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DOI: 10.1002/rhc3.12244

REVIEW ESSAY

RHCPP WILEY

A systematic review of 20 years of crisis and disaster research: Trends and progress

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Abstract

The field of crisis and disaster studies has proliferated over the past two decades. Attention is bound to grow further as the world negotiates the prolonged challenges of the Covid-19 pandemic. In this review, we provide an overview of the main foci, methods, and research designs employed in the crisis and disaster research fields in the period of 2001–2020. The review documents that the focus and methods used have not changed much over time. Single case studies and exploratory research prevail, the focus has shifted from preparedness to response, and methodological diversity is limited, but gradually increasing. Future challenges are to understand transboundary crisis management and creeping crises. Advancing the field calls for our community to put more effort in drawing lessons beyond the single case to uncover comparable and universal patterns that connect between events or phases, which help to theorize the multifaceted nature of crisis and disaster management.

KEYWORDS

case study, crisis, disaster, future, literature review, methods, phases, trends

> "Crises provide a unique laboratory of social and political life (…) [and] perfect ground for multidisciplinary and interdisciplinary efforts" (Rosenthal & Kouzmin, 1993: 3, 8).

In 1993, Alexander Kouzmin and Uriel Rosenthal launched the *Journal of Contingencies and Crisis Management*. The launch of the journal marked an inflection point in the field of crisis management research. Long relegated to hidden niches in the fields of public administration, social psychology, and political science, the editors of this new journal conceptualized crisis as an interdisciplinary area of study in need of serious and sustained attention. Crises, the new editors intoned, "do not lend themselves to an easy science" (Rosenthal & Kouzmin, 1993, p. 10). And so it has proven.

Many crises and disasters followed the launch of the new journal, but it was the shock of 9/11 that underlined and sustained the relevance of this emerging field. Mainstream scholars discovered the field of crisis management seemingly overnight. A series of subsequent crises, disasters, and threats—Hurricane Katrina, the Indian Ocean tsunami, the financial crisis, various immigration crises, terrorist attacks, cyber security breaches, and climate change—have since solidified the relevance of the field and propelled its development. The initiation of the journal *Risk, Hazards and Crisis in Public Policy* (RHCCP) in 2010, was a logical next step in the development of the field.

In this article, we provide an overview of the main foci, methods, and research designs employed in the crisis and disaster research fields for our RHCPP readership. Over the past two decades, the field of crisis and disaster studies has proliferated. Its perhaps somewhat narrow focus on iconic accidents and disasters has widened to include the entire scope of crisis and disaster management, from preparedness to mitigation, response, and recovery. New subject matters have been taken up, such as disaster risk reduction, institutional and creeping crises, network governance, crisis communication, crisis informatics, and community resilience (Kuipers et al., 2019).

More specifically, we see two clear trends. First, we see a steady increase in the number of publications in key crisis and disaster management journals, with the average number of publications in some journals doubling in the last 5 years. Second, the number of academic articles with "crisis" or "disaster" in the title tripled in the main generic public administration journals over the past two decades, as compared to the two preceding decades.[1] The attention for our field is bound to grow further as the world negotiates the prolonged strains and challenges of the Covid-19 pandemic. The call for scientific insights into the effectiveness and legitimacy of crisis management strategies is loud. Academics are massively responding (rarely have we seen so many special issues and articles on one crisis).

While the attention for crises and disasters seems larger than ever, we note some challenges that deserve attention. Not surprising for a young field with many new contributors, we observe a sustained lack of consensus around the definition of crisis and disaster. Some claim that the absence of an agreed-up definition undermines the foundations our field (Kouzmin, 2008; Quarantelli, 1998, 2005; Roux-Dufort & Lalonde, 2013). We are not too worried, as definitions and key concepts vary across disciplines, even when studying seemingly similar phenomena (Shaluf & Said, 2003). We simply note that the terms crisis and disaster are often used interchangeably. They can refer to different types of events, which trigger different kinds of questions that require different research designs (Boin & 't Hart, 2007).

The diversity of conceptualizations across these related debates illustrates that we are dealing with diverging phenomena that have multiple manifestations (Roux-Dufort & Lalonde, 2013). A good starting point for finding common ground is to speak of a crisis when a community of people, an organization, town, or nation, perceives a serious threat to the basic structures or fundamental values and norms of their social system, which, under conditions of time pressure and uncertainty, demands critical decision-making (Rosenthal et al., 2001). This definition situates the inflection point of a crisis in a social system, but the crisis itself can both materialize

through the perception of a threat as well as a critical event. The focus on a social system compares reasonably well with definitions of disaster (Quarantelli, 2005), which differ in the sense that the event is typically related to a hazard agent that forms the source of damage (i.e., hurricane, flood, earthquake, or tsunami). In the tradition of disaster sociology, the event is generally defined as an inherently social phenomenon that emerges when a hazard agent impacts a social system with its own stratification and norms, which, in turn, defines its vulnerability (Perry, 2007; Quarantelli, 2005).

Looking beyond the much-discussed issue of concept clarity, a number of other issues might have a deeper influence on the validity and reliability of research findings. Our first concern emerges from the focus on specific disasters and crises. In the past 20 years, the focus has been on iconic disasters and crises such as 9/11, the Indian Ocean tsunami, Hurricane Katrina, the 2011 Great East Japan Earthquake (Fukushima), the Deep-Water Horizon oil spill, the Icelandic volcano ash cloud, and, recently, the global Covid-19 pandemic. Many journal issues hop from one critical event to another. Consequently, the single case study approach still seems the favored method of research (George & Bennett, 2005).

Such an event-based focus could limit our understanding of underlying processes and patterns between crises (Hällgren et al., 2018). Efforts to build major crisis case banks by the Swedish Centre for Crisis Management Research and Training (Crismart) at the Swedish National Defence University and the Moynihan Institute's Transboundary Crisis Management working group at Syracuse University, have resulted in many single case publications, and a number of comparative crisis research dissertations (Brändström, 2016; Deverell, 2010; Hansen, 2007; Nohrstedt, 2007; Svedin, 2008). Perhaps due to the considerable variation between the cases in terms of both content and depth, we see limited large N studies comparing observations from multiple crises across the Atlantic (for a notable exception, see Hermann & Dayton, 2009). This warrants the question whether we have made progress in accumulating knowledge, moving from single case studies to comparative case studies, and consequently from exploratory to explanatory studies.

Our second concern pertains to the methodologies employed to study crises and disasters. Disasters and crises are often studied in similar ways, with researchers engaging in on-site fieldwork through interviews and observations, or conducting retrospective analyses based on documentation. Already in 1994, Quarantelli (p. 2) expressed the methodological concern that "present day studies are not that much different from those undertaken these last 45 years. As has been said generally, major scientific advances require major rethinking, not just more studies. We must think through what we should do that is different in fundamental ways from what we are doing." In fact, Quarantelli's (1994, p. 15) observation that "there are only a handful of publications on general methodological issues in doing disaster research" still holds true today. This seems to be no different in crisis research. With many newcomers in the field, it is important to make up the balance. Have steps been taken in our field to broaden the methodological scope? Did new researchers to the field also introduce new methodologies and approaches?

Our third concern relates to the focus on specific phases of a crisis or disaster. The differentiation between mitigation, preparedness, response, and recovery (Alexander, 2002) has helped disaster researchers to systematize and codify research results (Bosher et al., 2021; Neal, 1997). At the same time, the field has also been criticized for its putative preference for some phases of crises over others. Rosenthal and Kouzmin (1993, p. 6), for instance, wrote that "the dominant idea has always been that preventive efforts should be the main focus of crisis management." In disaster studies, researchers have focused on criteria that enable an effective response (Dynes, 1994; Quarantelli, 1997). Yet, others have asked for insights into the incubation phase, the

dynamics around specific trigger events, or the lessons learned during recovery (Lettieri et al., 2009). This discussion invites a systematic inventory on what really is the main focus in this budding field. This is what we intend to do here.

Methodology

In this systematic review, we reflect on the above concerns by sorting through 20 years of crisis and disaster literature (from 2001 to 2020) and charting the steps that have been taken to identify important trends and developments. We selected this time period of 2001–2020, as it reflects the period when the field considerably opened up to new researchers after key events like 9/11 (2001), the Indian Ocean tsunami (2004), and Hurricane Katrina (2005). We want to offer this overview of the field now, as we witness a similar influx of new researchers to our field in the wake of the Covid-19 pandemic.

Dataset

To construct a database for our review, we consulted key journals in the field of crisis and disaster management research, as we feel that trends and new developments are best projected in the core journals of the field. We selected a subset of relevant journals by consulting the Scopus Citescore database of 2019 to get the latest metrics on the 5-year journal impact factor in combination with the Scopus Citescore, as presented in Table 1. We complemented the data from the metrics with our historical understanding of the relative importance of specific journals. Based on this assessment, we selected four journals for our review: *Disasters*, *Journal of Contingencies and Crisis Management*, *International Journal of Mass Emergencies and Disasters*, and *Risk, Hazards & Crisis in Public Policy*. These journals represent the top four with the largest impact in 2019, balance crisis and disaster research, and/or have a historically important position in crisis and disaster research. Furthermore, all four journals share a social science orientation, and have considerable overlap on specific themes important to disaster and crisis researchers (Kuipers et al., 2019).

Data collection and analysis

The dataset was created by making use of the reference manager Endnote X9 in combination with the database Web of Science, which was exported into Microsoft

TABLE 1 Journal metrics in crisis and disaster research in 2019

Journal	H5 index	H5 median	5-year impact factor	Scopus Citescore
Disasters	26	36	2.42	3.2
Journal of Contingencies and Crisis Management	23	40	1.95	3.3
International Journal of Mass Emergencies and Disasters	-	-	1.77	-
Risk, Hazards & Crisis in Public Policy	-	-	-	2.3

Excel. Data were gathered on all 1.839 research articles published between 2001 and 2020 in JCCM (471); RHCPP (215); Disasters (840); and IJMED (313). General and content-based information was retrieved from the articles to assist in the classification of the data. The general classifications included author, year of publication, title, type (article, editorial, book review, etc.), volume, number, and abstract. We excluded book reviews and obituaries from our dataset. The content classifications provided the essence of the review and specified the type of research, type of case study, methodology, disaster phase, general topic of an article, and type of hazard.

The lead author constructed the database and was aided by two research assistants in analyzing and categorizing the articles.[2] Based on the title, abstract, and (when necessary) the full text, we categorized the type of research in the article (exploratory, explanatory, or conceptual), and what type of case study was involved in the analysis (single or comparative). We identified the methodology used by looking at the abstract or methods section and discerned between interviews, observations, document-, content analysis, survey or statistics, experiments, or formal modeling. We also looked at the disaster phases that received most attention in the articles. The phase was identified when it was specifically mentioned, or if it became clear from the focus of the article since not all articles focus explicitly on a specific phase (mitigation, preparedness, response, recovery, or cross-phase). Finally, the general topic and the type of hazard were coded by making use of the classification previously employed by Kuipers and Welsh (2017).

To ensure the quality of coding and achieve a satisfactory level of intercoder reliability, the research team held weekly meetings in which random years were checked for accuracy, and specific articles were discussed that offered concerns during the classification process. In these meetings, discrepancies or disagreements with coding were discussed and solved. All articles were coded by at least two researchers to ensure reliability, as they were also checked for consistency by the lead author who scanned through all coded articles, titles, and/or abstracts. After the data collection was complete, the data set was analyzed using Microsoft Excel by specific inquiries into years and specific categories like type of case study or the methodology that was used. Several graphs were created and discussed with authors and research assistants to observe and clarify trends. To highlight key publications that represented these trends, we ranked the top-cited articles per journal in each analytical category. We did so by consulting the Web of Science database in combination with Google Scholar (since not all journals are fully indexed in WoS). We used the parameter of citations/year to also include more recent well-cited publications in our review. Together, this provided a good indication of trends and key publications in crisis and disaster studies.

FINDINGS

Single case studies prevail, comparative on the rise

When we look at the past two decades, the dominance of single case studies in both crisis and disaster studies prevails. Especially the disaster literature demonstrates a devoted preference for single case studies. If we zoom in on the underlying articles, we see a focus on a diverse set of disasters, such as Hurricane Katrina (Green et al., 2007; Kapucu, 2006; Messias et al., 2012), Hurricane Rita (Clukey, 2010), Hurricane Harvey (Grineski et al., 2020), the Kobe earthquake (Chang, 2010; Shaw & Goda, 2004), the 2010 Haiti earthquake (Altay & Labonte, 2014), floods in Bangladesh (Paul & Routray, 2010), Indian Ocean Tsunami (Telford & Cosgrave, 2007), Nepal Earthquake (Wolbers et al., 2016), and the

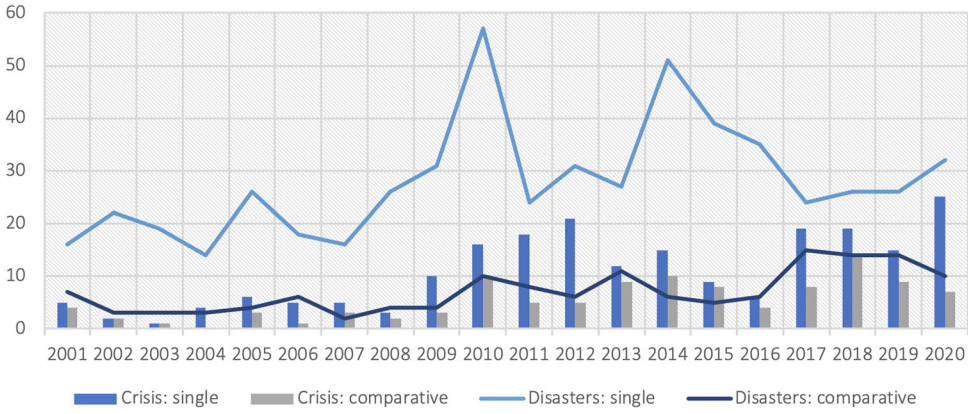

FIGURE 1 Type of case study research in crisis and disaster literature

Bam Earthquake in Iran (Mehregan et al., 2012). In addition, we see case studies of countries affected by multiple or prolonged hazards, such as flooding in Bangladesh (Alam & Collins, 2010), typhoons in the Philippines (Allen, 2006; Rodolfo & Siringan, 2006), and drought in Africa (Morton & Barton, 2002; Smucker & Wisner, 2008).

The two peaks of single case studies in disaster studies of 2010 and 2014 are partially caused by multiple special issues on humanitarian action (Hilhorst et al., 2010; Jacoby & James, 2010) in combination with a number of papers focusing on the legacy of hurricane Katrina (Cepeda et al., 2010; Clukey, 2010; LaJoie et al., 2010) and the 2011 Fukushima/East Japan Earthquake (Cho, 2014; Jung & Moro, 2014; Nogami & Yoshida, 2014). This corresponds with our initial assessment that iconic disasters still draw much of our attention (Figure 1).

Much cited (citations/year) comparative studies in disaster studies focus on, for instance, the role of social capital in disaster recovery (Nakagawa & Shaw, 2004), housing reconstruction (Wu & Lindell, 2004), damage and preparedness for tornadoes (Comstock & Mallonee, 2005), behavioral responses to earthquakes (Lindell et al., 2016), evacuation information needs (McCaffrey et al., 2013), cultural barriers to preparation (Ayeb-Karlsson et al., 2019), and humanitarian governance (Hilhorst et al., 2019).

In the crisis literature, the number of comparative case studies is increasing, approaching the levels of single case studies throughout the past 20 years. Here, comparative case studies focus on subjects like policy learning in the aftermath of crises (Albright & Crow, 2015; Clay et al., 2018), the capacity of civil security systems across different countries (Kuipers et al., 2015), social media crisis communication (Eriksson & Olsson, 2016), collaborative crisis management (Deverell et al., 2019; Fisk et al., 2019), or policy responses to media frenzies (Lodge & Hood, 2002). Well-cited single case studies focus on Hurricane Katrina (Corey & Deitch, 2011; Parker et al., 2009), Hurricane Rita (Lutz & Lindell, 2008), Three Mile Island (Hopkins, 2001), an oil industry accident (Crichton et al., 2005), the French heatwave (Lagadec, 2004), the California Electricity Crisis (Schulman et al., 2004), and the Queensland floods (Olsson, 2014).

Exploratory research prevails

Analogous to the single case study trend, exploratory research prevails in both fields and shows a slight upward trend. Our knowledge about disasters is mostly based on

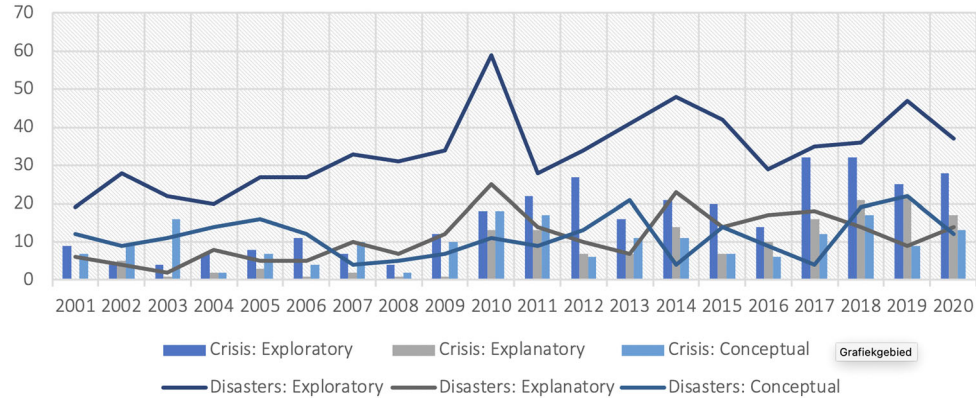

FIGURE 2 Type of research in crisis and disaster literature

exploratory studies, while in the crisis literature we see a steady increase in explanatory studies in the last decade (2011–2020). The number of conceptual studies remains relatively steady in both the crisis and disaster literatures throughout the years. In the crisis literature, we do witness a shift from the emphasis on conceptual work in the first decade (2001–2010), towards the dominance of exploratory and explanatory research more recently (2011–2020) (Figure 2).

Conceptual development

While conceptual papers do not constitute a large proportion of the total number of publications, they are amongst the top-cited papers in the field. The reason is that conceptual papers cover much-debated topics and instigate important theoretical developments. The top 10 most cited (citation/year) conceptual papers in disaster studies advance key topics, such as resilience (Manyena, 2006), vulnerability (Bankoff, 2001; Thomalla et al., 2006), social capital (Nakagawa & Shaw, 2004), disaster risk reduction and climate change (Mercer et al., 2010; Schipper & Pelling, 2006; Van Aalst, 2006), preparedness (Perry & Lindell, 2003), migration (Jacobsen & Landau, 2003) and the role of social media (Houston et al., 2015).

In crisis management, we witness a stark similarity in topics among the top 10 most cited conceptual papers a year, which cover resilience (Boin & McConnell, 2007; Comfort et al., 2001; Somers, 2009), social media (Gonzalez-Herrera & Smith, 2008; Reuter & Kaufhold, 2018; Veil et al., 2011), citizen response to disasters (Helsloot & Ruitenberg, 2004), disaster planning (McConnell & Drennan, 2006), policy change (Nohrstedt & Weible, 2010), crisis management as the management of exceptions (Roux-Dufort, 2007), and a typology of crises (Gundel, 2005). In addition, a number of articles reflect on the foundations of the field through taxonomies of crises (Kuipers & Welsh, 2017), or discuss types of crisis, such as the transboundary crisis (Boin, 2019) and the creeping crisis (Boin et al., 2020).

More methodological diversity

In the first lustrum (2001–2005), crisis research was largely based on secondary data collection through document analysis. In these years, the main focus was on crises such as 9/11 and terrorism (Perry & Lindell, 2003), anthrax (Day, 2003), and the French

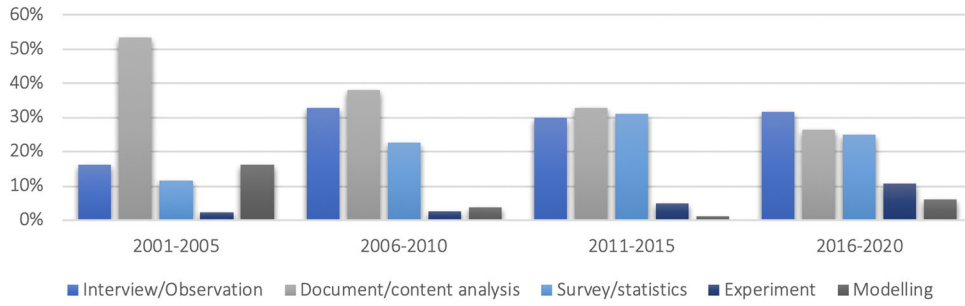

FIGURE 3 Methods in crisis literature

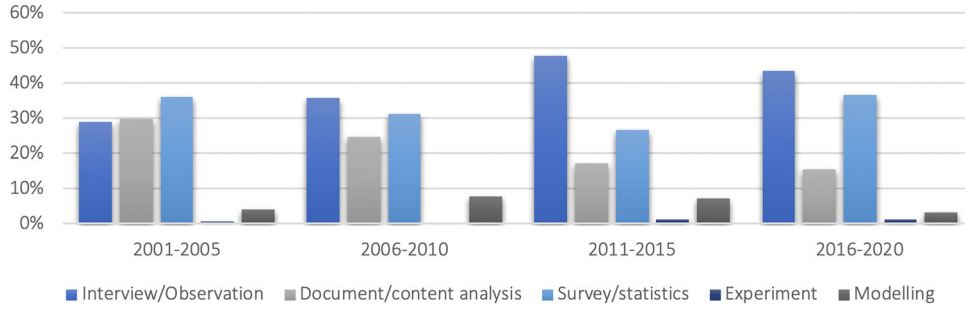

FIGURE 4 Methods in disaster literature

heat wave (Lagadec, 2004). Over the following years, we witnessed the rise of primary data collection and use through interviews and observations, complemented by surveys and statistics. Interestingly, the diversity of methods in crisis research is also increasing with more experimental studies (Helm & Tolsdorf, 2013; Pramanik et al., 2015; Schraagen et al., 2010). The last decade (2011–2020) shows a balance between interviews/observations, document/content analysis, and survey/statistics, as primary methods of research (Figure 3).

In disaster research, articles published in the first decade (2001–2010) evenly use interviews/observations, document analysis, and survey methodologies. A clear shift is visible in the second decade (2011–2020) towards interviews and observations, indicating the prominence of field research in the aftermath of disasters and conflict settings (Lu & Xu, 2015; Roll & Swenson, 2019; Van der Haar et al., 2013). The growth of primary data collection goes hand in hand with the decline of document analysis throughout the last decades. Interestingly, survey research remains relatively steady throughout the years, making up about a third of disaster methodologies, forming another major input for data collection in the wake of disasters (Chiu et al., 2002; Nakagawa & Shaw, 2004; Paul & Bhuiyan, 2010; Van Egmond et al., 2004). Compared to crisis research, however, there is a clear absence of experimental or modeling studies. The contrast with the growing methodological diversity in crisis research is stark (Figure 4).

Although there has been an increasing use of different methods in crisis and disaster research since Quarantelli's early observations on doing more of the same (1994), we note that there are still a limited number of methodological papers (Antonsen, 2009; Grais et al., 2006; Greathouse, 2010; Jacobsen & Landau, 2003; Rivera, 2019; Stephen & Downing, 2001).

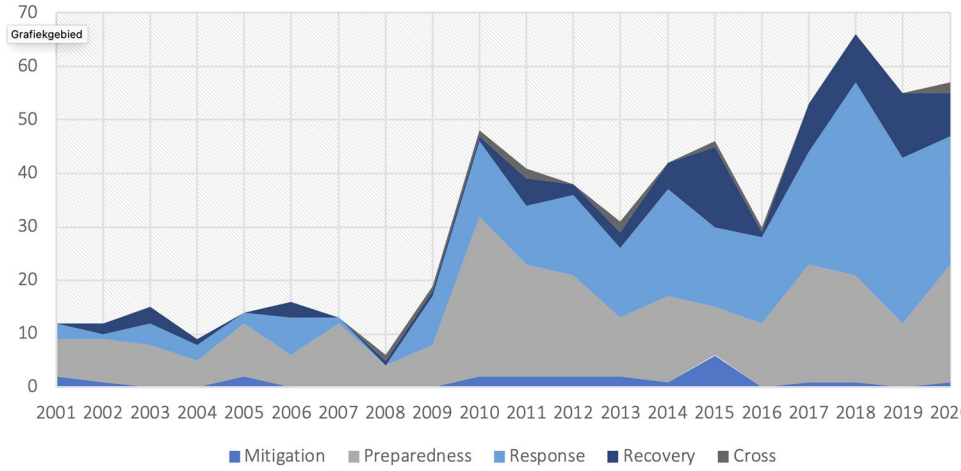

FIGURE 5 Focus on phases in crisis management literature

A focus on preparedness and response

When Rosenthal and Kouzmin (1993) claimed that we need to focus on preventing crises, it reflected the dominant idea in the first decade of our research period (2001–2010). In this decade, the focus was on topics such as preparation (Elsubbaugh et al., 2004; McConnell & Drennan, 2006), contingency planning (Balamir, 2002; Ten Brinke et al., 2010), homeland security (Reddick, 2007), vulnerabilities (Medd & Marvin, 2005), and preparing for critical infrastructure breakdowns (Boin & McConnell, 2007). In subsequent years, attention shifted from preparedness towards response (2011–2020). Since 2009, a growing number of studies began to focus on the response phase. This shift is visible in the research on incident command (Barton et al., 2015; Curnin et al., 2015; Wolbers & Boersma, 2013), collaborative networks (Larsson, 2017; Oscarsson, 2019, Therrien & Normandin, 2020), crisis communication (Olsson, 2014; Palttala et al., 2012), and, most recently, social media research (Reuter & Kaufhold, 2018; Wukich, 2019) (Figure 5).

In the past 5 years (2016–2020), we see renewed attention for recovery, pushed forward by interest in resilience in the aftermath of disasters such as hurricanes in the United States (Baker et al, 2018; Houston et al., 2017; Roque et al., 2020; Smith et al, 2018; Walsh et al., 2015), Nepal earthquake (Kumar, 2020) and the Great East Japan Earthquake (Ono, 2017), as well as institutional crises (Useem et al., 2017). In contrast, issues of mitigation received little attention in crisis research throughout the past 20 years (Joyner & Orgera, 2013; Sadiq, 2010).

Disaster studies are characterized by a dominant interest in the response phase in the first decade (2001–2010). This is followed by a steep increase in studies focusing on recovery and preparedness. The peak focus on recovery in 2010 is partly the result of a special issue focusing on reconstruction in conflict-affected countries (Jacoby & James, 2010), but mostly reflects the cumulation of a broader trend featuring recovery after iconic disasters, such as the Indian Ocean Tsunami, Hurricane Katrina, 9/11, the 2010 Haiti earthquake, and the 2005 Kashmir earthquake. The peak focus on the response phase in 2014 reflects a similar cumulation of attention by a range of studies covering recent iconic disasters, such as the Great East Japan Earthquake of 2011 and the 2010 Haiti earthquake. Overall, the dominance of the response phase reflects

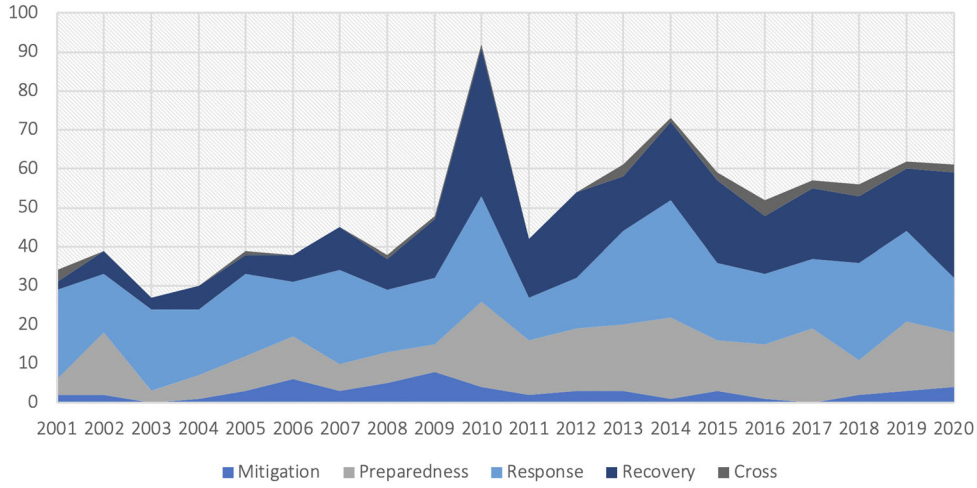

FIGURE 6 Focus on phases in disaster management literature

the perspective of researchers doing fieldwork in the direct aftermath of disasters. Analogous to crisis management research, the phase of mitigation receives little attention in disaster journals compared to other phases. Notable exceptions are studies on hazard mitigation (Evans-Cowley & Zimmerman Gough, 2007) and risk management (Christoplos et al., 2001; Luna, 2001).

Few studies seem to explicitly focus on multiple phases, or the transitions from one phase to the other. We seem to have gained fewer insights about the similarities and differences between the phases. Exceptions include studies comparing preparedness to response and recovery (Grineski et al., 2020), or the role of social media across different phases (Wukich, 2016). Overall, we can conclude that both disaster and crisis studies seem to focus on specific phases and have little attention for the progression of an event across different phases (Figure 6).

Looking back, moving forward: Reflections on future research

The field of crisis and disaster research has widened, offering a home to many new researchers. Our review documents that research interests have not widened in equal measure. The issues of study and the methods used have not changed all that much over time. Single case studies and exploratory research prevail, the focus has shifted from preparedness to response, and methodological diversity is limited, but gradually increasing. As the world of crises and disasters is changing rapidly—due to new technologies, climate change, and geopolitical dynamics—we may deliberate whether a change in research focus is needed.

The research agenda outlined by Rosenthal and Kouzmin back in 1993, when they launched their new journal, was based on the premonition that new crisis dynamics required a fresh research agenda. They explicitly called for a comparative focus, multidisciplinarity, and attention for what they called "compound" crises. While we do witness an influx of researchers from various social science disciplines after iconic events such as 9/11 and Hurricane Katrina, the comparative focus that could have stimulated the development of explanatory theories has lagged behind.

We have since seen just how "compounded" a modern crisis can become. The financial crisis, which started around 2008, illustrated the crisis spill-overs between private and public sectors. So-called "natech" disasters (natural hazards leading to infrastructural or industrial collapses), such as the Fukushima nuclear disaster and the devastating consequences of Hurricane Katrina, exemplified the complexity of old-fashioned crises thrusting into modern societies. We live in a world of global disinformation campaigns, transnational terrorism, and cyber security breaches that affect areas as divergent as patient safety (the Wannacry ransomware and the UK National Health Service in 2017), container trade (the Notpetya attack crippling the Danish logistics giant Maersk in 2019) and the integrity of the US 2016 presidential elections (Mueller, 2020).

These crises point to the importance of understanding the *transboundary* nature of crisis management. The banking crisis, cyberattacks, and natech disasters show that the causes of extreme events typically ignore natural or man-made boundaries. The consequences of these crises are also felt in widely dispersed geographic jurisdictions and multiple interconnected sectors of industry, involving authority and requiring capacity at different levels of governance, at varying time intervals.

Creating transboundary crisis management capacity has gained much attention throughout the year 2020 when the Covid-19 pandemic struck the world. The pandemic can teach us when and where resources were effectively pooled, shared, exchanged, or prioritized, and where not. Comparative research also instructs us what trade blocks, noncompliance, and disagreement on effective response measures can do to collective nonmedical interventions in combating a pandemic. It tells us about the role of experts, resources, epistemology, and ideology in sensemaking, early detection and decision-making, and the different effects thereof in different institutional settings. Comparison between countries teaches us why some were proactive and some reactive in the first phase, and how and why this sometimes was the other way around in the next phase of the pandemic. We should not think of the pandemic as a lesson in virology or epidemiology, if anything it has been a testbed for crisis governance. There is a rich harvest out there for crisis and disaster researchers alike (Boin et al., 2021).

The erosion of infrastructures and institutions that lay at the heart of some crises and disasters (e.g., Fukushima and Katrina) point to the importance of understanding the incubation phase of crises (Turner, 1976). We need to think about *creeping crises*: culminating risks, hiding in plain sight and years in the making. Societies too often are surprised by events that could have been noticed and addressed in an early stage. A creeping crisis concerns "a threat to widely shared societal values or life-sustaining systems that evolves over time and space, is foreshadowed by precursor events, subject to varying degrees of political and/or societal attention, and impartially or insufficiently addressed by authorities" (Boin et al., 2020, p. 122). Recognizing and dealing with creeping or slow-burning crises requires recognition of precursor events, recognition that variation in political or societal attention is problematic, and recognition that what authorities do to address the pending threat is often insufficient and/or incomprehensive. Future research efforts should therefore increasingly take on a processual approach and focus more on causes and incubation. It should study how deficiencies get addressed (or not) by comparing regional or national contexts where similar slow-burning threats lead to different levels of (policy) attention and reaction.

Here we see a clear link to disaster studies, where attention for the creeping nature of disasters has been taken up in the past two decades by understanding the progression of vulnerability (Blaikie et al., 2005) and the social roots of producing disaster and resilience (Tierney, 2020). In that respect, climate change forms the pressing issue of our time, which constitutes a creeping crisis of its own, steadily progressing partly under the radar, but also triggering more frequent extreme weather events (O'Brien et al., 2006; Van Aalst, 2006).

To understand the complicated progression and social implications of such disasters in the making, studies should take on a more integrated approach that looks across the different phases, closing the cycle from mitigation to preparedness, response, and recovery. Balancing out attention is key here, as it is alarming that there are so few studies focusing on the mitigation phase. A lot might be done to mitigate climate effects, but societies also have to become ready and increase their awareness for an imminent threat. Understanding the administrative and political struggle to foster enough resources to prepare for more frequent and more extreme weather events is critical. Equally important, however, is understanding the challenge of fostering transboundary collaboration in a complex multi-actor system (Ansell et al., 2010; Boin, 2019). As such, the evolution of transboundary disasters and the requirements for organizing an effective and legitimate response warrant a renewed research agenda that looks across different disaster phases and approaches complex issues of vulnerability, resilience, and risk reduction from a diverse set of methodologies.

Indeed, crisis and disaster studies would benefit from more diverse methodological approaches that combine exploratory and explanatory knowledge. Henry Quarantelli (1994, pp. 24–25) lamented that "we do not do a good job in the accumulation of knowledge" and that concepts are "taken for granted and never reexamined in any systematic way." We seem to be doing a good job in understanding the uniqueness of extreme events across the past two decades, but could harness and theorize underlying patterns and build evidence that connects across single occurrences. Much more steps could be taken to look across cases, or to areas affected by prolonged hazards, to reveal the hidden patterns that explain the choice for crisis strategies, why we were (un)prepared, and what lessons are learned and eventually adopted. Engaging in different methodologies might offer a fruitful way to innovate our thinking and knowledge accumulation on key topics. For instance, identifying stakeholder dynamics through network research, uncover (political) framing dynamics through discourse analysis, and setting up experimental studies that address behavioral dynamics all seem fruitful avenues to pursue.

While the steps that need to be taken are significant, we also need to be reminded that crises and disasters are difficult to study. There is still plenty of room to advance crisis and disaster research. For the future direction of *Risk, Hazards & Crisis in Public Policy*, we call for research that offers theoretical explanations and mechanisms of underlying risk, crisis, and disaster management processes. There is also a significant need for methodological advancement to detail, for instance, what it takes to engage in good fieldwork, or papers that translate (new) methods to the particularities of crisis and disaster research (see, e.g., Rivera & Leach, 2021). Of course, we will always welcome rich explorative accounts of iconic events that offer new insights. But advancing the field especially calls for our community to put more effort in drawing lessons beyond the single case to uncover comparable and universal patterns that help to theorize the multifaceted nature of crisis and disaster management.

ENDNOTES

[1] We checked these highly ranked journals: Public Administration, Public Administration Review, Journal of Public Administration Research and Theory, Governance, and Public Management Review. Search terms were CRISIS or DISASTER, and the search engine used was Web of Science. The results show 330 articles in 2020; 333 in 2010, 111 in 2000; and 124 in 1990.

[2] We would like to thank our research assistants and master students Crisis & Security Management Jet Boverhuis and Thijmen de Jong for their committed and valuable help in classifying the papers for this review.

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How to cite this article: Wolbers, Jeroen, Kuipers Sanneke, and Arjen Boin. 2021. "A systematic review of 20 years of crisis and disaster research: Trends and progress." *Risks Hazards Crisis Public Policy* 1–19.
https://doi.org/10.1002/rhc3.12234