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## **International Journal of Mass Emergencies and Disasters**

Official Journal of the International Sociological Association's Research Committee on  
the Sociology of Disasters (RC-39)

The *International Journal of Mass Emergencies and Disasters* is one of the world's leading journals of disaster research. Established in March 1983, it publishes internationally refereed articles of the highest scholarly standard. The *Journal* is published triennially during the months of March, August, and November. It is concerned with the social and behavioral aspects of relatively sudden collective stress situations typically referred to as disasters or mass emergencies. All aspects of the life history of such events, both actual and threatened, are examined including mitigation, preparedness, response, and recovery activities. These situations often are created by natural disaster agents, technological accidents, violent intergroup conflicts, shortages of vital resources, acute and chronic environmental threats, and other kinds of major hazards to life, health, property, well-being, and everyday routines. Although the focus of the *Journal* is on work dealing with the human and organizational aspects of mass emergencies, contributions concerning medical, biological, physical engineering, or other technical matters are acceptable if social and behavioral features of disasters are also prominently discussed.

The *Journal* addresses issues of theory, research, planning, and policy. The central purpose is publication of results of scientific research, theoretical and policy studies, and scholarly accounts of such events as floods and earthquakes, explosions and massive fires, disorderly crowds and riots, energy cut-offs and power blackouts, toxic chemical poisonings and nuclear radiation exposures, and similar types of crisis-generating situations. Its audience includes specialists within various areas of research and teaching plus people working in the field who are responsible for mitigation, preparedness, response, or recovery actions. While each issue of the *Journal* typically deals with a variety of relevant topics, special issues on particular subjects are published whenever possible to bring together a set of articles on a specific problem area. Since the *Journal* is intended to provide an international forum, contributions from and about all sections of the world are encouraged. Priority is given to those writing with cross-cultural data or implications. The *Journal* has five sections, although not all of these appear in any single issue:

- **Research and Theoretical Articles:** Empirical and scholarly studies reflecting the central concerns of the *Journal*.
- **Book and Film Reviews:** Critical examinations of the written and visual literature on disasters and mass emergencies.
- **Editorial Commentaries:** Brief overviews by *Journal* editors and special-issue editors placing the material in a given issue in the larger context of the state of the field.
- **The Critic's Corner:** An open page presenting controversial issues and personal opinions by invited and volunteer authors.
- **Presidential Address or Comments:** Thoughts, comments or summary statements of current events, policy statements, or guidance and expectations for future hazards and disaster research from the President of ISA RC39.

## INTERNATIONAL JOURNAL OF MASS EMERGENCIES AND DISASTERS

We are delighted to officially announce that the *International Journal of Mass Emergencies and Disasters (IJMED)* has joined SAGE Publishing's family of journals and will be relaunched in the spring of 2023! Created in 1983 by members of the International Sociological Association's Research Committee on the Sociology of Disasters (RC-39), *IJMED* has a long and distinguished history as one of the world's oldest disaster science journals. The journal will continue to publish empirically rigorous articles addressing issues of theory, research, planning, policy, multiple dimensions of risk, hazards, emergency and disaster prevention and mitigation, preparedness, response, and recovery. In addition, we will now be fully indexed and current, future, and importantly, back issues will now be fully searchable online.

The importance of interdisciplinary approaches is increasingly recognized as critical to addressing the complex interactions between and among humans/social systems, changing hazard profiles associated with climate change, and the built environment. Therefore, with its relaunch, *IJMED* seeks to expand and encourage both disciplinary and interdisciplinary research from not only the social, behavioral, and economic sciences, and emergency management, but also engineering, disaster and environmental sciences, and related disciplines.

ISA members will have full access to the journal through the SAGE Sociology Collection. This is a repository of approximately 100 journals that members have full-text access to with a current membership. As part of our relaunch, SAGE has provided a free access period to the journal from the journal website until April 5, 2023.

With this relaunch, we hope you will:

- further explore the relaunching of the *International Journal of Mass Emergencies and Disasters* with SAGE (<https://us.sagepub.com/en-us/nam/international-journal-of-mass-emergencies-disasters/journal203777>),
- review the journal's revised Aims and Scope (<https://us.sagepub.com/en-us/nam/international-journal-of-mass-emergencies-disasters/journal203777#aims-and-scope>),
- meet the editorial team (<https://us.sagepub.com/en-us/nam/international-journal-of-mass-emergencies-disasters/journal203777#editorial-board>), and
- consider opportunities for publishing (<https://us.sagepub.com/en-us/nam/international-journal-of-mass-emergencies-disasters/journal203777#submission-guidelines>) and participating as a reviewer or team member as we seek to continue *IJMED*'s forty years of excellence.

The new editorial team will be led by **Dr. Walter Gillis Peacock** and can be contacted at: [ijmed.editors@gmail.com](mailto:ijmed.editors@gmail.com).

Lastly, the International Sociological Association's Research Committee on the Sociology of Disasters (RC-39) acknowledges with grateful appreciation facilities and assistance provided by the University of Delaware, Eastern Illinois University, University of Colorado-Colorado Springs, University of North Texas, and Jacksonville State University.

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**The Disaster Cycle:  
An *IJMED* and *Research Counts* Collaborative Special Issue**

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# INTERNATIONAL JOURNAL OF MASS EMERGENCIES AND DISASTERS

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**The Disaster Cycle: An Introduction to the Special Issue**

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Researchers and emergency managers have long used the disaster cycle as a conceptual tool to organize activities associated with each overlapping phase of a disaster. This special issue includes articles focused on the preparedness, emergency response, impacts, recovery, mitigation, and resilience phases of the disaster cycle. The goal of the collection is to summarize key findings from recently published scientific research for a broader audience.

This special issue grew out of a longstanding collaboration between the International Sociological Association (ISA) Research Committee on the Sociology of Disasters (RC-39) and the Natural Hazards Center at the University of Colorado Boulder. In September 2017, Dr. Shih-Kai (Sky) Huang and Dr. Tristan Wu became co-editors of RC-39's flagship journal, the *International Journal of Mass Emergencies and Disasters (IJMED)*. That same year, the Natural Hazards Center established the *Research Counts* series, which

is dedicated to sharing actionable research with emergency managers and others committed to mitigating harm from disasters. Since then, the *IJMED* editors have worked closely with the Natural Hazards Center team to solicit submissions to the journal, to spotlight new collections, and now, to publish this special issue on the Disaster Cycle in both *IJMED* and through the *Research Counts* series<sup>1</sup>.

In addition to summarizing the content in the special collection, this introduction celebrates the progress made under the editorial leadership of Dr. Huang and Dr. Wu. This is the last edition of *IJMED* that will be published by the RC-39, as the journal transitions to SAGE Publishing. Fortunately, this is not an end, but instead represents a new beginning. In the spring of 2023, *IJMED* will be relaunched with an expanded editorial team and an even more interdisciplinary focus through a revision to the journal's aims and scope.

### THE DISASTER CYCLE SPECIAL ISSUE

This special issue includes 10 brief contributions that were published as full-length research articles during Dr. Huang and Dr. Wu's tenure as co-editors of *IJMED*. These articles were selected for inclusion because of the strength of the research and their potential for broader impacts. As noted, several phases of the disaster cycle are represented in this collection. The pieces address multiple hazards such as tsunamis, floods, earthquakes, and hurricanes that have affected communities in Canada, Chile, China, Finland, New Zealand, and the U.S, as well as the global COVID-19 pandemic. They also highlight the work of authors who bring expertise from a wide range of disciplines. The original articles upon which the special issue contributions are based ranged between 7,000 to 10,000 words.

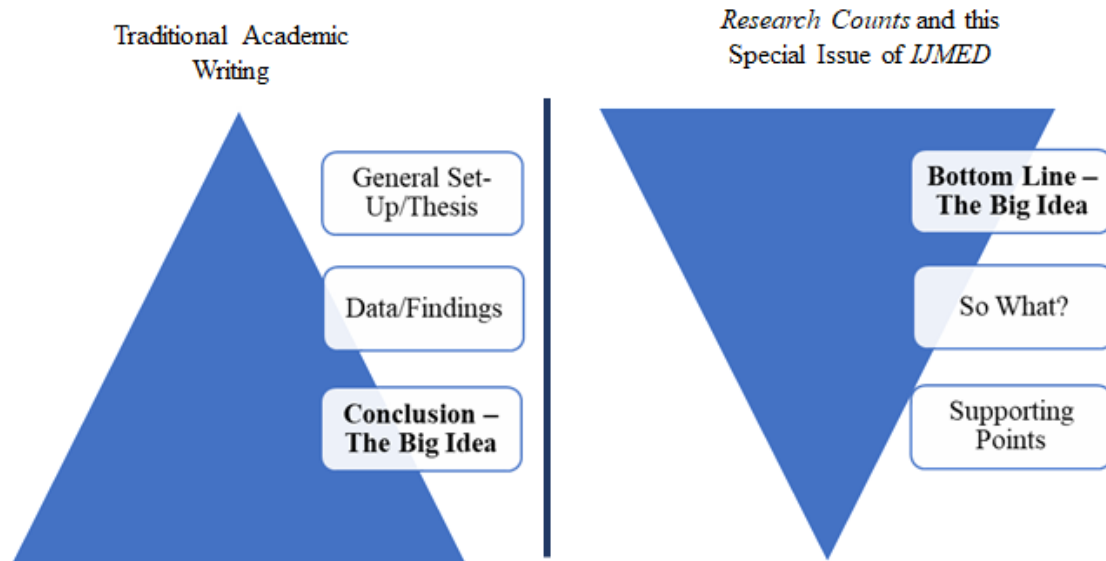
Freelance science journalist and editor, Zach Zorich, and science and travel writer, Laurie J. Schmidt, distilled the articles into 700 to 900 word pieces that appear in this issue of *IJMED*. This entire collection will also be published for free online via the Natural Hazards Center website to encourage a broader readership and reduce barriers to access.

Often, important research findings do not reach those who need the information most—such as emergency managers, public health practitioners, policy makers, and journalists—because academic journals may only be accessible through university libraries or via paid subscription websites. Similarly, key findings are often buried in lengthy academic articles, making it difficult for time-strapped practitioners to find the information that matters most to their daily work.

With this special issue of *IJMED*, as with all *Research Counts* publications, we look to reshape traditional ways of presenting academic information. Here, we have adopted the vision and approach that informs *Research Counts*, which is more journalistic than academic (Peek 2017). The pieces are written in jargon-free, non-academic language. Sentences and paragraphs are brief, and authors use the active voice throughout. In addition, each piece begins with one big lesson, insight, finding, or idea that readers can take away from the article. Of course, most research contains more than one big idea, but here we have tried to focus on what is most important for a wider audience to know (see Figure 1).

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<sup>1</sup> Available at: [hazards.colorado.edu/news/research-counts/special-collection/disaster-cycle](https://hazards.colorado.edu/news/research-counts/special-collection/disaster-cycle)



**Figure 1. A Comparison of Approaches to Presenting Research Findings**

By flipping the traditional academic approach to writing in this way, this collection brings already published research findings to the fore. We hope that the contributions can serve as inspiration for future scholarly translation and dissemination efforts for academics, while also providing key information to community leaders, government officials, funders, and other decision makers.

### **A LONGSTANDING LEGACY AND NEW BEGINNINGS FOR *IJMED***

For 40 years, *IJMED* has stood as one of the longest-running and most highly respected disaster science journals in the world. Between September 2017 and March 2023, Dr. Huang and Dr. Wu led *IJMED* with great distinction publishing 16 issues of the journal (10 regular issues and 6 special issues) containing 103 original research articles and 13 book reviews. Although *IJMED* was never formally indexed, Dr. Huang and Dr. Wu estimate that by 2021, the 5-year impact factor was 2.03, placing it among some of the most highly ranked journals in the hazards and disaster field.

These numbers tell a story about the journal's importance under Dr. Huang and Dr. Wu's co-editorship. But what the numbers do not capture is how the scholarship has helped to influence more just and equitable policies and practices in the hazards and disaster field. Further, no metric could fully characterize the editorial principles, vigor, and kindness that these two talented scholars have brought to the academic enterprise. Sky and Tristan, as they are fondly known to friends and colleagues, have been collaborators since they attended graduate school at Texas A&M University, where they also served as editorial assistants to the then editor of *IJMED*, Dr. Michael K. Lindell. When the editorship for the journal was unexpectedly vacated in 2017, Sky and Tristan, who were both assistant professors at the time, generously agreed to step in.

During their tenure as co-editors, *IJMED* became even more multi-disciplinary and global in its focus. Although they are still relatively early in their own careers, Sky and Tristan are dedicated and generous mentors, and they have encouraged graduate students and other early career scholars to publish in the journal. The contributions published under their leadership have been written by a diverse cadre of researchers who have produced theoretically and methodologically rich articles.

For this introduction, we asked Tristan and Sky to reflect upon their time as co-editors. As their words illustrate, their core values and passion guided their editorial work, and they are clearly committed to ensuring that the lessons they have learned are passed on to others:

We were honored to have had the incredible opportunity to shape our field through our work as journal editors. Our top priority was always to create a welcoming environment that would encourage transparent and productive communication among readers, authors, reviewers, and editors. Furthermore, we were committed from the outset to engaging scholars from underdeveloped and developing countries to promote a safer world. Yes, the tasks were time consuming and the responsibilities overwhelming at times, but we viewed it as an inspirational challenge. We recognize that we have been entrusted with a great responsibility passed down to us by giants in our field. With enthusiasm and passion, we embraced this opportunity and will now work to pass the lessons we learned on to the next editorial team. Our hope is that *IJMED* will continue to push the boundaries of scientific knowledge and innovation in disaster research, while continuing to be a welcoming space for the rigorous exchange of diverse ideas.

– Dr. Sky Huang and Dr. Tristan Wu, *IJMED* Co-Editors, 2017-2023

On behalf of all who have benefitted from Tristan and Sky's leadership with the journal, we offer sincere thanks. In addition, we are grateful to the editorial team, student assistants, reviewers, authors, and journal subscribers who have helped make this journal possible. Tristan and Sky have agreed to remain part of the editorial board as *IJMED* transitions to SAGE Publications, and the future feels bright as they continue to shed considerable light on the field.

Thank you for taking the time to read this special issue. We hope you find inspiration in this effort to move from scholarly knowledge into actions that reduce the loss and suffering from disasters.

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International Journal of Mass Emergencies and Disasters  
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## PREPAREDNESS

### Strategies for Promoting Disaster Preparedness in Childcare Centers

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**Keywords:** Children, disaster preparedness, vulnerability, childcare centers.

Large numbers of infants, toddlers, and preschool-age children spend their days in childcare centers. In turn, the youngest members of society depend on adult caregivers to make evacuation decisions, secure shelter, and assist in reuniting child survivors with their parents should a disaster occur. While previous research has focused on preparedness (Tipler et al. 2016) and disaster risk reduction in schools (Lai et al. 2016), less attention has been given to organizational preparedness in childcare settings.

This research examined how New Zealand (Aotearoa) addresses disaster preparedness among childcare facilities. New Zealand was selected for this case study due to its history of innovative preparedness and its commitment to learning from past disasters. The nation is also vulnerable to a variety of hazards (UNDRR 2020), including earthquakes, volcanic eruptions, floods, and tsunamis. In 2016, the Kaikoura earthquake triggered a tsunami and landslides, causing severe damage on both the South Island and the city of Wellington on the North Island. In 2020 and 2021, all of New Zealand dealt with significant flooding.

During my time in New Zealand as a Fulbright Fellow, I conducted interviews in person in and around the city of Wellington, a region that experiences significant risk to multiple hazards. Participants included individuals working directly in childcare (including center directors); those who study, write, or disseminate policies; and those who conduct preparedness training for regional government. Interviews were augmented by observations done during visits to four childcare centers.

Data analysis provided valuable insights into the perspectives of those working directly in the childcare field and of those charged with developing and implementing policy. These insights highlighted the most essential aspects of childcare center emergency preparedness and five factors that help or hinder preparedness and policy implementation.

## **REGULATION CLARITY**

The first key element of effective preparedness is clear regulations. Policies that are ambiguous can be a barrier to preparedness, recovery, and the reopening of childcare centers after a disaster. Teachers, parents, center directors, and researchers all expressed their concerns about vague regulations. They want to be informed about what the law requires and what the best practices are.

Because childcare centers are classified as businesses, they are not under the jurisdiction of New Zealand's Ministry of Education; therefore, they do not follow the same guidelines as schools. However, the centers do receive a guidance document (Ministry of Civil Defence & Emergency Management 2011) from the national emergency management agency to help with planning and developing an emergency plan. While interviewees had a range of views about the right amount of regulation of childcare centers, all agreed that policy clarity was essential. One interviewee, the director of a childcare center, suggested the sharing of best practices among childcare centers in a specific region, which would help disseminate information based on the hazards in that area.

## **COMMUNICATION**

Informal and formal communication between government agencies and childcare centers is especially important, as it relates directly to regulation clarity. Regional government training is seen as particularly useful in gaining knowledge about how to prepare childcare centers.

Center directors and administrators also need to communicate clearly with their staff, especially about various disaster scenarios and expectations surrounding staff members' abilities to remain at the center during and after a disaster. Communication among childcare centers is important as well, as it is helpful for staff to learn how other centers are preparing. Effective communication between childcare centers and families is critical to having effective and clear reunification plans for parents and children in the aftermath of a disaster. Parents may take unnecessary risks trying to get to childcare centers; indeed, at training, they stressed to the centers how unclear communication with parents, and sometimes a lack of trust, has led to the loss of lives in disasters in other countries.

## **LEADERSHIP**

The role of leadership emerged as a key component of preparedness in childcare centers. The centers that appear to be the most prepared are those where the leaders are effective communicators who are respected by their staff. These directors make sure their center has an evacuation plan and that the staff is informed of these plans. Trust between staff and families is also key to effective leadership. When parents have confidence in a center director's leadership, they also feel reassured about their child's safety.

## TRAINING

Research has shown that childcare center teachers and schools want more training (A. Johnson et al. 2014) to help them gain the skills to prepare for and respond to disasters. This includes not only training within their own centers, but also with other centers, where they can share their experiences from previous disasters. The training sessions observed as part of this study revealed how participants were able to think through various scenarios together in a relaxed environment. Many attendees acknowledged the importance of reunification drills but shared that they had never been involved in one.

## NETWORKS

The final theme that emerged in this research regarding effective preparedness was related to networks. Businesses, residents, and families located in the vicinity of a childcare center (Pineiro and Hokugo 2019) can be an integral part of preparedness. In the past, local businesses have allowed employees to leave after an earthquake to assist the childcare with evacuation. Others, such as hotels, have provided backup evacuation space following a disaster. In addition, tight-knit Māori communities can assist with preparedness by offering communal spaces, such as meeting houses. New Zealand researchers have found that Māori community-led disaster management practices (Kenney and Phibbs 2015) are often collaborative and informed by strong cultural values.

Adequate preparedness in childcare settings helps ensure physical and emotional safety for children, their families, and those who work in the childcare sector. By implementing policies and practices that address the above obstacles, childcare centers can be better prepared for future disasters.

## Notes

This article was prepared by science and travel writer, Laurie J. Schmidt. It is based upon the following publication: Fothergill, Alice. 2021. "Childcare Centers and Disaster Preparedness: Lessons from New Zealand." *International Journal of Mass Emergencies and Disasters* 39(3): 434-64.

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### **Climbing the Ladder Toward Security: Co-Creating a Safer Finland**

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**Keywords:** Co-Creation, safety, security, Finland.

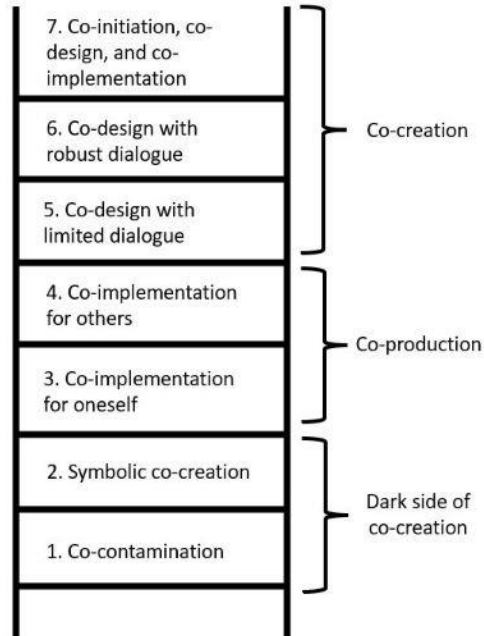
As disaster responses become more complex, there is a greater need to coordinate the activities of public authorities with business operators, non-governmental organizations (NGOs), and citizen volunteers. To achieve the goal of improving disaster response, we recommend a process of “co-creation” where each of these groups is involved in planning disaster responses, and the roles of each group are clearly defined. This approach allows public authorities to take advantage of the experiences, resources, and ideas of these diverse groups. In turn, it allows groups outside of traditional government response structures the opportunity to contribute.

The approach described here is being taken in Finland where it has been used to develop a comprehensive Security Strategy for Society (The Security Committee 2017). In response to this new approach, we organized eight regional forums involving a total of 188 people from the public sector and NGOs to discuss how co-creation occurs in planning safety and security functions and to discover what challenges are not being met.

### **TAKING STEPS TOWARD SECURITY AND SAFETY**

We use a model developed by Torfing, Sørensen, and Røiseland called the Ladder of Co-Creation (Torfing, Sørensen, and Røiseland 2019) to provide a framework for our findings (Figure 1.). This is a highly useful model, but Torfing and colleagues’ ladder does

not address the negative aspects of co-creation. Therefore, we added a rung to the beginning of the ladder to account for what we refer to as co-contamination, which is anything that is added to the co-creation process that is harmful or undesirable. Co-contamination can occur, for example, between spontaneous volunteers and established professional emergency management agencies. These different groups may have competing priorities or conflicting ideologies that stymie collaborative processes. We added a second rung for co-creation processes that are symbolic and do not actually consider the input of citizen groups.



Adapted from: Torfing et al. 2019

**Figure 1. The Ladder of Co-Creation**

We next turn to the widely used concept of co-production, which is understood as a limited case of co-creation, highlighting the aspect of co-implementation. Thus, the third step on the ladder involves empowering citizens to enhance their own capacities to respond to disasters. Enhancing one’s capacity to respond to disaster simultaneously encourages co-implementation for oneself. This can take the form of developing family emergency plans, having a home emergency supply kit, and individuals taking part in training programs such as first aid courses. Of course, these “individual actions” can have strong co-benefits for families and even entire communities.

This leads to the fourth rung of the ladder, co-implementation for others, which entails creating value for others by performing volunteer work carried out in cooperation with public authorities. Some examples of this are volunteer firefighter organizations or the Red Cross and Red Crescent organizations.

The fifth rung occurs when these groups or individuals provide input in designing new tasks and solutions. This takes place in co-design processes with limited dialogue. Examples include focus groups, interviews, written consultations, and public hearings.

While the fifth level is limited in its dialogue, being at its worst only one-way communication—public actors wanting to obtain feedback from citizens and other stakeholders—the highest rungs on the ladder aim for genuine two-way communication where joint solutions are sought. Co-creation begins with co-design processes with limited dialogue before evolving into co-design with robust dialogue, like deliberation. Examples include service design and deliberative security cafés (Puustinen, Raisio, and Valtonen 2020).

On the final rung of the ladder, the approach is most comprehensive and can extend as far as joint agenda-setting and problem definition. In the spirit of collaborative innovation, a variety of societal actors are then taking part in the co-initiation, co-design, and co-implementation of safety and security services. An example of this stage is comprehensive safety and security clusters (City of Tampere n.d.).

### **ISSUES WITH CO-CREATING A SAFER SOCIETY**

Some problems revealed by our interviews were as simple as members of the public sector scheduling meetings and exercises at times when volunteers were at work making it difficult for them to participate in planning and training. Another problem is that public authorities are concentrated in urban population centers, which leaves people living in rural areas with a greater need for self-sufficiency. A third problem was that the bureaucracy and level of qualification needed to become a volunteer for some organizations may discourage people from participating.

The latter issue emerged with the Finnish Lifeboat Institution, a volunteer organization that has had a long-standing cooperative relationship with the Finnish Coast Guard. Volunteer qualifications were seen as being nearly that of a professional, which led to concern that people would not commit themselves to acting in the long term. It is worth noting, though, that in other ways, the Finnish Lifeboat Institution provides a good model of how public authorities should interact with NGOs. The Coast Guard conducts regular training exercises and audits of the volunteers so that they know exactly what their capabilities are and how to use them in an emergency. Such training and working together was mentioned as the best way to create effective partnerships between public authorities, the volunteer sector, and the private sector.

The rise of social media also presented problems according to our research participants. “Pop-up volunteering” poses a logistical challenge for public authorities and NGOs. In some crises that received considerable media attention, groups of untrained volunteers would organize themselves on Facebook or another platform and show up to places where search operations were underway to form their own unofficial search parties. These volunteers’ goals sometimes ran counter to what emergency managers were trying to accomplish, and they ended up wasting time by searching areas that had already been covered or searching in a non-systematic fashion. This problem could be addressed by

creating a “bridge” between spontaneous volunteers and emergency service agencies. This bridge would ideally provide a clear set of responsibilities that could be handled by spontaneous volunteers and a way to organize them to accomplish those tasks.

### MOVING FORWARD IN FINLAND AND BEYOND

Further research is needed to understand the best way to make use of spontaneous volunteers. It would be worthwhile to investigate the options to include spontaneous volunteers in the co-creation process, preserving their innovation potential and adaptability, while also reducing their susceptibility to risk. The role of business operators was not part of this study, and more research is needed to fully understand how they may use their knowledge and resources to assist in emergency situations. We also suggest more research into the downsides of collaboration and co-creation, such as how co-contamination occurs and how that can be stopped or controlled. In the end, we are stronger when we work together, but we also must be smarter to achieve the best outcomes.

### Notes

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## EMERGENCY RESPONSE

### Avoiding the “Second Disaster” of Unwanted Donations

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The outpouring of charitable acts following a disaster can reveal humanity at its best. But this can also take the form of spontaneous acts of generosity that flood supply chains with unwanted or low-priority goods that slow down the distribution of supplies most needed by disaster survivors. The challenges of sorting and distributing donations as well as disposing of inappropriate donations can be so bad that it is sometimes referred to as the disaster that follows the disaster. To understand how to prevent this, we interviewed donors, donation collectors, and disaster relief distributors following Hurricane Sandy in 2012 and two tornadoes that struck near Oklahoma City in 2013. Our observations showed that misalignments between the needs and motivations of these groups lead to the “second disaster” caused by the influx of donations.

### A DISASTER DONATION DISCONNECT

Donors give to disaster relief for many reasons including that they receive tax breaks, that charitable giving feels good in an altruistic way, that people can gain social status by appearing generous, or because people have the desire to clean out unwanted items from their closets and basements. Donors, of course, also often are driven by a strong desire to connect with and “help” disaster survivors. Yet, donors’ desires often conflict with the needs of the organizations that distribute disaster aid.

Large non-governmental organizations (NGOs) such as the American Red Cross recommend monetary donations because they can be used to meet whatever needs disaster survivors might have, and they don't pose the logistical challenges that physical donations can create.

Many donors in our study, however, reported that they felt monetary donations (Red Cross 2023) were impersonal, so they were not able to feel a connection to the people harmed by the disasters. There was also a fear that monetary donations would be spent on overhead costs rather than directly helping survivors. One donor said, "You donate money, you have no idea where it's going, whom it's affecting." The interviewee continued, "But when you donate items, especially when you can see the delivery, you know that you've had an impact on those people's lives." Our interviews with donors showed that they prioritized their needs to feel useful, to have a connection with survivors, to come together as a community, and to get rid of unwanted material goods.

People who collect goods through donation drives also reported preferring material goods to donations of money. Some lacked the capacity to process financial donations or did not want the responsibility of being accountable for how the money might be spent. A desire for transparency in how donations are used led both donors and drive coordinators to prefer material donations or monetary donations that were earmarked for a specific purpose. Both can lead to the problem of having too many resources devoted to one type of need, such as water or diapers, and not enough to meet other needs.

The disconnect between donors and drive collectors on one hand and relief distributors and disaster survivors on the other led to situations where no one's needs were met. Without knowing what a disaster-stricken community might need, donations of material goods can quickly create problems. One example occurred at a small mobile home community in Oklahoma that turned into a dumping ground for donations. With no clear guidance on where to take their donations, the desire to connect with survivors transformed into a need for the donors to get rid of their goods. The mobile home community ended up with more diapers and hygiene supplies than they could possibly use but lacked access to financial contributions that could help them begin to rebuild their lives.

The desire to purge unwanted goods motivated donors in the aftermath of both Hurricane Sandy and the Oklahoma tornadoes. Many donors used the phrase "getting rid of" to describe their motivation for donating items. "Purging with a purpose" was a recurrent theme in our interviews, but it led to the collection of large amounts of inappropriate items including unwashed or worn-out clothing, and expired food. One volunteer in Oklahoma described the donations there as a "yard sale dump." A common statement by relief distributors about donated goods was, "if donors don't want them, we don't either."

While material donations are thought of as more desirable by donors and collectors because they give them more control and foster a sense of connection with disaster survivors, the lack of coordination between them and relief supply distributors can slow down high-priority goods from reaching survivors. A lack of communication between different parts of the disaster relief supply chain was a major contributor to this problem.

### **GIVING FOR THE GREATER GOOD**

We recommend that disaster organizations should continue to explain why monetary donations are preferable to material donations. Testimonials by disaster survivors saying how monetary donations benefited their communities may provide a way for donors to feel a greater connection to them and to further understand the importance of sending funding instead of physical supplies. Another possible solution is to encourage donations of gift cards, which can be easily transported while also giving the donor a measure of control over how their donation is used. Ultimately, all actors in the disaster relief supply chain need to be included in a conversation with disaster survivors about what an affected community's real needs are, and they need to be empowered to create an effective supply chain strategy to meet their immediate needs.

#### **Notes**

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**Perceptions Drive Protective Actions During Influenza Outbreaks**

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According to the CDC, the annual impact of seasonal influenza (CDC 2023) in the U.S. is 9 to 41 million illnesses, 140,000 to 710,000 hospitalizations, and 12,000 to 52,000 deaths. Researchers have examined risk perceptions about influenza to identify ways that information sources can motivate people to take protective actions. However, few studies have looked at how people perceive characteristics of the stakeholders that serve as sources of information and protective action.



## **UNDERSTANDING PROTECTIVE ACTIONS DURING INFLUENZA OUTBREAKS**

The Protective Action Decision Model (PADM) proposed by Lindell and Perry (2004; 2012) identified three perceived stakeholder characteristics that may affect people's adoption of protective action recommendations (PARs): expertise, trustworthiness, and protection responsibility. In this study, we compared perceptions of stakeholder characteristics among respondents in the United States and China to understand whether these perceptions are related to protective actions against influenza.

During the summer of 2013, avian influenza A (H7N9) infected 137 people and caused 45 deaths in China. Following this outbreak, the University of Science and Technology of China distributed 1,375 questionnaires to residents in the Chinese province of Anhui to assess their responses to the health threat. Of these, 762 questionnaires were collected and used for analysis.

The following year, the Hazard Reduction and Recovery Center at Texas A&M University mailed questionnaires to households in Bryan-College Station, Texas, to evaluate residents' reactions to seasonal influenza. Of the 1,000 randomly selected households, 405 usable questionnaires were returned.

Both surveys assessed perceptions of the same stakeholder types: health authorities, news media, the internet, social media, peers, and immediate families. Respondents were asked to rate each stakeholder type on their expertise, trustworthiness, and protection responsibility (i.e., how much responsibility they have for protecting people from the disease). Respondents were also asked whether they were sick during the H7N9 outbreak (Anhui) or during the previous flu season (Texas) and whether they had taken specific protective actions during these outbreaks.

### **POWER, PERCEPTIONS, AND PROTECTIVE ACTIONS**

China and the United States provide an interesting comparison because the two nations are significantly different in terms of cultural power distance and individualism (Hofstede 2001). Power distance refers to the way in which members of a society view the hierarchy of people in power versus subordinates. In high power-distance cultures, lower-ranking individuals tend to defer to power and accept their place in society. Low power-distance countries emphasize the individual and prioritize equality, which often results in subordinates questioning how things are done. On the Hofstede scale, China has a power distance score of 80, while the United States has a score of 40. The dimensions of power distance and individualism would be expected to influence people's perceptions of stakeholder characteristics.

Survey analysis showed that, with regard to expertise and trustworthiness, Texas respondents rated health professionals substantially higher than other stakeholders. Conversely, the Anhui respondents drew little distinction among the various stakeholders

and the three characteristics. In addition, Texas respondents rated local news media as substantially less credible than public health authorities, whereas the Anhui sample rated news media as roughly equivalent to other sources. This may be related to the fact that news media in China is linked much more closely with the national government than in the United States.

### **CULTURE, CREDIBILITY, AND STAKEHOLDER CHARACTERISTICS**

These differences in the Texas and Anhui samples support previous cross-national influenza research findings, which suggest that people in different countries can have very different perceptions of the same type of information sources. Therefore, those charged with communicating influenza risk must recognize that people in other countries can differ in their assessments of which sources are the most credible. In addition, countries should consider their own culture's social context when developing health risk communications that are based on research from other countries.

Second, in both samples, the ratings of stakeholder characteristics were consistently correlated with protective actions. This finding lends support to the PADM proposition that stakeholder characteristics influence protective actions. We can assume that when stakeholders are seen as having high levels of both expert knowledge and trustworthiness, people are likely to be more compliant with the protective actions they recommend. Therefore, messaging efforts related to influenza risk should not only communicate the protective actions people should take; they should also consider how to influence the perceptions of stakeholders.

Because public health officials are perceived to have a higher level of protection responsibility than other stakeholders, these organizations and agencies must work to maintain their credibility by actively managing any respiratory infectious disease outbreaks. They must also proactively ensure they are identified as the source of information when disseminating information via news media, the internet, and social media during a health emergency. This will maximize the likelihood that people will take the recommended protective actions and, ultimately, could save lives.

### **Notes**

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## IMPACTS

### **Looting or Community Solidarity? Reconciling Distorted Post-Hurricane Media Coverage**

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Hurricane Irma made landfall in the U.S. Virgin Islands (USVI) on September 6, 2017, followed by Hurricane Maria less than two weeks later. These two Category 5 hurricanes pummeled the islands, causing widespread damage to infrastructure, homes, and residents' livelihoods.

Delayed assistance to the islands compounded the devastation, and restoration of electricity and essential health services took two to three months. Although the logistics of reaching the islands presented operational challenges to government relief, the Federal Emergency Management Agency (FEMA) later acknowledged its failure to respond equitably to the U.S. territories compared to their mainland responses in Texas and Florida.

## FRAMING DISASTERS

In the aftermath of the storms, U.S. news media inundated audiences with reports of pervasive looting and home burglaries. Online news publications used headlines describing scenes with phrases such as “hungry residents in survival mode” and “looters armed with machetes.”

Contrary to these media reports, social science research has shown that in most cases a pro-social environment develops (Peek 2020), following disasters, during which community members engage in altruistic acts and collective coping methods. Field studies have shown that when looting does occur after a hurricane, it is often perpetrated by people looking for emergency survival needs. Yet, disaster criminologists have historically asserted that hurricanes and other disasters increase the likelihood of criminal activities in a community. Quantitative research has helped to shed light on more general patterns of crime in disasters (Zahran et al. 2009).

To add to the existing body of evidence, this study examined the credibility of claims regarding looting and home burglaries in the USVI following Hurricanes Irma and Maria. In addition, we investigated whether perceptions of post-hurricane looting, and burglary influenced household evacuation and sheltering behavior.

We conducted 68 qualitative interviews two months after Hurricane Maria made landfall in the USVI. Interviewees included 30 hurricane-impacted households, 20 business owners, 15 police officers, and 3 senior government officials. To supplement the interview data, we analyzed available secondary crime data from the Federal Bureau of Investigation (FBI) Uniform Crime Reporting Program (UCR) and the Virgin Islands Police Department (VIPD) on looting and burglary incidents during the time period 2010-2018. We used a rigorous ethical framework (Louis-Charles et al. 2020) to inform our fieldwork in the USVI. Our work revealed the following patterns.

### **LOOTING AND BURGLARIES VS. STRONG SOCIAL COHESION**

One-third of the households we interviewed believed there was looting because it had occurred in the relatively distant past after Hurricanes Hugo in 1989 and Marilyn in 1995. However, none had personally experienced a home burglary or knew of a neighbor who had experienced burglary or theft of any kind. In fact, many of the interviewees had at least one story to tell about neighbors helping them or assisting others after the hurricanes. According to one, “Even some of my anti-social neighbors became friendlier. It was neighbors helping neighbors.”

In addition, the police officers we interviewed did not know of any residential burglaries or business looting. They also indicated that criminal activities may have been curtailed due to the curfew and the governor’s activation of the Virgin Islands National Guard.

Our review of data from the FBI-UCR and VIPD showed a four percent increase in reported burglary incidents compared to the year before the hurricanes. The increase spiked during the four months after the storms’ landfall but was followed by a sharp decline in burglaries during months five to eight. Considering the delay in federal response immediately after the hurricane, we believe the momentary temporal increase in burglaries was likely related to survival-appropriating acts, which decreased as humanitarian assistance began to arrive.

### **BUSINESSES SECURED AND PROTECTED**

In St. Thomas, our interviews with business owners were focused on the area of Charlotte Amalie, a commercial area where luxury items are marketed to tourists. Although this is a high-risk area for theft-related crimes, interviewees revealed limited burglary concerns, and many attributed this to the strict curfew and the early presence of the National Guard.

In St. John, interviewees revealed no business looting in the main port area of Cruz Bay, although some stated that Coral Bay had experienced significant crime. However, a shop owner in Coral Bay said the burglary rumors were exaggerated and that “there were some kids misbehaving, but nothing serious occurred.”

### **FALSE ALARMS AND SHELTERING BEHAVIOR**

Fear of home burglary as well as fear of crime in mass shelters (Farmer 2020) can discourage people from evacuating or otherwise seeking potentially safe shelter outside the home in a hurricane. To examine whether the fear of intruders influenced decision-making, we included interview questions about how and why household members made the choice to shelter at home or evacuate.

Most of the people we spoke to (85 percent) were sheltered at home or with friends or family and did not seek public shelter. When asked why they did not go to a shelter, 90 percent stated they did not think the storm would be severe, especially because so many “false alarms” had occurred during previous hurricane seasons. Others said they could not reach the shelters because of road conditions. None of the respondents said their reason for not evacuating was due to fear of looting or home burglary.

### **FOCUSING ON HUMANITARIAN NEEDS AND COMMUNITY SOLIDARITY IN THE WAKE OF THE STORM**

Contrary to the widespread reporting of mass looting and violent home burglaries, our interview data revealed strong community solidarity in the immediate aftermath of the hurricanes. The discrepancy between our findings and the pervasive reporting of looting supports previous research asserting that disaster journalists are often encouraged to exaggerate and focus on sensational aspects of a disaster. They have the power to amplify certain aspects of an event to far-removed audiences, potentially reinforcing myths of post-disaster social disorder.

At the same time, other important aspects of a disaster may be downplayed, or even ignored. During the course of our interviews, and outside the scope of our questions, many respondents voluntarily raised concerns about food insecurity, housing inequity, infrastructure improvement, and underinsured homes in the islands. The resources allocated to curfew enforcement and property protection often eclipses funding for the

housing recovery and disregards the more immediate needs of residents, such as shelter, food, and medical care. Prioritizing the humanitarian needs of hurricane survivors not only addresses threats to residents' health and livelihoods, it also helps mitigate the survival appropriation behavior that may account for some criminal activity in the absence of assistance.

### Notes

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### **Disaster Impacts on College Students: Life Trajectories at Stake**

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College students in the United States occupy a unique social space between adolescence and adulthood. Traditional-age college students are learning how to live independently from their parents, although many still depend on their family members for financial and emotional support. In addition, college students often move away from home to new geographic locations, potentially exposing them to different hazard contexts. Their position within the social structure may generate unique risks for college students during disasters.

The purpose of this research was to gain insight into how college students' educational experiences were affected by the 2016 Louisiana floods and their aftermath. While studies have looked at the vulnerability of children (Peek et al. 2018) in elementary and secondary schools (Lai et al. 2016) during disasters, current college students have been under-represented in hazard research and emergency management applications. Some universities have begun to acknowledge the unique challenges that college students face (UNC 2018) during disasters. The impacts of these difficulties include displacement, attendance issues, grade fluctuations, and changes in motivation. There is still more to be learned, however, regarding the experiences of young adults in disasters.

### **THE 2016 LOUISIANA FLOODS**

In August 2016, prolonged rainfall dropped 20 inches of rain in the Baton Rouge region over a three-day period. The ensuing floods destroyed more than 55,000 homes, many of which lacked flood insurance. The disaster occurred about one week before the start of the



## Breen and Meyer: Disaster Impacts on College Students

Fall 2016 academic semester, and many college campuses started a week late. Although the universities in the region avoided major damage, many of the students were from areas impacted by the floods.

At Southern University in Baton Rouge, enrollment declined due to the costs of university education as well as flooding, with about 400 enrolled students failing to report for the Fall semester. The parent of one student encapsulated the feelings of many: “My home is lost. My automobile is lost. We’re under a financial burden, and our mental state is not one where I want my child starting college or continuing college under these conditions.”

In spring 2017, approximately six months after the flood, we interviewed 33 college students. The interviewees were all enrolled at four-year public universities in Louisiana and had experienced the flood either personally or through effects on their immediate families. Open-ended questions posed during the interviews were designed to gain information about their personal experiences in the disaster, the college students’ role in flood recovery, and their educational experiences following the flood. They were each asked to self-identify their family’s social class, as well as how they paid for their tuition (financial aid, family, or self-funding), along with other demographic questions.

### **STRONG FAMILY TIES AND SHARING THE HARDSHIP**

Analysis of the interviews revealed that one of the most significant impacts on students after a disaster is when their families are affected. Students with closer family ties who felt a strong sense of responsibility to help their families experience greater stress and emotional trauma, which increases the risk of negative impacts. Three additional themes related to educational experiences emerged in the data.

### **FAMILY OBLIGATIONS**

During and after a disaster, some students feel an obligation to their families that is stronger than their responsibility to stay in school. One student described how helping her family find living arrangements severely limited the amount of time she was able to devote to her studies. “When the flood happened, all of a sudden I had to help take care of them,” she said. “There was only so much I could do, so as far as my education timeline goes, I was set back.” Another student said she needed to go home more to help her parents recover, and often her classes had to be put on the back burner.

### **SOCIAL STRATIFICATION**

College students can provide unique skillsets and important labor (Carlton et al. 2022) to communities as well as financial and emotional resources to their families; the need for

## Breen and Meyer: Disaster Impacts on College Students

these resources is amplified after a disaster. For the students, this results in a diversion of effort from studying and employment to supporting their families' resilience, which often occurs at the detriment of their own educational outcomes. Student interviewees who categorized themselves as upper-middle or upper-class did not express the same feelings of a financial burden as middle- and working-class students.

Students whose families had the financial means to take responsibility for flood recovery experienced no change in their grades, because they were able to stay focused on their studies. One student said her family encouraged her to concentrate on school and ignore the distractions caused by the flood. Conversely, another student shared that he needed to contribute some of his part-time job earnings to his family to help them during the recovery.

### **STRESS AND MOTIVATION**

All interviewees experienced motivational changes, emotional trauma, and stress following the flood. Much of the stress was related to being enrolled in school at the time their family needed help during the recovery process. One student stated, "It was very depressing during the first few months, and there was a lot of pressure like 'you need to get a job,' so my motivation dropped from all of the pressure."

### **SHIFTING THE FOCUS TO FAMILIES IN CRISIS**

Social vulnerability refers to the ways in which social systems and economic stratification operate to make certain people more vulnerable to disasters. This study helped reveal the ways that college students are uniquely affected by disasters due to their position in society. While some institutions are taking action to mitigate these impacts through measures such as expanding emergency funds to students, more can be done.

Universities should work to enhance disaster response and recovery not just when their campuses are affected, but with the understanding that families in crisis during a disaster may present the greatest challenges to students. These obstacles have the potential to negatively impact the students' life trajectories. Likewise, future research should focus not just on how disasters impact students and campuses, but how impacts ripple through families to influence students' educational aspirations and achievements.

### **Notes**

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## RECOVERY

### Fostering Recovery Through Social Connections

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**Keywords:** Recovery, flooding, social capital, place attachment, Canada.

On June 19, 2013, more than eight inches of rain fell in the Canadian province of Alberta in just 36 hours. This rainfall, coupled with significant snowmelt, led to seven rivers in Alberta overtopping their banks, triggering catastrophic flooding in Southern Alberta. The Canadian Armed Forces helped evacuate 175,000 people in multiple communities, with more than 75,000 residents evacuated in the City of Calgary alone. The flood became the costliest disaster in Canadian history.

### SOCIAL CAPITAL AND DISASTERS

Beginning in the 1990s, the idea of social capital was introduced by scholars to explain how our social networks influence important life outcomes, such as employment, health, and education. In the context of disasters, researchers use social capital to analyze how people access necessary resources during and after a catastrophic event. In *Building Resilience*, Aldrich (2012) asserts that social capital is the most important resource that an individual, family, or community can mobilize in a disaster because it helps people access required resources that may not be available through more formal channels.

The 2013 Southern Alberta Flood (City of Calgary 2023a) provided an opportunity to examine how disasters motivate residents to generate new forms of social capital that help them both recover from the current disaster and prepare for future events. One year after the flood, in May 2014, I worked with a team of research assistants to collect survey data from 407 Calgary residents who lived in the city's 26 flooded and/or evacuated neighborhoods (City of Calgary 2023b). The survey included questions related to participants' evacuation experience, their use of social networks during the disaster, and their plans for returning or rebuilding. To augment the survey data, we also conducted 90-minute interviews with 40 residents. The purpose of the study was to examine the factors that prompted residents to expand their social contacts and the impacts of these new networks on attachment to place and civic engagement.

### **EMERGENT NETWORK TIES**

Our analysis of survey data revealed that direct personal experience with the flood was the most important predictor of whether an individual would develop new social connections. Having their home flooded, being asked to evacuate, and the duration of the evacuation were all related to the generation of new social capital. In fact, participants whose homes had flooded were five times more likely to make new social contacts.

Those who experienced the most hardship during the floods were also more likely to stay in touch with new contacts in the year following the disaster. Notably, variables such as the number of neighbors they knew by name prior to the flood were not significant. This finding supports the idea that during disasters, new social capital is formed in response to a situation of need.

The personal interview data also highlighted the importance of situational needs in creating new social capital. One interviewee who was forced to outrun the flood waters to escape her home told us: “I met more of my neighbors than I have met in the thirty years I have lived there. I am closer to them, and we were able to help our neighbors.” Another explained how his new connections endured after the flood. “Maybe you see them at the little coffee shop in the neighborhood now, and you know they were there to help you.”

### **POST-DISASTER PLACE ATTACHMENT**

Researchers have long known that experiencing a disaster can change the sense of attachment residents have to the place they live. Disasters can alter someone’s attachment to a place by making livelihoods more difficult, significantly altering the natural environment and landmarks, and disrupting social networks that are part of daily life. Based on this, we asked respondents questions related to how they felt about their neighborhoods a year after the disaster and whether they considered their post-flood neighborhood an “excellent” place to live.

Although having one’s residence flood did not affect people’s attachment to their neighborhoods, it did negatively impact their perception of the neighborhood’s quality of life. It may be that people’s evacuation experiences made them think about their neighborhood’s vulnerability to future flooding, prompting them to question whether they wanted to continue living there. Based on these findings, we conclude that having an adverse flood experience and bearing flood-related financial costs caused residents to perceive their neighborhood as being less desirable.

### **POST-DISASTER CIVIC ENGAGEMENT**

Research has shown that community issues, such as crime or poverty, often trigger civic engagement by residents. Following a disaster, residents may channel their new social connections into civic engagement and grassroots efforts to solve problems. We measured

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post-disaster civic engagement by asking participants (1) whether they spoke to their neighbors more after the flood than before, and (2) whether they had attended any community or neighborhood meetings (HSCA 2023) since the flood.

Overall, personal experience with the flood was related to increased civic engagement; people whose homes had flooded were three times more likely to be active in their communities after the flood. The strongest predictor of post-disaster civic activity is pre-disaster community involvement. Respondents who described their pre-disaster activity as high were 37 times more likely to maintain this level of activity after the flood. One participant said his concerns about structural mitigation measures motivated him to become more active in neighborhood meetings. "I am on a committee, and we are lobbying. I am going to keep talking to people and keep actively participating in a proper mitigation strategy," he said.

The number of residents who made new connections and had higher levels of community involvement with their neighborhoods during and after the floods is noteworthy. It is important to also pay attention to who had these experiences. Our findings clearly show that the severity of impacts and material needs are the key factors that trigger the formation of new social ties. In addition, those whose homes had flooded were more likely to have high levels of civic engagement. However, the experience of having their home flooded or having to evacuate appeared to erode people's attachment to the place, even if their community involvement increased.

Understanding how disaster-affected residents expand their social networks after a disaster is critical to building more resilient communities in the disaster aftermath. Our results show that it is not simply pre-existing social capital that helps residents cope with a disaster, but instead that the disaster may actually bring together people who may not have otherwise interacted. These new bonds can strengthen communities and lead to community engagement, volunteering, and other altruistic efforts as well as foster a more robust recovery.

### Notes

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### **Successful Disaster Recovery Grows from the Grassroots**

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**Keywords:** Post-earthquake rural reconstruction, governmental interventions, self-reconstruction efforts, grassroots leadership.

On May 12, 2008, the province of Sichuan, China was rocked by a 7.9 magnitude earthquake (USGS 2008). What soon became widely known as the Wenchuan earthquake killed nearly 370,000 people, making it the fifth deadliest earthquake in the world since 1950. An estimated 375,000 people were injured, 18,000 went missing, and five million were left homeless.

China's central government devoted 1.7 trillion Chinese Yuan (roughly \$250 billion) to a three-year-long recovery effort (The State Council The People's Republic of China 2012). Rural populations were hit especially hard, and the central government saw the earthquake recovery effort as an opportunity to not just re-build but re-develop rural economies and livelihoods. The effort produced mixed results and offers some clear lessons for improving disaster recovery both in China and in rural communities around the world.

#### **PROMOTING COMMUNITY THROUGH GENERATIONAL KNOWLEDGE**

Immediately following the disaster, the central government plan called for constructing urban-style condominium units to house displaced people. The units were made available at no or very low cost to the residents and nearly everyone took advantage of the offer. The central government also offered to pay families to rebuild their own homes. These two different options offered a natural experiment showing which option worked best in the long term for the residents of rural Sichuan.

This long-term project was launched soon after the disaster and focuses on rural mountain communities that were devastated by the earthquake. I interviewed 19 members of 11 farming families located in nine communities. Eight families opted to rebuild their homes immediately after the earthquake. The remaining three families lived in the government-built condominiums for about one year before returning to their original homes to rebuild. The three families that had experience with both home types reported greater satisfaction living in their self-rebuilt homes than living in the condominiums.



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Several factors help explain why the self-rebuilt homes were more desirable than the government condominiums for this sample. All 11 of the focal families had lived in the area for several generations and had an intimate knowledge of the environment around their homes. In addition, they each had strong ties to their communities. This practical knowledge and ability to draw upon the labor of friends and relatives are a large part of what made the self-rebuilding efforts a success. One middle-aged man emphasized the importance of traditional building skills in reconstructing his home: “There were skilled workers in my village or the village close to us, like mason and carpenter. Their skills are family inherited, developed for several generations.”

All of the self-rebuilt homes used locally sourced stone and mud for the foundations and wooden frames sometimes reinforced with steel beams. This was an important safety feature for one older couple who noted that “the collapsed buildings were [almost all] concrete boxes; our old houses all survived.” They went on to say: “My great-grandfather built our old houses with stone and mud as the foundation and wooden framework. Four generations have lived in that house. It still stands and is usable.” Self-rebuilding allowed the residents to make safer houses by choosing appropriate locations and materials for their homes, which protects their fundamental right to have a safe place to live.

The self-rebuilding effort also provided cultural benefits. One middle-aged woman with two children in elementary school said, “building a house is really one of the biggest events in the whole family.” Her brother-in-law hired the laborers, and her sister-in-law bought most of the construction materials while her parents watched the children. Her two brothers and sister drove in to help. A middle-aged man said that building the house allowed him to spend time with friends and neighbors who were usually away doing migrant labor. He said, “it was like a festival in my village, just like a wedding or a lunar New Year gala...It was real teamwork, and all my neighbors came to help.”

By contrast, living in the condominiums separated old neighbors and isolated elderly residents. One older woman reported that she couldn’t see her friend who had trouble walking and lived on the fourth floor of a building with no elevator. A young mother worried about her daughter playing without adult supervision in the condominiums, saying that she never had to worry about kids playing in the village. Living in condominiums also meant that residents had to give up farming as a livelihood. Many of them were employed through public works programs but when funding for those programs ran out, they struggled to find other jobs.

### **BUILDING A MORE PROSPEROUS FUTURE**

While the central government’s top-down approach of quickly building condominium units served the immediate need to house displaced people, it did not do as good a job of meeting their long-term needs as the grassroots self-reconstructed homes did. Not all communities have the close-knit community ties and depth of local knowledge that the rural mountain town of Sichuan possess, but this community-driven approach to disaster

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recovery does provide a model that can be used in other settings. For example, villagers in Chile were provided with “half a good house” after an earthquake and tsunami devastated communities in 2010 (Zilliagus 2016). These half-completed houses allowed residents to finish the other half in whatever way suited their needs. Another example comes from Sri Lanka where farmers collaborate to use weather and climate forecasting to predict droughts and allow them to divide farmland in a way that provides water equally to everyone (Burchfield, Williams, and Carrico 2018).

These grassroots programs provide an effective complement to centralized government disaster responses. As this research shows, such programs can transform disaster survivors from being passive recipients of government aid to actively taking part in making their homes and communities more prosperous and resilient in the long term.

### Notes

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## MITIGATION AND RESILIENCE

### Disaster Subculture Can Save Lives

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A magnitude 4.0 temblor shakes the nation of Chile five times per week on average (Moehle et al. 2010), and most Chileans barely notice. The nation lies near the intersection of three tectonic plates and the threat of more severe earthquakes, magnitude 7.0 or greater, is a constant presence. Over the centuries Chileans have developed a body of knowledge to help them cope with this ever-present threat. This disaster subculture played an important part in saving people's lives in the Greater Concepción area after a magnitude 8.8 earthquake that triggered a tsunami struck the region in February 2010.

### LIFESAVING LESSONS OF TRADITIONAL EARTHQUAKE KNOWLEDGE

Disaster subcultures (Wenger and Weller 1973) develop in places where the following three factors are present: (1) there is a recurring threat of a specific type of disaster, (2) the threat allows for a period of forewarning, and (3) the damage from the disaster cuts across class divisions within the community. To study the role that the disaster subculture of the Greater Concepción area played in the aftermath of the 2010 earthquake and tsunami, our research group interviewed 93 survivors individually and 147 survivors in group settings, about their experiences during and after the disaster. The interviewees came principally from the coastal community of Talcahuano and the inland community of Hualqui.

The interviews revealed a set of values ingrained in the disaster subculture. Survivors spoke of community solidarity that took the form of helping elderly people and people with disabilities to higher ground before the tsunami struck. The communities had volunteer fire brigades who came together to assist during the disaster. Respondents also reported that they didn't see themselves as victims and that they did not feel like they were at the mercy of nature. Some even saw the disaster as a re-development opportunity. One respondent said, "emergencies are opportunities because previously tight resources are finally released." Talcahuano used disaster recovery funds to enact a plan that was already in place to improve the city's appearance. Hualqui used its funds to address a housing shortage. These types of outlooks and actions worked together to make the communities more resilient to the effects of the earthquake and tsunami.

Cultural knowledge also helped individuals survive the disaster. People were used to going outside and heading to high ground after a severe earthquake. The guideline that was used by many interviewees was if the earthquake was strong enough to make a person fall then a tsunami was likely and it was important to immediately head uphill. This practice pre-dates the Spanish colonization of Chile. It began with the indigenous Mapuche people who would gather their food and children as soon as the earth stopped shaking and climb the nearest hill or mountain. This belief allowed the people of the Greater Concepción area to quickly assess the risks the disaster posed and rapidly take action to protect themselves. However, these beliefs are mostly held by people living near the coast. Respondents from inland areas were less likely to have this knowledge, and people from outside of Chile were unlikely to have it at all. One result was that tourists who were camping in Pellehue and Curanipe were killed by the tsunami.

In addition to traditional knowledge, new technologies are also available to help mitigate the threat of earthquake-triggered tsunamis—although our research revealed their effect is mixed at best. The Pacific Tsunami Warning System, which is made up of a network of seismometers, ocean pressure sensors, and sea-level monitoring stations, was in use at the time of the 2010 disaster. Officials in Chile, however, seemed to ignore the warning it provided. Officials stated that the earthquake was expected to generate higher waves but that the impact would be limited. Respondents told of police officers saying that it was safe for people to return to their homes in low-lying areas. The result was that many more people were killed by the tsunami that followed than would have been if they had relied only on centuries-old local knowledge.

### **STRATEGIES LEARNED FROM DISASTER SURVIVORS**

Interviews with disaster survivors revealed several areas for improvement in disaster response. Matching donated goods to the needs of survivors resulted in surpluses of items that were not needed but nevertheless took valuable time to dispose of. The volunteer fire brigades from poor areas were under-trained and under-resourced compared with their counterparts from wealthier neighborhoods, a disparity that should be dealt with to provide

better responses in the future. Disaster aid was also concentrated in the areas that received the most media attention resulting in some heavily damaged areas receiving inadequate amounts of aid. The Pacific Tsunami Warning System was retired in 2014, but its failure revealed that a complex warning system that relies on input from too many sources is too slow to be relied upon in an emergency.

The disaster subculture of the Greater Concepción area, however, served the residents well by giving them the tools to quickly assess the level of threat they were facing and take appropriate protective actions. The attitude of looking forward to a new normal rather than feeling resigned to the destruction of constant disasters may be the greatest resource for keeping threatened communities resilient.

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### **Bounce Rap as Resistance to Imposed Resilience**

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**Keywords:** Resilience, Hurricane Katrina, social vulnerability, resistance, New Orleans, bounce rap, colonialism.

On August 29, 2005, Hurricane Katrina made landfall in Louisiana ultimately killing 1,833 people and causing \$105 billion in property damage. It was the costliest storm in American history and one of the top five deadliest. Much of the damage occurred in New Orleans where the storm overwhelmed protective levees and left 80 percent of the city underwater. The communities that were most vulnerable to the storm were, unsurprisingly, poor Black neighborhoods.

#### **LISTENING AND LEARNING FROM LYRICS**

As discussions turned toward rebuilding the city, familiar narratives of resilience were imposed on the people who previously lived in the wards and public housing projects. These narratives asserted that neighborhoods that have been systematically neglected for decades should “bounce back” in the same way as wealthier neighborhoods. Stereotypes of these neighborhoods as wastelands of poverty and crime may have helped sell the idea that the wards and projects needed to be torn down and replaced including some that were not damaged by the storm. However, the stories that the communities themselves were telling through the lyrics of “bounce rap” songs, a style of music that originated in the Black communities of New Orleans, illuminate a different side of life in the projects. The lyrics revealed the importance of the family and community support networks and mourned their loss. The voices of community members were not considered when those communities were demolished in the name of resilience, but the voices were there, nonetheless.

Bounce rap (Trejo 2016) emerged in the 1990s as a way for Black New Orleanians to cope and react to the racism, systemic neglect, and insults their communities face. Bounce rap is hyper-local. The song lyrics and the names of the rappers specifically refer to neighborhoods such as 10th Ward Buck and 5th Ward Weebie. I sampled lyrics from 147

songs to identify themes within the music. Sixty-five songs were recorded pre-Katrina between 2000 and August 2005 and 82 post-Katrina songs were recorded between September 2005 and 2010.

### **CULTIVATING CULTURES OF RESILIENCE THROUGH RESISTANCE**

At the outset of my research, I expected that the lyrics would contain themes of inequality, violence, and poverty—similar to other genres of rap music. But those themes were relatively minimal in the post-Katrina music. There was also relatively little mention of the storm, although there were prominent exceptions. After two years and several rounds of thematic analysis, I was still stuck with the question of why these themes were missing. Solving the puzzle of why outsiders portrayed these post-Katrina neighborhoods as hell on earth while people from these places avoided that kind of negativity led me to question how outsiders continue to perpetuate marginalization through their characterization of Black spaces.

This realization also led me to confront the hypotheses and assumptions I was bringing to this research as a highly educated White woman who lived in New Orleans at different periods in her life before and after Hurricane Katrina. Several events exposed me to the way that narratives of resilience are continuing a colonialist mindset (Evans and Reid 2013; 2015) in disaster scholarship. One pivotal moment occurred at a conference where a group of accomplished White women scholars had presented their work where they had successfully “built resilience” in Indigenous communities of color. I found myself asking how they concluded that the groups they studied needed or wanted to be resilient in the ways they decided.

Those kinds of questions were never asked of New Orleans’ poor, Black communities, and that lack of engagement is reflected in the lyrics of 5th Ward Weebie’s “Katrina Song (Fuck Katrina)” (5<sup>th</sup> Ward Weebie 2010).

5th Ward Weebie, he back and we soldier. / I’m repping New Orleans till the day  
that I’m over. / Mississippi people y’all feel where I’m at, / same sh\*t, same story,  
so it’s time to bounce back.

The lyrics evoke Weebie’s personal identity as a New Orleanian and a member of a community that is used to endless struggle but will not quit. In the last line, he brushes off the hurricane as nothing more than his community had dealt with before—same sh\*t, same story.

Rapper Mia X wrote “My FEMA People” (Mia 2012) about the destruction of her community but also as a love letter to her city. “We were left for dead, for vultures, all through the city,” she wrote but a few lines later continued: “Where my people? Y’all my people. I got love for my people. That’s right, 504 represents... New Orleans, I love you.”

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Gotty Boi Chris wrote about the demolished housing projects in “Hustlaz At,” (Chris 2007) name-checking the Iberville, Calliope, Melpomene, and St. Bernard housing projects and saying “a party aren’t a party” if each of those projects “aren’t in it.” 5th Ward Weebie and Big Choo also grieved the loss of poor, Black wards and projects in their song “Dip it,” (5<sup>th</sup> Ward Weebie 2007) mixing references to dancing with the memory of the demolished communities.

Bounce rap provided a positive voice for the projects celebrating the city and Blackness despite institutional neglect and ongoing patterns of racial exclusion. It reflects a lived experience that defies the narrative that was imposed on those communities from more powerful, white-led institutions and actors.

Bounce rap is only one of the ways Black citizens resisted the conditions that were imposed on them post-Katrina. They were not vulnerable because of some condition inherent to poor, Black people but because the still dominant White culture has rendered this population group vulnerable due to centuries of institutionalized racism. To quote a 2014 paper by Evans and Reid, “there is no resilience asked of those who can afford to take flight.” Resilience is often only demanded of those with the fewest resources. Black New Orleanians had no other recourse than to resist with their own culturally appropriate tactics.

As disaster researchers we need to be careful not to reproduce narratives that portray poor communities of color as inherently fragile while ignoring the role that institutional racism and neglect plays in creating vulnerability to disasters. We should also pay attention to how our discussions of “building resilience” in communities to which we do not belong can marginalize the people we are trying to help. Resilience is not something that can be imposed by White scholars on communities of color. Resilience, as well as resistance, is already present there in unique forms if we take the time to listen and learn.

### Notes

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## Acknowledgments from the Editors

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### **ACKNOWLEDGMENTS FROM THE EDITORS**

Between September 2017 and March 2023, we had the tremendous honor of serving as co-editors for the *International Journal of Mass Emergencies and Disasters (IJMED)*. We first began working on this journal as editorial assistants when we were still graduate students at Texas A&M University. Over the years, we have published in the journal and have encouraged other scholars to do the same. Therefore, when Dr. Lori Peek, who was the immediate past president of the International Sociological Association Research Committee on the Sociology of Disasters (RC-39), and Dr. William (Bill) Lovekamp, who had recently been elected president of the RC-39, reached out to us and asked us to serve as editors, we were moved to say “yes” because of our commitment to this journal and the people who have made it such a success.

Over these nearly seven years as the heads of the journal, we have amassed many debts of gratitude to people and institutions. We offer a brief list here, but please know that we could never offer a full accounting of all those who have helped advance our efforts along the way.

To begin, we are thankful for our current academic institutions at the University of North Texas and Jacksonville State University for acknowledging the importance of us working on this journal. We also thank Texas A&M University for the technical support on our webpage, as well as Hazard Reduction and Recovery Center (Texas A&M University), Natural Hazard Center (the University of Colorado Boulder), and the Disaster Research Center (the University of Delaware) for the invaluable support these institutions—and their faculty and students—have provided during our tenure as editors. We are especially grateful to Dr. Lovekamp and Eastern Illinois University, as he has been integral to processing all *IJMED* editorial subscriptions and ensuring that subscribers have access to the full content of the journal. We also want to express our gratitude to Dr. Michèle Companion and the University of Colorado Colorado Springs for her tireless efforts in making the manuscripts accessible to our subscribers. Additionally, we sincerely appreciate the amazing Dr. Lori Peek’s invaluable guidance and advice throughout this time.

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## Acknowledgments from the Editors

field of disaster science and emergency management. The outstanding efforts of hundreds of diverse researchers from around the world who contributed in countless ways ultimately greatly improved the quality and impact of the journal.

We are so grateful to have served as co-editors of *IJMED* and look forward to this next chapter in the history of the journal as we transition to SAGE Publications. We are thrilled to continue as members of the distinguished editorial team and to have the opportunity to advance science in the hazards and disaster field.

Sincerely,



Shi-Kai (Sky) Huang



Tristan Wu

*Co-Editors of the International Journal of Mass Emergencies and Disasters, 2017-2023*



# Natural Hazards Center



The Natural Hazards Center is the National Science Foundation-designated information clearinghouse for the societal dimensions of hazards and disasters. We engage in a variety of activities—organized around four primary mission areas—that are dedicated to reducing the harm caused by disaster. Learn more about each of these activities by visiting [hazards.colorado.edu](http://hazards.colorado.edu).



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**2** *Building Connections Between Researchers, Practitioners, and Policy Makers*



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**4** *Training and Mentoring the Diverse Next Generation of Hazards and Disaster Professionals*

## Natural Hazards Center Clearinghouse Activities and Publications

<ul style="list-style-type: none"> <li>• <a href="http://hazards.colorado.edu/disaster-research/current">hazards.colorado.edu/disaster-research/current</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://hazards.colorado.edu/news/research-counts">hazards.colorado.edu/news/research-counts</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://hazards.colorado.edu/research/quick-response">hazards.colorado.edu/research/quick-response</a></li> <li>• <a href="http://hazards.colorado.edu/research/mitigation-matters">hazards.colorado.edu/research/mitigation-matters</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://hazards.colorado.edu/training/webinars/making-mitigation-work">hazards.colorado.edu/training/webinars/making-mitigation-work</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://hazards.colorado.edu/workshop/save-the-dates">hazards.colorado.edu/workshop/save-the-dates</a></li> </ul>
Disaster Research News	Research Counts	Small Grant Programs	Mitigation Webinars	Natural Hazards Workshop

## CONVERGE Facility

The National Science Foundation-funded CONVERGE facility is headquartered at the Natural Hazards Center. The mission of CONVERGE is to advance the ethical conduct and scientific rigor of hazards and disaster research and to strengthen networks between social science, engineering, and interdisciplinary research communities. The CONVERGE team is creating a number of free, online resources and data publication opportunities for the research community. CONVERGE is also home to the Social Science Extreme Events Research (SSEER) and Interdisciplinary Science and Engineering Extreme Events Research (ISEEER) networks. Learn more at [converge.colorado.edu](http://converge.colorado.edu).

<ul style="list-style-type: none"> <li>• <a href="http://converge.colorado.edu/training-modules">converge.colorado.edu/training-modules</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="http://converge.colorado.edu/research-networks">converge.colorado.edu/research-networks</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="https://converge.colorado.edu/data/mobile-data-collection">https://converge.colorado.edu/data/mobile-data-collection</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="https://converge.colorado.edu/data/data-publication">https://converge.colorado.edu/data/data-publication</a></li> </ul>	<ul style="list-style-type: none"> <li>• <a href="https://converge.colorado.edu/communications/webinar-series">https://converge.colorado.edu/communications/webinar-series</a></li> </ul>
Training Modules	Extreme Events Research Networks	Mobile Data Collection	Data Publication	Webinars and Virtual Forums



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