response, are well positioned to guard against such 'trained incapacity.' EMOs could also work against disaster subcultures that prime communities for one type of hazard, a problem identified by Anderson in 1964. These are ways that EMOs may complement and improve 'high reliability' or desirable systems. Other hypotheses could posit that the 'all-hazards' status of EMOs provide unique avenues to them for growth through the 'swallowing up' of other agencies' mandates, such as welfare distribution post disaster (Social Services), epidemiological studies of epidemics (Public Health), or anti-terrorism (Public Safety). All these, however, are only hypotheses, ones that require rigorous study and that should not be assumed to be important in the way the EMO role in coordination has been. In general, disciplines involved in disaster research need to understand whether the prescribed mandates of EMOs align with the actual role they play in the disaster response system.

References

Allison, G. (1971). *Essence of decision*. Boston: Little, Brown.

Baker, G. W., & Chapman, D. W. (1962). *Man and society in disaster*. New York: Basic Books.

Barton, A. H. (1969). *Communities in disaster: A sociological analysis of collective stress situations*. Garden City: Doubleday.

Beach, H. D., & Lucas, R. A. (1960). *Individual and group behavior in a coal mine disaster*. Washington, DC: National Academic of Sciences, National Research Council.

Boin, A., & Hart, P. 't. (2007). The crisis approach. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research*. New York: Springer.
Cigler, B. A. (2009). Emergency management challenges for the Obama Presidency. *International Journal of Public Administration, 32*(9), 759–766.
Clarke, L. B. (1999). *Mission improbable: Using fantasy documents to tame disaster*. Chicago: University of Chicago Press.
Comfort, L. K. (2007). Crisis management in hindsight: Cognition, communication, coordination, and control. *Public Administration Review, 67*, 189–197.
Comfort, L. K., Waugh, W. L., & Cigler, B. A. (2012). Emergency management research and practice in public administration: Emergence, evolution, expansion, and future directions. *Public Administration Review, 72*(4), 539–547.
Cutter, S. L., & Emrich, C. (2005). Are natural hazards and disaster losses in the U.S. increasing? *EOS, Transactions American Geophysical Union, 86*(41), 381, 388–389.
Disaster Research Group, 1958. Behaviour in an Emergency Shelter: A Field Study of 800 Persons Stranded in a Highway Restaurant During a Heavy Snow Storm, Washington, DC.
Donahue, A. K., & Tuohy, R. V. (2006). Lessons never learned: A study of the lessons of disasters, why we repeat them and how we can learn from them. *Homeland Security Affairs, 2*(6), 1–28.
Drabek, T. (2010). *The human side of disaster*. Boca Raton: CRC Press.
Dynes, R. R. (1968). *The functioning of expanding organizations in community disasters*. Report series #2. Columbus, Ohio: Disaster Research Center. Ohio State University.
Dynes, R. (1970). *Organized behavior in disaster*. Lexington: Heath Lexington Books.
Farazmand, A. (2007). Learning from the Katrina crisis: A global and international perspective with implications for future crisis management. *Public Administration Review, 67*, 149–159. December: Special Issue.
Form, W., & Nosow, S. (1958). *Community in disaster*. New York: Harper.
Fritz, C. E., (Disaster Research Group), et al. (1958). *Behaviour in an emergency shelter: A field study of 800 persons stranded in a highway restaurant during a heavy snow storm*. Washington, DC: National Academy of Sciences, National Research Group.
Fritz, C. E., & Mathewson, J. H. (1957). *Convergence behavior in disasters: A problem in social control*. Washington, DC: National Academy of Sciences, National Research Council.
Government of Canada. (n.d.). *Emergency management organizations*. http://www.getprepared.gc.ca/cnt/rsrcs/mrgnc-mgmt-rgnztns-en.aspx
Haddow, G., Bullock, J., & Coppola, D. P. (2008). *Introduction to emergency management* (3rd ed.). United Kingdom: Butterworth-Heinemann.
Haddow, G., Bullock, J., & Coppola, D. P. (2013). *Introduction to emergency management* (5th ed.). Oxford: Butterworth-Heinemann.
Handmer, J. & Dovers, S., 2013. Handbook of Disaster Policies and Institutions, New York: Routledge.
Henstra, D. (2003). Federal emergency management in Canada and the United States after 11 September 2001. *Canadian Public Administration, 46*(1), 103–116.
Kapucu, N. (2009). Leadership under stress: Presidential roles in emergency and crisis management in the United States. *International Journal of Public Administration, 32*(9), 767–772.
Kapucu, N. (2012). *Network governance in response to acts of terrorism: Comparative analyses*. New York: Routledge.
Kapucu, N., & Garayev, V. (2011). Collaborative decision-making in emergency and disaster management. *International Journal of Public Administration, 34*(6), 366–375.
Kendra, J. M., Wachtendorf, T., & Quarantelli, E. L. (2003). The evacuation of Lower Manhattan by water transport on September 11: An unplanned success. *Joint Commission of Quality and Safety, 29*, 316–318.
Kirschenbaum, A. (2004). *Chaos organization and disaster management*. New York: Marcel Dekker.
Knowles, S. G. (2011). *The disaster experts mastering risk in modern America*. Philadelphia: University of Pennsylvania Press.

Kuban, R. (1996). The role of government in emergency preparedness. *Canadian Public Administration, 32*(2. June), 239–244.

La Porte, T. M. (2006). Organizational strategies for complex system resilience, reliability, and adaptation. In P. E. Auerswald, L. M. Branscomb, T. M. La Porte, & E. O. Michel-Kerjan (Eds.), *Seeds of disaster, roots of response: How private action can reduce public vulnerability*. New York: Cambridge University Press.

Lindell, M. K., Prater, C., & Perry, R. W. (2006). *Introduction to emergency management*. Hoboken: Wiley.

Lindsay, J., 2014. The power to react: review and discussion of Canada's emergency measures legislation. The International Journal of Human Rights, 18(2), pp.159–177. Available at: http://www.tandfonline.com/doi/abs/10.1080/13642987.2014.889392 [Accessed November 5, 2014].

McEntire, D. A. (2007). *Disaster response and recovery: Strategies and tactics for resilience*. Hoboken: Wiley.

McGuire, M., & Silvia C. (2010). The effect of problem severity, managerial and organizational capacity, and agency structure on intergovernmental collaboration: Evidence from local emergency management. *Public Administration Review.* March|April.

McLuckie, B. F. (1977) *Italy, Japan and The United States: Effects of centralization on disaster responses 1964–1969*. Disaster Research Center Historical and Comparative series no. 1.

McNutt, P. (2002). *The economics of public choice* (2nd ed.). Cheltenham: Edward Elgar Publications.

Meier, K. (1975). Representative bureaucracy: An empirical analysis. *American Political Science Review, 69*, 526–542.

Moore, H. E. (1958). *Tornadoes over Texas: A study of Waco and San Angelo in disaster and its impact upon the study of disaster*. Austin: University of Texas Press.

Moynihan, D. P. (2012). Extra-network organizational reputation and blame avoidance in networks: The hurricane Katrina example. *Governance: An International Journal of Policy, Administration, and Institutions, 25*(4), 567–588.

Nirupama, N., & Etkin, D. (2009). Emergency managers in Ontario: An exploratory study of their perspective. *Journal of Homeland Security and Emergency Management, 6*(1), 1–18.

Perrow, C. (1984). *Normal accidents: Living with high-risk technologies*. New York: Basic Book.

Perrow, C. (2007a). Disasters ever more? Reducing U.S. vulnerabilities. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research*. New York: Springer.

Perrow, C. (2007b). *The next catastrophe: Reducing our vulnerabilities to natural, industrial, and terrorist disasters*. Princeton: Princeton University Press.

Perrow, C. (2008). Disasters evermore? Reducing our vulnerabilities to natural, industrial, and terrorist disasters. *Social Research, 75*(3 Fall, 2008), 1–20.

Perry, R. W. (2007). What is a disaster? In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research*. New York: Springer.

Poteyeva, M., Denver, M., Barsky, L. E., & Aguirre, B. E. (2007). Search and rescue activities in disasters. In H. Rodríguez, E. L. Quarantelli, & R. Dynes (Eds.), *Handbook of disaster research* (pp. 200–216). New York: Springer.

Quarantelli, E. L., & Dynes, R. R. (1972). When disaster strikes (it isn't much like what you've heard and read about). *Psychology Today, 5*, 66–70.

Rosow, I. L. (1955). *Conflict of authority in a natural disaster*. Doctoral dissertation. Harvard University.

Rubin, C. B. (2012). *Emergency management: The American experience 1900–2010* (2nd ed.). Boca Raton: CRC Press.

Scanlon, J. (1982). The roller coaster story of civil defence planning in Canada. *Emergency Planning Digest, 9*(2), 2–14.

Scanlon, J. (1992). *Convergence revisited: A new perspective on a little studied topic*. Boulder: The University of Colorado.

Scanlon, J. (1995). Federalism and Canadian emergency response: Control, co-operation and conflict. *The Australian Journal of Emergency Management, 10*(1), 18–24.

Scanlon, J. (1996). Help from the deep: The potential of ocean-based response to disaster. *Disaster Prevention and Management, 5*(3), 15–22.
Scanlon, J. (1998). Military support to civil authorities: The Eastern Ontario ice storm. *Military Review, 4*, 41–51.
Scanlon, J. (1999). Emergent groups in established frameworks: Ottawa Carleton's response to the 1998 ice disaster. *Journal of Contingencies & Crisis Management, 7*(1), 30–37.
Scanlon, J. (2002). Helping the other victims of September 11: Gander uses multiple EOCs to handle 38 diverted flights. *Mass Emergencies and Disasters, 20*(3), 369–398.
Scanlon, J., Steele, E., & Hunsberger, A. (2012). By air, land and sea: Canada responds to Hurricane Katrina. *Canadian Military Journal, 12*(3), 54–62.
Schroeder, A., Walmsley, G., & Ward, R. (2001). The evolution of emergency management in America: From a painful past to a promising but uncertain future. In A. Farazmand (Ed.), *Handbook of crisis and emergency management*. New York: Marcel Dekker.
Seidman, H. (1998). *Politics, position, and power: The dynamics of federal organizations* (5th ed.). New York: Oxford University Press.
Skertich, J., & Comfort. (2012). A bad time for disaster: Economic stress and disaster resilience. *Administration and Society, 45*, 2.
Stephens, H. W., & Grant, G. O. (2001). A new use for an old model: Continuity of government as a framework for local emergency managers. In A. Farazmand (Ed.), Handbook of crisis and emergency management. New York: Marcel Dekker.
Stern, E. K. (2009). Crisis navigation: Lessons from history for the crisis manager in chief. *Governance: An International Journal of Policy, Administration, and Institutions, 22*(2), 191.
Tierney, K. (2007). Recent developments in U.S. homeland security policies and their implications for the management of extreme events. In H. Rodríguez, E. L. Quarantelli, & R. R. Dynes (Eds.), *Handbook of disaster research*. New York: Springer.
Tierney, K., Lindell, M. K., & Perry, R. W. (2001). *Facing the unexpected: Disaster preparedness and response in the United States*. Washington, DC: Joseph Henry Press.
Voorhees, W. R. (2008). New Yorkers respond to the World Trade Center attack: An anatomy of an emergent volunteer organization. *Journal of Contingencies & Crisis Management, 14*(1), 3–13.
Wachtendorf, T. (2005). Suggestions for Canadian inter-organizational collaboration. *Emergency Management Canada.*
Waugh Jr, W., & Streib G. (2006). Collaboration and leadership for effective emergency management. *Public Administration Review.* December: Special Issue.
Waugh, W., Jr., & Tierney, K. (Eds.). (2007). *Emergency management: Principles and practice for local government* (2nd ed.). Washington, DC: International City Managers Association.
Wenger, D., Quarantelli, E. L., & Dynes, R. R. (1986). *Disaster analysis: Local emergency management offices and arrangements*. Newark: University of Delware, DRC.
Williams, B. H. (1956). *Natural resources (Emergency management of the national economy).* Economic Potential Branch, Industrial College of the Armed Forces.
Wilson, J. Q. (1989). *Bureaucracy: What government agencies do and why they do it*. New York: Basic Books.
Zurcher, L. (1968). Social psychological functions of ephemeral roles: A disaster work crew. *Human Organization, 27*, 281–297.

Johanu Botha PhD, MPA, is a Disaster Management Specialist with the Government of Manitoba. He has led initiatives in health emergency management and advised the Office of the Clerk of the Executive Council on business continuity strategies for central government. His doctoral research, for which he was awarded the Social Sciences and Humanities Research Council of Canada's Joseph-Armand Bombardier Award, was the first comprehensive study on the nature of collaboration across levels of government and the military during domestic disaster response in Canada. Botha is an Army Officer in the Canadian Armed Forces (Reserves), has deployed domestically to fight floods, and runs Professional Development sessions for the University of Manitoba and Winnipeg's Master of Public Administration program.