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WORKSHOP ON DEPLOYING POST-DISASTER
QUICK-RESPONSE RECONNAISSANCE TEAMS:
METHODS, STRATEGIES, AND NEEDS

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Workshop on Deploying
Post-Disaster Quick-Response Reconnaissance Teams: Methods, Strategies, and Needs

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Introduction

Scholars in a number of disciplines have long recognized the importance of deploying research teams to the site of a disaster to gather perishable data (Stallings, 2007). Natural and environmental scientists are interested in understanding the natural processes that produce hazards in the human environment. Engineers seek to improve the built environment and benefit from knowledge of hazards that affect and are affected by man-made structures (Restrepo & Zimmerman, 2003). Social scientists conduct reconnaissance research for exploratory, descriptive, and explanatory purposes (Michaels, 2003) with the hope of building upon society's adaptive capacity to withstand disaster events. Data collected in reconnaissance research provide insight into linkages between the causes and effects of disasters, which are valuable in terms of developing scientific theory and useful in their potential application.

In lieu of the Small Grants for Exploratory Research (SGER) grant program in effect from 1990 to 2009, the National Science Foundation awards Grants for Rapid Response Research, or (RAPID) grants, for small-scale research projects to expeditiously collect perishable data after a disaster or other event. Awards are capped at $200 thousand, though most awards are much less, and may extend for up to one year in duration (NSF, 2011). RAPID grants only require an internal merit review with optional external input, which reduces the timeframe from that required for a full, externally-reviewed project proposal. This enables researchers to deploy to the field when access to data, facilities, or specialized equipment may be affected by the transient circumstances surrounding a disaster event.

There has never been an organized effort to bring together researchers to pool what is known about conducting post-disaster field research, nor has there been a systematic account of experiences useful for informing best practices. Although the knowledge produced from these reconnaissance trips is widely mentioned across multiple disciplines, a search of the Disaster Research Center's archive yields little on the methods of quick-response research and the context in which reconnaissance studies are currently practiced. What is known in terms of scholarly work published on the topic area is centered on prescriptions for sound methodology. To date, there is little available on the nuances of methods and research design reflecting changes in funding mechanisms and the concomitant norms of post-disaster field work. Moreover, the changing climate of interdisciplinary work and growing need for collaboration has, in turn, induced institutional barriers, varied expectations, and different socio-cultural perspectives on research ethics. Guidance surrounding funding prospects, collaborative projects, methods, ethical judgment, and the institutional context thus far lies principally in the informal collective memory of the disaster research community. Only sparse and scattered insight is available to guide key agencies involved in administering deployment of reconnaissance research and to address issues salient to disaster research.

The National Science Foundation funded the University of Delaware's Disaster Research Center to convene a workshop in June, 2012 on quick-response disaster research, with the purpose of probing the state-of-the-art and to provide recommendations to NSF on the administration of the RAPID grant program—a principal source of funding for quick response reconnaissance deployments. This workshop brought together experts in this particular research genre to share methods and best practices in order to improve the science and art of quick response research, and to bolster methods for conducting quick-response post-disaster reconnaissance studies. These research trips are a particularly demanding form of data-gathering that require on short notice:

1) a swift comprehension of a developing disaster situation, typically from media sources and with scanty or ambiguous information;
2) an assessment of the likely theoretical or scientific questions that can be tackled on an expedient basis;
3) an urgent conceptualization of a proposal, grounded in the literature, that can credibly promise transformative potential;
4) recruitment of a research team, and especially making, continuing, or renewing contacts with colleagues in the affected area;
5) completion of human subjects protocols;
6) preparation and submission of a proposal complete with budget;
7) completion of travel arrangements, including necessary documents and entry permissions, purchase and transport of equipment, and securing food, accommodations, appropriate vaccinations, and other wherewithal;
8) gaining entrée to the disaster site and relevant organizations and facilities

The findings of this workshop provide some guidance in developing the next steps toward laying a solid foundation of informed research practices.

Format of the Workshop

Workshop attendees were RAPID grant recipients as well as representatives of the principal research centers, government agencies, and professional societies whose work involves disaster-related research. The workshop set out to explore:

1) burgeoning methods for developing initial situation awareness after disaster (such as through growing social media);
2) transforming initial situation awareness into researchable questions that meet NSF requirements for transformative potential;
3) team-building and best practices for deploying researchers (including the prospect of novel approaches); and
4) recommendations to NSF and the hazards community on how to best organize and support RAPIDs following a major disaster for maximum efficiency, alacrity in reaching research sites, and scientific payoff.

Scholars of different levels of experience, representing the social, engineering, and natural sciences, were invited to participate in a day-and-a-half workshop. The workshop was divided into three segments: 1) identifying challenges of conducting quick response research; 2) exploring possible solutions to those challenges; and 3) condensing solutions to a set of recommendations both to the research community and to the National Science Foundation. The workshop was conducted in standard stakeholder format, with smaller breakout sessions followed by discussions on the content developed in each breakout. National Science Foundation officials were in attendance throughout the workshop and were able to hear directly the experiences and perspectives of the attendees—a main advantage of the workshop.

Session I: Participants identified problems and challenges in quick response studies. Participants then reconvened and voted on topics for discussion in Session II.

Session II: Participants identified solutions to the issues developed in Session I. They reconvened again, but preferred to bypass another round of voting going into Session III. Proposed solutions were then divided amongst breakout sessions for deliberation.

Session III: Participants considered the range and feasibility of solutions identified in Session II for implementation and next steps.

In the following sections of the report, we discuss post-disaster reconnaissance trips in more detail; describe the importance of disaster research in general; and then introduce and expound upon the main points that were developed in the workshop discussions.

Overview of Reconnaissance Research

Reconnaissance research probes an evanescent realm where circumstances are characterized by risk and a high degree of uncertainty, and where emergency-management decisions are often made with haste and confined to the realm of bounded rationality. Perishable data, data only available for a short period of time in the immediate aftermath of an incident, are invaluable to scientists in understanding the characteristics of a burgeoning crisis (Michaels, 2003).

Social scientists are interested in a wide variety of research topics, such as the entry, growth, evolution, and exit of organizations from the disaster scene, emergent activity within the disaster afflicted community, disaster preparedness, the influences on decision making, and social vulnerability to name a few. They collect perishable data to understand the processes that underpin the social context of disasters. Perishable data valuable to social scientists may include observations of the different activities taking place in context; unalloyed or unreserved individual accounts of these activities expressed in the moment they occur; the design and evolving configuration of facilities and personnel; instances where improvisation was necessary; volunteer and emergent non-official activities; or the names of individuals or organizations who might be contacted in a more thorough study later.

Likewise engineers are interested in obtaining perishable data to understand the context of the disaster, the causes of infrastructure failure, and the challenges of response. Such data may include observations and measurements of infrastructure damage or evolving logistic and supply chain networks. Physical scientists may also collect perishable data to develop cause and effect relationships for future application. For example, in the dynamic natural environment, subsequent meteorological or geomorphological forces may obscure geophysical evidence. Such data could, therefore, only be collected through reconnaissance research.

Reconnaissance deployments are typically inaugurated upon receipt of media reports of a disaster, whereby the research proposal is developed on short notice. Developing proposals on short notice demands comprehension of the disaster situation from information that can be ambiguous and/or contradictory. What limited information is available must contain transformative potential for exploratory research, or must have the potential to develop theories and understanding for application from the existing body of scientific disaster research on a given topic. The researcher must be familiar with the literature on a particular topic before submitting the proposal to duplicating existing knowledge.

The researcher must then recruit a research team, complete human subject protocols, prepare a budget, make travel arrangements, and find accommodations. Ideally, reconnaissance teams arrive on-site, size up the situation, and make decisions as to which areas are suitable for research. Following these preparations, the team then spends at least a week actually engaged in observation, photography, informal interviews, document collection, engineering and geophysical measurements, attending disaster management planning meetings, and other activities. After some preliminary analysis, disaster researchers may return to the site to conduct follow-up visits and interviews and then produce a preliminary report of the team's findings. The work can be physically, intellectually, and emotionally demanding, putting a premium on qualities of patience, stamina, and resourcefulness. In the best cases, the field team has local contacts, but even they are frequently limited in their ability to introduce the team to others. Sometimes the best data emerges in unexpected encounters with agency officials, volunteers, emergent groups, and others operating in the disaster response milieu. Often, the art of blending in becomes key; the art of following closely behind others who are entering offices and meetings; the art of standing around; skills of conversation and chitchat; the art of talking one's way into places. "You can observe a lot by watching," said Yogi Berra, whose remark applies directly to disaster field research.

As an example of what can be involved, Kendra and Wachtendorf (2003: 38-39) reported on their work that began within two days of the attacks in New York on 9/11:

> During that time the field team conducted over 750 collective hours of systematic field observations. These included close observation of key planning meetings at secure facilities, including the EOC, the Federal Emergency Management Agency's (FEMA) Disaster Field Office and

incident command posts near the 'Ground Zero' area. The field team spent extensive periods observing operations at Ground Zero; respite centers established for rescue workers; family-assistance centers established for victims' families; and sites for marshaling volunteers, supplies and food. The field team also observed activities at major security checkpoints in lower Manhattan and at other locations that were important in the emergency response. The team wrote voluminous notes that provide a rich description of observations and experiences; it took over 500 photographs; and sketched and collected floor plans of various facilities to chart the spatial and organizational changes over time. We were thus able to track the evolution of the reconstituted EOC, and other facilities, from very early stages…In addition to direct observation in New York City, we collected numerous documents produced by local, state and federal agencies as well as by individuals and organizations with less formal ties to response efforts. These documents included internal and public reports, requests for information or resources, informational handouts, internal memos, schedules, meeting minutes and agendas, maps and internal directives.

As another example, Rodriguez et al (2006: 165-166) described their quick response work following the Indian Ocean tsunami, for which they traveled both to India and to Sri Lanka:

> In both countries, we talked with fishermen, women, community and organizational leaders, representatives from NGOs, disaster relief aid workers from both local and international organizations, government representatives, people in different types of industries, and researchers. The field team covered a variety of substantive areas in our conversations with these individuals including but not limited to: the physical aspects of the tsunami; individual and community activities that were taking place at the time of the event; individual, community, and governmental response to the event; the social and economic impacts of the tsunami; distribution of disaster relief aid and the role of NGOs and the local government in this process; the building and use of temporary shelters; the relocation process, including the government's intentions to enforce legislation focusing on the coastal buffer zones; and the primary concerns and difficulties that these communities, organizations, and industries were confronting. Each night, the team would meet to discuss our observations and to generate preliminary reports; field notes were also transcribed. Other field documents collected and analyzed include: government reports, secondary data (e.g. census data, socio-economic data on the impact of the tsunami), and other types of reports and documents.

While experienced disaster researchers follow well-understood procedures, each disaster is a unique event and requires a creative, improvised approach in carrying out the various elements of a project. Physicist Alvin Weinberg (1985: 60), for example, has said that

"Science deals with regularities in our experience; art deals with singularities." Silvio Funtowicz and Jerome Ravetz (1990), a mathematician and philosopher of science, respectively, have argued that much scientific work, especially work outside the controlled environment of a laboratory, entails elements of craftsmanship, experience, and judgment.

The unique circumstances that characterize crisis present the disaster researcher with many considerations that include the moment-to-moment tasks of data gathering and extend to the expectations of the researcher's discipline, their university affiliation, and the afflicted community. Post-disaster field research necessitates an ability to navigate the academic, political, and legal institutional universe as well as the territory of interpersonal communication and ethical dilemmas. Indeed the art of reconnaissance research design is a creative extension of well established methodologies blended on a palette of uncertain or unique circumstances, all directed toward theoretical and practical understanding of disaster for the benefit of the field of emergency management as well as disaster science.

Challenges of Reconnaissance Research

Much of what is known about disaster management has been learned in quick response research or in projects that were initiated subsequent to quick response deployments. Auf der Heide (1989: 8-9) has discussed the importance of disaster research and makes a number of arguments for why systematic research by observers other than those who were involved in the event is important:

> "Many published articles are narratives of a single disaster written from the perspective of one individual. Frequently, the author is one who was actually involved in the incident or was in charge of some aspect of the disaster planning or response. It is never easy for one to impartially evaluate the actions of his own organization. Too often, post-disaster critiques turn out to be defenses or justifications of what was done, rather than objective assessments of problems and mistakes…. In addition, published accounts may delete material that may cause political embarrassment or increase the liability of the response participants. Finally, many disaster critiques are assembled solely for "in-house" use aimed at correcting internal shortcomings and are not meant for others' benefit."

> "The recounting and evaluation of a disaster by a person involved in the response has another inherent limitation, that is, the narrow perspective available to any single participant (especially if his attention is focused on action rather than observation)."

For these reasons, on-site research by disaster scientists offers the best hope for understanding aspects of disaster response. In that sense, there are clear social benefits to quick-response research.

There are only a few scholars that provide detailed and comprehensive research on post-disaster field methods. There are fewer studies that directly contribute to the knowledge base of best practices of reconnaissance field research relevant to the political, legal, administrative, and ethical challenges of today. Below we review some of the main work on post-disaster research with an introduction to other salient topics that provide a background and highlight the theoretical and methodological issues of reconnaissance field work to frame the ideas developed in the workshop.

The selected literature emphasizes work in social science. This in no way suggests that the contributions and challenges of other disciplinary areas, such as the natural and engineering sciences, are of less value. Our focus on reconnaissance research in this disciplinary area is principally due to the fact that the difficulties encountered in collecting data that entail human subjects permeate every aspect of research design in the social sciences. Furthermore, as collaborative studies become more popular in the natural/environmental sciences and engineering, integrating the theories of social science to explain risk from broader perspectives inevitably poses the same issues confronted by social scientists. Thus an understanding of the facets of human study is relevant to nearly every disciplinary area of disaster research. In other words, the methods employed are of more significance to this report than the discipline applying them.

Theoretical Development

A disaster presents research opportunities for a number of academic fields as well as institutional actors. Each discipline brings to the table its own theories, methodological approaches, and administrative requirements that have matured separately (Alexander, 1997; McEntire, 2007; NRC, 2006). From the perspective of the disaster research community, the theoretical murkiness and disciplinary divisions pose a number of epistemological problems in terms of what paradigms should govern disaster research, how a disaster should be defined, and how disaster response should be conceptualized (McEntire, 2003). For example, reviewing the theoretical evolution of disaster research in sociology, Tierney (2007) argues that the multidisciplinary nature of the science is the product of interests in larger social processes that involve the production of risk, the institutions involved in decision making, and socio-environmental interaction and should therefore employ broader theoretical frameworks that span a number of topical areas that can be applied across time, space, and to different hazards. At the same time, she was concerned that study of disaster was too influenced by funding opportunities and policymaking needs for applied topics and thus diverting sociologists from core disciplinary interests. As the field of disaster research evolves from its fragmented theoretical background, scholars of the field endeavor to encompass the various dimensions of disaster phenomena under one body of theoretical frameworks.

Despite the advancement of social science disaster theories and models that incorporate multiple perspectives, the disciplinary divide, which Alexander (1997) dubbed 'academic tribalism,' that exists among the sciences still poses barriers. In general, multidisciplinary and interdisciplinary research struggles to distinguish its theories from those more established areas of study and to overcome the purists' criticism that such research is merely a patchwork of diluted theories of traditional disciplines with a new label. While attitudes toward multidisciplinary research and corresponding theories are slowly changing and the number of requests for proposals that require alliances among different fields increases, many fail to produce exemplary work due to disparities in theory and methods that manifest in disciplinary divides (NRC, 2006).

As disaster science progresses from its variegated theoretical foundation, the question of whether the theories of disaster science are themselves distinct from the theories of their parent fields (Phillips, 2003) is still apropos in terms of collaboration, research design, funding, and administration. This conundrum is relevant to the challenges of conducting disaster field research in that current trends are leaning more toward a collaborative approach.

As the milieu of disasters suggests the need for more integrative approaches and the need for multidisciplinary and interdisciplinary research grows (McEntire, 2007), the question of how to fund and administer multidisciplinary research reveals a delicate balance between preserving the autonomy of the individual's pursuit of science and the integrity of established methods of a particular field. Besides a disciplinary divide, the disaster itself produces circumstances that can be difficult to study. While the basic methodology of social science methods in post-disaster research are established, for the most part, new dimensions of the disaster context are periodically introduced adding to the challenges of reconnaissance research.

Methodological Distinction

The circumstances surrounding disaster research present unique challenges that have in the past raised questions as to whether or not 1) the methods of disaster research produce valid and generalizable results useful for application and theory and 2) if the methods employed in disaster research should be considered as a distinct methodological approach (Stallings, 2003). A distinct methodological approach must be informed by the concepts of a field of study. Since its inception the field of disaster science has always been considered interdisciplinary within the domain of the social sciences (Quarantelli, 2003).

To date, literature on the topic of post-disaster reconnaissance field research methods is generally lacking. Most knowledge on quick response reconnaissance research exists in an informal network of seasoned disaster researchers. The National Research Council (2006) sponsored volume *Facing Hazards and Disasters: Understanding Human Dimensions* includes a chapter on post-disaster studies. However, the term "quick response" does not appear in the book and it contains few citations (e.g., Tierney, 2002) that address the actual conduct of quick-response research.

Killian's (1956) report is one of the first attempts to identify the issues involved with collecting scientifically valid field data in a disaster. In 1956, when Killian published his report for the Committee on Disaster Studies within the Division of Anthropology and Psychology of the National Academy of Sciences-National Research Council, disaster research had yet to develop into a discipline. Disaster field study was then considered social and psychological research conducted under unique, or extreme, circumstances. Killian's report describes the theoretical and methodological challenges involved in post-disaster field studies, such as determining dependent and independent variables, choosing the most effective method for sampling, selecting informants, securing interviews, recording and coding data, and presenting findings. While these challenges were not especially distinct from the methods of sociological and psychological research, Killian observed that additional consideration of research design is needed taking into account the theoretical and methodological issues engendered in the ephemeral circumstances surrounding disaster.

E.L. Quarantelli, Russell Dynes, J. Eugene Haas, and colleagues from the Disaster Research Center (DRC) pioneered many of the founding studies of the 'crisis context' and established a set of methods and guiding principles specific to post-disaster field research. These studies primarily focused on disaster response organizations and on groups that emerge as a result of the disaster and thus were theoretically informed by symbolic interactionism and collective behavior. Much of the work was qualitative and inductive, rather than quantitative and deductive, and entailed deployment to disaster sites to collect perishable data. Quarantelli (2003) provides a detailed description of these methods practiced by DRC between 1963 and 1989, which includes the techniques and tools used to gather data and some of the challenges involved in training graduate research assistants to collect and analyze data within the stressful and chaotic crisis context.

Stallings's chapter in the *Handbook of Disaster Research* (2007) provides an overview of disaster field methods. The chapter focuses less on the specifics of the actual methods of collecting data and more on the challenges posed by the disaster setting. For example, the quality of the data depends on gaining entrée to the study area in a timely manner. Each of the qualitative methods described discusses concerns with timing, access, and the ability to make generalizations. At the end of the chapter, Stallings also includes a segment on ethical issues as they pertain to the methods discussed. Based on the assumption that study participants are distraught from loss, Stallings questions the level of responsibility a researcher has in "doing no harm" and remaining objective and unsympathetic in the pursuit of science. We will say much more about disaster ethics later in this report.

Adding Complexity from Context

The issues of research design, logistics, and ethics brought to light in the literature mentioned above is still germane. However, the political and legal context surrounding disaster research has grown in complexity, which introduces new dimensions to these

challenges. Tierney (2002) and Quarantelli (2003) both mention that emergency management organizations and their policies have become more exclusive, thus impeding one of the advantages of conducting research on site: the candidness and honesty of disaster workers. Quarantelli (2003) argues that this is compromised in formal interviews where responses are based on a period of reflection on what should have happened. As such, reconstruction of the event in formal interviews often contrasts with what was observed in the midst of the crisis. Tierney (2003) and others anticipated that the post-9/11 concerns about security would jeopardize the principles of open community engagement that had characterized emergency management practice and research, a phenomenon observed in actuality just a few years later (Bedford and Kendra, 2009).

Timely access is critical. However, the free rein the pioneers of disaster research once enjoyed is curtailed by an increasing number of restrictions. Officials concerned about security and liability have created an air of resistance to open communication (Bedford and Kendra, 2009). To further complicate matters, disasters are high profile events where reputations are at stake. There may be little incentive for disaster workers to assist a researcher in a project that could reflect negatively on an agency's performance. In the worst cases, emergency management officials meet academic researchers through the defensive rituals of standard procedures. Bound by red-tape and limited by concerns about liability, FAQ sheets and referrals to websites may replace open dialog. Tierney (2002) asserts, "Instead of having the opportunity to observe disaster operations directly and ask questions freely, the field worker may instead be handed a packet of pre-printed information" (p. 13) or be referred to the Public information Officer (PIO) tasked with maintaining the agency or organization's image. Disasters have come to imbricate a new political dimension where the impetus of potential crisis has shifted from the epicenter of the disaster agent towards the potential of loss of credibility among emergency management workers.

To contextualize, Alexander (2002) asserts the modus operandi of emergency management evolved from one of civil defense during the Cold War, to one of civil protection focused on mitigation and individual empowerment, and, after 9/11, back to a strategy aimed at civil defense under the Department of Homeland Security. As emergency management shifts in strategic focus, so follows its organizational culture and, in turn, its relationship with academia. In 1956, during the Cold War, Killian noted the clandestine climate of government and warned of the potential pitfalls of bias that could result. The discernible difference in the level of access to political figures and emergency management workers pointed out by Quarantelli and Tierney is a symptom of a transmutation in norms resulting from invisible forces of power and politics lurking behind standard procedures. Although this assertion is not developed further here, the takeaway is that changes in society and its institutional environment have a number of consequences that wield great influence over timely access to data in disaster research.

In summary, developing quick-response research projects requires a sense of multi- and interdisciplinary trends, artistic skills in sizing up the disaster situation on-site, skills in persuasion and diplomacy in negotiating entrée, boldness in conducting research where officials often prefer there be none, and physical and emotional durability for working in

situations of ambiguity and rapid change. Having sketched the intellectual and institutional terrain for post-disaster reconnaissance research, we turn next to the results of the workshop.

Workshop Findings: Challenges and Considerations

Participants identified a number of challenges involved in conducting quick-response reconnaissance studies as a method in general, as well as in the conduct of the RAPID grant funding mechanism that could support those studies. These next sections detail the challenges identified and solutions proposed. However, it must be stressed that the nature of the workshop did not allow for identifying any consensus within the research community on any of these points. Some individuals raised certain challenges or methodological concerns, while others disagreed as to their prevalence or import. Given the length of the workshop, time was limited for exploring these disagreements in detail. Moreover, owing to the variability in work session facilitators' approaches, some ideas were presented in greater depth than others. There is no way to make definitive generalizations from the workshop and determine the views of the broader disaster research community. Further reflection on the topics covered in the workshop revealed that the overarching topics of discussion included collaboration, funding, research design, assessment, and ethics.

Collaboration

The National Science Foundation has initiated programs fostering multi- and interdisciplinary research and many programs require evidence of robust and genuine interdisciplinary work, wherein the natural, social, and engineering sciences weave together in an interdependence that includes reciprocal discovery and incorporation of methods and findings. However, the multi- and interdisciplinary approaches of disaster science are still evolving and to date lack consistency based on solid theory, best practices, and measurable success (NRC, 2006). Such consistency can only be produced through a systematic analysis of what is practiced in the field and cooperation among research team members from various areas of study.

Building teams has been an ongoing challenge, particularly for international disasters where information may be sketchy and the necessary composition of a team difficult to specify, in addition to logistical matters of assembling teams and deploying them. There was a general view amongst workshop attendees that it would be helpful for prospective field teams to coordinate their efforts, both in the earliest days after a disaster, as interest grows in the possibility of quick-response research, and after awards were made. One program officer suggested that, in the pre-award phase, coordination amongst prospective principal investigators might limit the number of similar or duplicative proposals received by NSF, and therefore would have the potential to streamline the review process leading to quicker awards. Some participants, though, objected to this premise, asserting that the demands of academia were such that everyone should be able to participate in the

free market of grantsmanship, and let the cards fall where they might. In that view, a priori attempts or preferences at collaboration that do not emerge organically might be exclusionary to newer scholars or those who are not already part of recognized intellectual families.

Some participants thought that the principal investigators of the various funded projects should meet, either in person or at least virtually at periodic intervals prior to getting into the field and should—to the extent that circumstances permit—be in touch with each other during the field deployment. Depending on the circumstances, it may be possible to convene a web-based conference of RAPID awardees prior to their entering the field. While there is precedent for convening conferences for grantees receiving large, long-running grants, such would be exceptionally difficult when scholars are trying to get into the field as quickly as possible and will be focused on travel arrangements and other logistics. Workshop participants thought that some technological solutions might be possible, including the use of wikis or social media platforms for coordinating teams as they develop, or for coordinating activities amongst teams in the field, if communications access was possible. Participants also suggested that there should be banks of interview questions or data repositories to allow for comparisons across cases and places. As with the technological solutions, however, the mechanism for achieving this could not be specified, though there was hope that NSF might facilitate this.

The principal investigator of this project suggested that, with some future consideration by the National Science Foundation, it might be possible to make provision for the use of NSF's or associated agencies' research ships as platforms for quick-response reconnaissance work, if the challenges of scheduling and interorganizational coordination could be worked out. To take one example, after the *Deepwater Horizon* disaster, a research ship could have embarked both physical scientists interested in the pollution aspects, and social scientists interested in interorganizational coordination, using maritime response resources as a case. Similarly, in a situation such as Hurricane Katrina or the Haiti earthquake, a ship could have transported physical, engineering, and social scientists to the affected area for observations. Such an environment is excellent for fostering collaborative work in that scientists could work from the ship or go ashore for observations, and meet back aboard ship for coordination and debriefings. In addition, as a self-contained facility, the vessel can provide accommodations, communications, and other logistical support for research teams. In fact, the principal investigator had arranged with the US Maritime Administration to travel to Haiti on a government-owned cargo ship after the 2010 earthquake; he even joined the ship in Norfolk but unfortunately the voyage was cancelled. Still, that vessel would have been a superb platform for research in an austere environment. If NSF ships are not available, it may be possible to reach out to other agencies with vessels for research support, including the Maritime Administration, Coast Guard, NOAA, US Navy, or US Army, if those ships are en route to the affected area. The Massachusetts Maritime Academy training ship was used to house emergency responders after Hurricane Sandy, and could have supported a research team. While individual principal investigators would likely bear most responsibility for coordinating afloat operations, the assistance of the National Science Foundation would be invaluable in making connections.

One point raised was that only senior scholars should receive RAPID grants as principal investigators, owing to the rigors of this method. However, other attendees vigorously contradicted this opinion, pointing to the importance of quick response research, early in their careers and with substantial field responsibilities as a contributing element to their ongoing professional development. Indeed, noteworthy disaster researchers had their first experiences in quick response research with considerable autonomy as graduate students, including William A. Anderson, Thomas Drabek, Dennis Wenger, Kathleen Tierney, and others. Similarly, there were suggestions for pre-qualified teams of trained researchers, but again the idea was met with sharp criticism for its prospect of sidelining newer or less connected scholars.

While in principle the idea of coordination was supported, participants were not able to fully describe what was meant by coordination, and others found it to be a troublesome idea in that mandates or norms toward sharing of work and data could impinge on research autonomy, or create intellectual property controversies, especially when exploring ideas in the nascent stage. Again, some raised the concern that younger scholars might be disadvantaged if norms toward collaboration developed that would subordinate individual efforts.

Funding

Participants were concerned that the timeframe of RAPID grants was still long between proposal and award. Even though a program officer can allow funds to be spent 90 days prior to an award being made, the timeframe from an event's occurrence until the program officer's authorization is still many weeks, far beyond the preferences of most scholars for research that could be construed as quick-response. At present, this may be an unsolvable structural challenge grounded in larger matters of NSF funding, staffing levels, and competing priorities. Nevertheless, participants raised the matter for NSF consideration.

Research design

With very considerable consensus, participants objected to the requirement that quick response research must necessarily be 'transformative.' Many asserted the importance of reconnaissance as a way of developing early insight into potentially larger questions and as a way of getting preliminary data for later consideration. They therefore strongly suggested that the requirement for transformative potential should be de-emphasized in the RAPID program. Participants stressed the need for a more exploratory approach to these grants, and that there should be a place in funded science for research that is preliminary, descriptive, or serendipitous—in other words, support for gathering "facts" and for making interesting observations before the full transformative potential is known. In addition, the typical size of the awards—usually less than $50,000 including indirect costs—limits what can really be done, especially for international incidents. One program

officer asserted that RAPID grants are best used in support of already-established research directions or projects for which some immediate post-disaster data would provide important input. But again, workshop attendees stressed the need for a funding mechanism that would support field reconnaissance as much as theoretical development.

Assessment

Workshop attendees thought that there should be some means for assessing the effectiveness of the RAPID program. Again, there were a number of views that were presented. Paralleling the earlier statements about research design, some thought that it was sufficient to fund novel or interesting observations and that these were justified by the relatively small research awards; essentially, RAPIDs were low-cost venture capital meant to stir up ideas and insights. Others felt that more formal assessment mechanisms might be considered. These could include considering the articles or reports to extend from the project (and citations thereof); larger grants that stem from the project; tracking further research in other fields that might extend from the project; new opportunities for training and mentoring of students; and, in keeping with a desire to see RAPIDs for their exploratory potential, openness to seeing many paths for benefits from the program.

Ethics in Disaster Research

Ethical concerns suffused many of the subjects that were covered at the workshop. Some participants thought there should be an explicit ethics statement in every proposal, and that scholars should work toward a code of ethics for disaster research. Others sharply rebutted these assertions, and in general the views presented were diverse and contradictory. In breakout and general sessions as well as at breaks and at meals, participants engaged in a robust debate on ethical matters that centered on several major points of contention: 1) access to the disaster site; 2) the responsibility of researchers to the affected population in terms of providing data, analytical reports, or other products; and 3) issues pertaining to human subjects review by Institutional Review Boards. These three broadly based topical areas encompassed a number of ancillary concerns and redounded on other matters emerging in certain literatures, such as the possible vulnerability of the affected population and their ability to provide informed consent. Because ethics is an important dimension of understanding the appropriateness and suitability of scientific methods, and because of growing dialogues that call into question the propriety of disaster research (O'Mathúna, 2012), it is important to discuss these in some detail.

Access to the Disaster Site

Some debate emerged around processes for accessing the disaster area and for contacting potential research participants. A few participants questioned the propriety of quick response research undertaken without the approval of some sort of local stakeholder, a

view that is emerging in some ethical dialogues in the health area. Other participants vigorously contradicted this assertion. At one level, there is a fundamental right to seek knowledge and to ask questions on any topic (a right held under the First Amendment of the US Constitution as well as under Article 19 of the Universal Declaration of Human Rights, which asserts, "Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers").

At another level, the character of disaster—and therefore who is a relevant stakeholder—can vary widely, inasmuch as disasters have a strong affective dimension. For example, Mitchell (2006) pointed out:

> "Multiple interpretations of hazard events may be held by a single individual or by different groups or institutions. For example, among others a hurricane like Katrina may be simultaneously regarded as a disaster, a natural experiment, an aesthetic spectacle, a manifestation of divine power, an indicator of anthropogenic climate change, a mechanism of societal differentiation, a test of societal resilience, a device for redistributing economic and political resources, a fortuitous opportunity for mischief making, and an entertaining or cathartic diversion."

Given the view that a disaster can mean many things to many people, or even hold multiple meanings for the same person, there is no one person or even stakeholder group who could give "permission" for entrée.

One official in attendance asserted the necessity of contacting the incident commander prior to entering the disaster area. Others forcefully contradicted this assertion. For one thing, experience shows that there are many "incident commanders," and that the notion of a single person in charge is largely fiction. Again, such obeisance raises the possibility of the research team being rebuffed or directed toward sources that are not useful or that are restrictive. Certainly it is wise to be in touch with a helpful incident commander who respects the research function and is comfortable with the presence of researchers, but in the view of other participants we cannot allow the research task to be obstructed by the disapproval of officials.

Moreover, as Kendra and Wachtendorf (2003b) observed, even identifying a "disaster area" is a challenging task, a point carried further by Aguirre et al (2005) who argued that future disasters may be characterized by diffusion and ambiguity with regard to causes, borders, and affected populations. Couch and Kroll-Smith (1985) in their discussion of chronic technical disasters, noted that pollution incidents have ambiguous beginnings, endings, and impacts. Peacock and Ragsdale (2000) contend that a disaster is a disruption in a field of social networks linked to one another through an exchange of information, members and resources. There is no real centralized governing body, per se. Instead, community functions are coordinated through mutual contingencies, competition, coalitions, and control over resources.

Given these characteristics of certain kinds of disasters, who, then, is a "stakeholder" that might be consulted? And for an event such as Hurricane Katrina, where the whole of the US was involved, or for one such as Hurricane Sandy that affected a highly-populated region, large areas were declared as "disaster areas" owing to their roles in disaster response but where few people were directly affected by the agent-generated or response-generated demands. In such circumstances, no one is able to give permission for entrée.

While, depending on the exact circumstances, permission may be needed for gaining access to places and organizations, and local contacts are nearly always beneficial (and are virtually mandatory in the international setting where local cultural predilections and language differences can trip up the unwary scholar), it is easy to imagine situations where researchers may need to function in a more insurgent or clandestine way, especially in situations where there may be forthcoming litigation, as in industrial accidents. Moreover, any deference to local authority may have the effect of hiding from view marginalized, subordinate, or threatened populations—populations that local formal or informal authorities might prefer remain invisible but whose experiences are important to document. After the 2004 Indian Ocean tsunami, Wachtendorf et al (2006) were able to meet with the women of one village in India and to hear their stories - stories that might have differed had men been present. They noted that it was quite easy to talk with men, but that talking with women required more purposeful effort. At the same time, and without contradicting the normative orientation of disaster research directed at reducing losses, some workshop participants argued strongly that disaster research is not inherently tainted and therefore does not require cleansing through any such purification rituals as seeking permission from authorities or soliciting buy-in from local stakeholders.

Some scholars have asserted that convergence can diminish the potential benefit of the research by adding to the chaos of the situation. In this view, overlapping studies may produce fatigue among interviewees; researchers interviewing the same people asking similar questions may inflame frustrations and consequently strain the willing participation of research participants (Killian, 1956). Furthermore, the scarcity of resources and duplicated research efforts prop up the argument for a more coordinated research effort. Some of the members of the workshop concurred that an awareness of other researchers in the field is needed to bridge research gaps and circumvent issues in the field, such as fatigue among participants. In fact, after the Murrah Federal Building bombing in 1995, the state of Oklahoma adopted an aggressive approach, driven by the University of Oklahoma's Department of Psychiatry and Behavioral Sciences, which "petitioned the governor's office to designate the department and the OUHSC [University of Oklahoma Health Sciences Center] Institutional Review Board (IRB) as the clearinghouse for all mental health research related to the bombing" (American Psychological Association, 1997: 53). Again, this was driven by concerns about research fatigue amongst the victims, but mental health research, and again any type of research, could go far beyond the survivors of the Murrah Federal Building and their families. This proposition, however, raises a number of other concerns, such as how this endeavor could be justly coordinated and what entity should properly be responsible for managing the effort.

It is the view of the principal investigator that the Oklahoma restriction, mandated by political officials and driven by state agencies, constituted a serious usurpation of usually-recognized Constitutional guarantees of free speech. At a recent conference on Hurricane Sandy research, where a similar concern was raised about research saturation, one scholar pointed out that even studies that seem similar are rarely exactly duplicative. Scientific advances, especially in the social sciences, may come most reliably from a number of similar studies whose findings might be broadly convergent. And there is a strong craft element to science (Funtowicz and Ravetz, 1990), which means that some scholars may be better positioned at one time or another for a particular study.

An even more appalling instance of the restriction of research occurred in New Zealand after the Christchurch earthquake in 2011. Beaven et al (2015) described the "social science moratorium" that was implemented by emergency officials. Emergency workers had reported being deluged with requests for visits to impacted areas, and members of local organizations and agencies similarly reported receiving many requests from international researchers seeking contacts or other information. According to Beaven et al, emergency workers and New Zealand scholars felt overwhelmed by the number of inquiries, and emergency officials were worried that researchers would contact and further distress people affected by the earthquake. Thus only research that was construed as directed toward supporting relief efforts was allowed. Beaven et al further stated that the moratorium was a relief, since it relieved people of the burden of refusing. Nevertheless, the moratorium is an abridgement of usually-accepted rights to speech and inquiry. To begin with, it singles out a particular kind of speech—social scientific speech—for particular repression. Second, it deprived local residents of their autonomy, either to decline to participate or to choose to tell their stories. It deprived local researchers of the capacity to understand social phenomena in the environs, and it blocked new entrants to the disaster research field. Paradoxically, the case demonstrates something else, too: it can be better for field researchers to eschew contacts with officials, since it was these contacts that officials found burdensome. The case also shows the consequences that can occur when research is regarded as an institutional or professional activity that is decoupled from basic human rights. Curiously, as Beaven et al (2015) explain, the moratorium was directed at *all* research not being coordinated through the formal disaster response system, and in fact it was mostly engineers who were requesting access. Nevertheless, according to Beaven et al, the directive was logged in as specifically referring to social science, and thus the label of "social science moratorium" crystallized. It is beyond the scope of this report to address this moratorium in full detail, but it must stand out as a noteworthy example of the suppression of research.

Some scholars have argued that the merit of disaster research is compromised by its potential to interfere with disaster management activities, jeopardize the reputation or wellbeing of research participants, or produce unintended consequences without accountability (Kelman 2005). Kelman (2005), for example, flipped the conjecture that disaster operations affect the pursuit of research to consider the impact research might have on disaster operations. Kelman posed questions as to whether or not disaster research interferes with disaster operations and whether or not scholars owe some accountability to decision makers that may have been influenced by the researcher's

findings and taken actions that proved harmful.

While it may be possible to find instances where researchers can get in the way (Kelman, 2005), plentiful disaster research shows that actions leading to such concern are easily mitigated. Much quick-response research is observational, involving walking around, taking photographs, chatting informally with officials or residents of the affected area, and other such low-impact activities where the researcher blends into the surroundings and is soon not noticed. Moreover, while the most acute part of the response phase has a surge of considerable activity (almost always before researchers arrive), in a very few days normal human routines begin to reappear, including meals, rest breaks, and so on. In other words, someone always has time to talk and often the enthusiasm to do so. Clearly there is a research skill involved, that might derive from qualities of compassion and empathy that enables a scholar to see who might be able and willing to talk for a few minutes, but there are no grounds to assume the research is distracting or disruptive to operations.

As to Kelman's other concerns, standard precautions for anonymizing findings and shielding individuals from identification are well-known for protecting human subjects. Whether researchers should be accountable in some way for the recommendations stemming from their work is a large question. Owing to the normative orientation of much disaster work, scholars would surely want their findings to lead to salutary policies. However, this concern would relate to any form of research in any area; while scholars should be concerned about the validity and usefulness of their research, it is a challenge that extends across all of science and is not confined to this one area.

The Responsibility of Researchers to their Study Participants

Some discussion shifted toward what obligation—if any—is owed to affected places. Scholars argued for such an obligation, and some scholars assert that obligation as an affirmative duty (Citraningtyas, MacDonald, and Herrman, 2010). However, one program officer stressed that the mission of the National Science Foundation was scientific discovery, not outreach or development projects, however valuable those might be. Nevertheless, attendees who subscribed to a normative ethos toward science as the basis for disaster risk reduction would consider the value of the work generated as a necessary consideration in research design and implementation. They suggested that there should be funding for follow-up trips to the affected communities for disseminating results.

Many participants desired that some provisions be made for sharing results or findings with the affected community. The view was that such sharing would serve broadly as recompense for the time that participants shared with the researchers. Sharing research findings may ease the ethical dilemma—sensed by some—of data extraction by providing the afflicted community the opportunity to participate in their recovery through an open system in disaster research. A number of workshop participants asserted that there was an ethical obligation to ensure that research findings should benefit the affected community.

Most disaster scholars identify a normative quality to their work, with knowledge disseminated broadly. In arguing for the development of improved disaster theory, Alexander asserted that:

> "…I hope that one day there will be a sufficiently large body of theory to permit us to inaugurate a new "interdisciplinary discipline" dedicated to the understanding of disastrous natural phenomena and their effects, and hence to the service of humanity" (Alexander: 1993: xvii).

Returning findings to the affected community is part of the normative quality of this work and might be more of a consideration with very long-term projects that involve substantial community contacts. Yet even this suggestion was met with certain cautions: what if the findings of a particular study reflect negatively on local efforts? Citraningtyas, MacDonald, and Herrman (2010) based some of their arguments on the Helsinki Declaration for medical research, and assert that the community should benefit from research. However, social science research is different from medical research. There is always the possibility that findings may call local political systems into question, or highlight deficiencies or injustices that some in the community would prefer remain hidden. As a rejoinder to that consideration, the scientific duty is to ensure that findings and associated conclusions and recommendations were supported by the data.

In addition, it is conceivable, and increasingly likely, that research participants will directly benefit from their participation in research. Imagine someone who evacuated to Texas from Hurricane Katrina. What if they were interviewed by researchers, who published their study? That study might then form part of the knowledge base that is taught in emergency management programs. When that person evacuates again, they may well be cared for by emergency managers who were trained using the latest Katrina-related research.

Human Subjects Review by Institutional Review Boards

Some workshop attendees stated that human subjects review by Institutional Review Boards can delay deployment. While few would argue the need for some institutional guidance with legitimate authority to enforce standards of ethical conduct, others strongly argue that the standards lack consistency and pose potential impediments to deploying to the field. The Federal regulations for the protection of human subjects, contained in 45 CFR46, provide the intellectual and institutional foundation for ethical conduct in research involving human subjects. In turn, those regulations are the implementation of the Belmont Report, which emerged from a conference that was convened to consider ways for protecting research participants in the wake of some notorious breaches in ethical conduct, such as the experiments conducted by Nazis and the Tuskegee Syphilis study. The Belmont Report establishes a code for evaluating the ethical propriety of research, that stresses 1) *respect for persons:* that people have autonomy, and protection for those who do not; 2) *beneficence*: the idea that research should emphasize people's

well-being; and 3) *justice*: a consideration of how risks and benefits extend from the study and implicate participants and the society at large. While these have become broadly-accepted ethical guidelines, at least as starting points, they are by no means uncontested in their extent, import, and interpretation.

Adjudication of these principles has fallen to Institutional Review Boards, commissions established in universities, government agencies, hospitals, and other research-oriented organizations under the auspices of 45CFR46 and the US Department of Health and Human Services. The oversight of these entities ensures that research conducted with Federal funding meets the ethical standards of the Belmont Report and regulations deriving from it. Most institutions extend these principles to all research regardless of funding source. In order to proceed with research, scholars must apply to their IRB and explain the nature of the project, the methods to be used, the anticipated study population, and submit evidence of how they will obtain informed consent, which is typically through a written document signed by the participant but can be in other ways as well.

Over the last decade or so, scholars have increasingly criticized the IRB process, noting inconsistencies in interpreting the regulations across institutions, protracted review timeframes, and ever-broadening interpretations of what might constitute risk to a participant (Hamburger, 2007; Bledsoe et al, 2007). For example, according to the Illinois White Paper, a report on IRB excesses, "One IRB, for example, told 'a Caucasian Ph.D. student seeking to study career expectations in relation to ethnicity that African-American Ph.D. students could not be interviewed because it might be traumatic for them to be interviewed by the student.'" In another case, reported by Dr. Zachary Schrag (www.institutionalreviewblog.com), a doctoral student was required to get *80 IRB approvals* in order to send her survey questionnaire to faculty at 80 universities. At the same time, others have found that no evidence that IRB's provide meaningful protection (Hamburger, 2007; Bledsoe et al, 2007).

Rigid and inconsistent protocols of a university's Institutional Review Board can create delays in deployment. The process of acquiring IRB approval may take weeks after a proposal is submitted; moreover, international research may require additional steps to acquiring approval to conduct the study. The process of attaining approval has the potential to extend beyond the window of opportunity to conduct the study. Some scholars argue that Institutional Review Boards exaggerate the meaning of "real harm" imposing upon the researcher's freedom to conduct science (Haggerty, 2004; Stark, 2007). Moreover, the process of obtaining informed consent sometimes arouses anxiety among parties that may not have been concerned otherwise (Tierney, 2002). Some attendees at the workshop suggested that NSF develop a letter or guidance circular that could be presented to IRBs notifying them of the importance of disaster research and its overall lack of harms to participants.

Strong views on ethics were held in all directions, and no consensus was reached. It appears that this is likely to be a topic requiring much more consideration. For example, ideas such as the duty, if any, to the affected community, returning results to the affected area, and other such matters were raised by some participants but strongly contested in

their desirability, practicality, or import by others. A number of participants cited delays occasioned by lengthy Institutional Review Board processes. Indeed, Institutional Review Board processes, in the context of the entire human subjects protection enterprise, have been the subject of much scholarly discussion, far too much to expound upon here. In 2011, the Department of Health and Human Services issued an Advance Notice of Proposed Rulemaking, containing many pages of potential modifications, for consideration by the research community, but no movement has been made as of yet. In January, 2014, the National Research Council issued its own review, containing many recommendations for simplifying procedures and for withdrawing some forms of research from IRB consideration (*Proposed Revisions to the Common Rule for the Protection of Human Subjects in the Behavioral and Social Sciences*. Washington, DC: The National Academies Press, 2014). Many of these changes would enormously facilitate quick response field research--indeed, some quick response research would no longer be within the IRB purview if those recommendations were implemented – and as a major research stakeholder, the National Science Foundation should consider those recommendations closely and ways in which to support them.

Vulnerability

Although not covered in detail at the workshop, the many concerns that were raised connected with one that Stallings (2007) briefly touched on: that disaster victims are vulnerable. There is a growing body of literature on the mental health of disaster victims. Foa, Stein and McFarlane's (2006) study on the risk factors associated with post-traumatic stress disorder after exposure to a disaster, North and colleagues' (2002) study on psychiatric disorders among survivors of the Oklahoma City bombing, and Norris's (2006) book, *Methods for Disaster Mental Health Research*, provide some examples of the growing interest in this topic.

There is a concern among some in the academic community that, due to stress induced by the disaster, research participants are vulnerable to harm or exploitation or are not able to give informed consent and, as such, the risks and benefits of conducting disaster research should be carefully weighed before entering the field (Levine, 2004). We do not argue that disasters have no psychological impact on people. Norris and Elrod (2006: 27-28) reviewed extensive literature, finding that

> The majority of the samples (50%) showed moderate effects, indicative of prolonged stress but little psychopathology. In these samples, depending upon the study's design, there were significant differences between exposed participants and some comparison group, changes between pre-disaster and post-disaster mental health measures, or significant correlations between exposure measures and mental health measures. The remaining sample showed severe (24%) or very severe (17%) effects, indicative of a high (25-49%) or very high (≥50%) prevalence of clinically significant distress (determined on the basis of percentages scoring above established cutoff points on standardized scales of criterion-level

22

psychological disorder (determined on the basis of diagnostic instruments).

Sometimes writing on the topic is contradictory. For example, Rosenstein (2004) argues that there are no data that traumatic experiences reduce decision-making capacity (DMC). He goes on, though, to argue that people in traumatic situations show responses that call their decision making ability into question: His paper exhibits the overall equivocal character of most writing on the topic, pointing out that though there is no evidence of decision making impairment, the question has never been specifically studied, and we can deduce that some people must be impaired or at least vulnerable to being pressured to participate in a study (p. 376). His conclusion reflects this (p. 379):

> One of the major conclusions to emerge from a decade of debate regarding research with individuals with mental disorders that may affect DMC was that it is both inaccurate and stigmatizing to conclude that all or most individuals with a psychiatric diagnosis are unable to make decisions for themselves. In considering this question in the context of research in the aftermath of disaster, our main conclusion ought to be the same: that most victims of a disaster would be expected to retain DMC despite expected degrees of extreme upset. Nonetheless, for certain types of studies involving victims of disaster, there may well be compelling reasons to consider the subject population under study as being vulnerable in this regard and therefore in need of additional safeguards.

The key consideration is "certain types of studies." And there are no grounds to consider *everyone* in a disaster as vulnerable. In fact, Levine (2004) criticized the expanding ambit of vulnerability. Newman and Kaloupek (2004) reviewed a number of studies of people who had experienced various kinds of trauma, including the 9/11 attacks, domestic violence, and traffic accidents. Some participants in these reported feeling upset, but even those who were upset for the most part did not express regret at participating. Domestic violence studies elicited the most distress, situations very different from the collective stress of a disaster. Moreover, much of the concern about research participation is conceptually anchored in medical research. Rosenstein states (p. 373): "The extent to which victims of a disaster are able to make capacitated and voluntary decisions to enroll in a clinical research study is an important and virtually unexplored question." But quick-response research is not "clinical research." His arguments are related to clinical research, interventions, and interventions with a research dimension. But quick response research, especially of the character discussed in this report, is in a wholly different realm—as is, in fact, much disaster research. The entire body of writing is unhelpful. Some people in disaster might be vulnerable; some might find answering questions upsetting; some might be impaired—all possibilities in any research. There is no grounds for singling out "disaster" as a special kind of research. What appears to be happening is a sort of creeping spread of concerns about medical research out into other domains of inquiry. Psychiatric research in a disaster gets called *disaster research,* and then anxieties get grafted onto other kinds of disaster research. It is worth mentioning that the entire concept of disaster management rests on an assumption of survivor capacity: that they

should be able to take care of themselves for at least 72 hours, and phrases such as the "first first responder," referring to community self-help activities, celebrate local capacities for problem-solving and adaptability.

Moreover, people affected by disaster continue with every facet of their lives. They work, including at responsible jobs. They make purchases. They sign contracts, including for Small Business Administration loans and other post-disaster financial assistance. Some of them are public officials who continue their duties in the fire and law enforcement services or other areas of government. Indeed, the presumption of diminished capacity is especially disturbing given strong research trends over the last quarter-century that have identified the adaptive and resourceful capacities of local populations. Only a strong sense of metaphysics allows one to presume that people can act responsibly in all areas of life *except* when it comes to understanding an informed-consent document. We cannot say that an official who can make arrests and carry a sidearm, or a householder who can replace a home and car, is too vulnerable to participate in an informed way in a disaster project, or is incapable of refusing to participate in an interview.

In one study, researchers sought to assess the psychological consequences of participating in disaster research. A cross-sectional study of New Yorkers that lived in the city when the September 11th attacks took place were surveyed to assess if research inquiry posed any psychological stress on research participants.

> Altogether, 2,368 people completed the surveys, including a random sample of 1,173 respondents who received mental health services after the attacks. Results indicated that 15% of New Yorkers found some of the survey questions stressful, whereas 28% of those who sought treatment found this to be the case. However, less than 2% reported being upset at survey completion, and among these persons, only four people consented to speak to the study's mental health consultant (Boscarino et al, 2004:515).

Furthermore, stress arising from participating in a study may stem from many factors, including the nature of the event and characteristics of personal exposure, where "mass violence" is usually yield greater stress than other events (Marshall, Picou, and Gill (2003: 86. See Peek and Sutton (2003 for further comparisons of the differences and similarities of event types.). While it can be argued that most disasters have human origin, the perception of who is to blame for loss may have an effect on the level of anxiety that study participants feel after their disaster experiences (Marshall, Picou, and Gill, 2003). Studies also suggest that psychological issues present before inquiry pose the largest risk. According to Boscarino et al (2004: 515), "Although the majority of those expressing adverse reactions had sought post-disaster treatment, even among these subjects, only 3% were still upset at survey completion, and 2% wanted more information about counseling services."

In order to avoid risk of imposing stress on these individuals, some have suggested to exclude these people from the interview or include a trained counselor on the research

team (Levine, 2004; Rosenstein, 2004). However, in their study of World Trade Center evacuees, Quereshi et al (2007: 491) had a psychiatrist for referrals if any of the study participants displayed signs of severe stress from the study. They report: "Of the >1,500 participants in the study, only six participants were identified as potentially requiring referral for follow-up. Of these, only four were known to have directly made contact," a result paralleling Boscarino et al (2004).

Quereshi et al (2007: 491-492) were alert to the possibility of psychological distress amongst their research subjects, but they found—with people who had been exposed to the most direct violence—

> "…that significant increases in PTSD symptoms did not result from participation; in fact, participation may have been beneficial to some individuals. Participation was viewed as a positive and uplifting experience. Visible signs of improvement could be detected in subjects after participation, as if "a weight had been lifted from their shoulders". Participants felt their input would have an impact on the safety of high-rise buildings and that from their experience, something positive would result. Participants felt their ''story'' held important facts that could help others, and they welcomed the opportunity to share their experiences. This especially was important before the survivors had organized themselves into a more formal collective group (WTC Survivors' Network). That group now plays an activist role in high-rise safety. The study also provided many participants with an opportunity to channel their rage, anger, disbelief, and helplessness onto a target area, namely high-rise safety, thus providing a focus for these feelings and a sense of control."

As a caveat, the authors noted that,

> "The passage of time (the study began nearly 18 months after the event occurred) may have provided sufficient opportunity to process the experience; many participants reported that they would not have been able to revisit the experience in such detail at an earlier point in time. However, it should be pointed out that these findings are subject to several limitations. Namely, the fact that persons with potentially very high PTSD levels were screened out may have led to a sampling bias."

Nevertheless, the conclusion to be drawn was that participation in the study was not harmful, even with the population that had been exposed to some of the most direct terror of that day- actually escaping from the burning towers- and when the study was focused exactly on those experiences. It should be noted too, that quick response research does not typically involve gathering the detail assembled in Quereshi et al's study or intensive interviews. Rather, the contacts are far more incidental.

The key consideration in other words is not that people are under stress, but whether research is harmful. Fleischman, Collogan, and Tuma (2006: 85) assert that "Available evidence demonstrates that negative emotions are experienced by at least some individuals during research post-trauma." However, this is not the same as harm.

> Research participation may upset participants, but it does not traumatize them as a disastrous event would (Newman and Kaloupek, 2004) Trauma-inducing events involve unpredictable and uncontrollable experience, whereas disaster-focused research should be both predictable and highly controlled. The use of the term *retraumatization* is inappropriate in the disaster-research context and may lead to exaggerating the risk involved in participation.

In the combined history of the present Disaster Research Center personnel, none can recall any instances of people encountered in the field who displayed signs of trauma or grief that suggested they should not be interviewed or could not give informed consent. Out of over sixty formal interviews conducted approximately one year after the World Trade Center attack and in many dozens of informal meetings and conversations in the immediate weeks after the attack (including at Ground Zero in the first days), only one person wept and it was sufficient in that instance to express support and condolences, let the person recover, and shift the direction of the discussion. This official provided vital insight on the management of decedent affairs, which was among the most sensitive topics. In two weeks of post-tsunami fieldwork in India and Sri Lanka, one person wept at recalling the loss of his wife and the family challenges occasioned by this event. Again, the interview team cooled down the interview, but the respondent maintained his narrative which provided a clear view of the gendered implications of the loss of so many women, leaving behind husbands who had few reference points for single-father roles. We need to consider, too, the concept of relative risk, and whether a field team's questions are more upsetting than the present reality of a business district with piles of rubble and blasted buildings, or a beach with debris strewn around. Moreover, as Paton (2003) has argued, participating in disaster response is often a satisfying, even exhilarating, experience, not a pathological one. In that sense there's no reason to assume that everyone is a victim. Kendra and Wachtendorf (2003; 2006; 2007; Forthcoming) have conducted numerous interviews with participants in the waterborne evacuation of Manhattan on 9/11. In 100 interviews, including with people who were very close to the Twin Towers and who were showered with dust and debris, they universally recalled their role with pride, were glad to share their stories, and—far from being traumatized— clearly considered their participation to be their finest hour (See Linley and Joseph (2004) for discussion of growth following trauma. See Walker et al (1997: 403) for a study on sexual abuse survivors that found that "the women who participated generally found the experience to be a positive one. Only a small number of women were more upset than they had anticipated, but the vast majority felt they would have completed the survey even if they had known in advance how they would feel").

While a further review of the literature in this area is beyond the scope of this report, these examples suggest that 1) there are particular risk factors for mental health disorders

associated with disaster; 2) there is a lack of empirical research on the long-term adverse effects of disasters on mental health; and 3) there is a lack of evidence of re-traumatization among those that participate in disaster studies.

The different aspects of this problem can be divided into two distinct perspectives. On one side of the debate, some researchers consider disaster survivors to be vulnerable, raising the question of what is considered "real harm" and how the risks of research are weighed against the benefits. Contrasting this view is one grounded in an ethical orientation that celebrates people's capacity to make their own decisions, and that they should be offered the chance to participate in, or to decline to participate in, any study.

There is also the danger of over concern. Fleischman and Wood (2002: 317-318) state that "at a minimum, those who are injured, their families, those who escaped the disaster, direct observers, first responders, rescue workers, recovery personnel, and others directly affected by the terror should be afforded additional safeguards and protections." In New York City on 9/11, this could well be millions. In an egregious overreach, Chung et al (2008) argue that "The individuals and communities affected by declarations of a state of emergency or disaster should be considered "vulnerable subjects" for the purposes of human subjects research and enhanced strategies for protecting their interests and well-being should be designed into any proposed research." To take but one instance of the impracticality of this guidance, detached from actual disaster principles, is that all 254 counties in Texas received FEMA disaster declarations for public assistance after Hurricane Rita, and 22 for Individual Assistance (FEMA 2006). We cannot stop all research in Texas owing to these declarations. Or what if it is only the governor who declares a disaster? Does that count?

The overall research base, and mental health researchers themselves, are equivocal at best. None will make a blanket statement on vulnerability or diminished capacity to provide informed consent. The unsurprising conclusion one must draw is that disasters are highly stressful and miserable experiences. Some people—we can't be sure how many—will experience some symptoms of PTSD but most will not go on to develop long-term psychopathologies. A small fraction of disaster survivors—we cannot be sure who or how many—*may* be upset at the end of an interview but this is not the same as retraumatization. And being in a disaster does not mean diminished capacity for giving informed consent. Moreover, even among participants exposed to the most acute and dramatic violence, some will find their research participation to be a positive experience.

Right to Speech

The view that some local stakeholder should be consulted prior to initiating disaster research appears to be grounded in an exceptionalist view of disaster: that disaster creates conditions wherein previously acceptable behavior or inquiry is now inappropriate or even deviant (Kendra and Wachtendorf, 2005). There is no doubt that disaster conditions are stressful, and that disaster research presents scholars with ethical dilemmas. Browne and Peek (2014) have comprehensively documented potential ethical dilemmas, drawing

on their post-Katrina research. Nevertheless, all research—and indeed all human interaction—presents potential ethical dilemmas. But in the US political and cultural system, freedom of thought and inquiry are among the most highly valued rights, and are themselves of moral significance. These rights are similarly held under Article 19 of the Universal Declaration of Human Rights:

> Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers

In a special issue of the *Northwestern Law Review*, covering human subjects regulations and Institutional Review Boards, Hamburger (2007) argued that human-subjects regulations as contained in 45CFR46 constitute an unconstitutional "prior license" of speech. Opponents, such as Weinstein (2007), contradicted Hamburger's ultimate constitutional argument. But, Weinstein too, recognized the constitutional difficulties that are inherent in regulating speech-based research. The entire academic enterprise depends on free inquiry, speech, expression, and publication. Somehow, a distaste for journalistic methods and a belief in the rational superiority of science has lulled academics into thinking that the protections afforded in a free society do not apply to them or that they do not need them within their rather restricted circle. This complacency is dangerous.

A rights-based approach to disaster research extends from one of our fundamental concepts of disaster. Disasters are not merely geological or meteorological phenomena, but are also political events. Whether in the jurisdictional or legal sense or in the informal meaning of power generated by the exchange of resources and information, disasters are social. And where there are social phenomena, there are politics. An examination of disaster recovery reveals the influence of social processes that begin before the disaster event and extend throughout long-term recovery (Nigg, 1995). The dynamics of family, social class, race and ethnicity, and gender are all shaped by the exchange of resources and flow of power. Politics are conclusively implicated in the preconditions for disasters and in the trajectory of disaster recovery. The sociopolitical ecology model (Peacock and Ragsdale, 2000) helps us understand the interactions of people and place, which is the bedrock principle in hazard and disaster research.

Disaster research, published and presented, is political speech. While the right to speech is regarded to include responsibilities, that right is among the most cherished in the US political system, where the right is virtually a social default setting. It is of no less ethical significance than any of the assertions made by the new critics of disaster research. The principal investigator argues that seeking to limit, or to compel people to self-police, their political speech is itself ethically dubious.

Those who would restrict research based on the supposed harms to the subjects are therefore cautioned of the ethically dangerous implications of their arguments. In a panel focusing on this subject at the 2009 Natural Hazards Workshop, one of the attendees

suggested an embargo on research travel to an affected area. The implications of an embargo are, therefore, worth consideration. At least in the context of the US social, cultural, and political setting and in particular the context of political rights as generally understood, people in the US have the right to go wherever they want, within the scope of US territory. Restrictions are customarily grounded on only on the most compelling justification, such as established domains of locational tenure (property rights) or temporary interruptions of passage for life safety, traffic control, etc. Constraining the right to space is, in fact, an attack on liberty (Mitchell, 1995; 2003).

One of the most often-articulated arguments in this direction is that journalists operate freely, asking questions and writing articles on whatever they please, unrestricted by Federal regulations (Haggerty, 2004). While their excesses may be at times distasteful, most academics would likely resist serious encroachments on the Fourth Estate, certainly encroachments as severe as they themselves tolerate. Press freedoms are recognized as essential to healthy politics and a just society. The practice of *research* seems to be the key distinction. Research is defined in the regulations as a systematic inquiry designed to produce generalizable knowledge. Are we then to say that speech that is based on data, actual observations, and systematic methods is *unworthy* of protection? Research thus becomes a kind of thought crime: *how* one thinks about one's inquiries is the problem. It's the special kind of thinking that scientists do that makes their speech dangerous, and this is a dangerous proposition.

Schrag (2014, www.institutionalreviewblog.com) makes an explicit connection to freedom. He criticizes the NRC (2014) report for being nearly silent on the matter, and he is bold in his statement: "Freedom is a scholarly enterprise. Freedom is an ethical value. Freedom is a social benefit." He goes on to cite Rena Lederman, who was on the NRC panel that drafted the report: "…those of us working in US colleges, universities, news media, and research institutions have inherited traditions of free inquiry whose continuation is vital to this country's political, economic and social life. It would be deeply ironic if a regulatory system put in place to protect human beings were transformed into a device focused on restricting their power to know the world."

In conclusion, we have the following: A right to research that can be stated in constitutional language, rebuttal of which is equivocal; other rights which need research for their exercise; and a plain-language reading of certain fundamental texts that allow freedom of speech, inquiry, and political participation. We have no evidence of risk from participating in talk-based research of any sort, even in post-disaster mental health research, which might be supposed to be the most likely scenario to lead to harm. There is even evidence that it may be helpful. Therefore, the principal investigator sees no grounds for restricting speech via any governmental or governmentally constituted body.

It is the view of the principal investigator that the entire human subjects protection enterprise, as relates to the social sciences and humanities and as currently construed in law, regulation, and local IRB interpretation, is now so hopelessly dysfunctional that no patchwork amendment to the regulations will rectify it. Instead, the system needs to be

switched off and restarted, from scratch. This rebooting should begin with reconsidering the assumptions underlying the Belmont Report, a document which as scholars such as Hamburger (2007) have argued, uses as its "moral anchor" (2007: 457) the corrupted "research" of Naziism and Tuskegee. Instead, he argued, we might consider guidelines and ethical norms arising from American traditions of speech and inquiry.

The community of disaster scholars, rather than casting yet another entangling net around their research efforts, actually has a unique opportunity to retake some rhetorical ground. In our understanding of disasters as political events, with policy implications running all through our work, we have the strongest possible grounds for making a free speech argument on the need for preserving research rights, in keeping with the US Constitution, the Universal Declaration of Human Rights, and other statements.

Concluding Comments

The workshop provided a venue in which members of the disaster research community and officials of the National Science Foundation jointly considered the challenges and benefits of quick-response disaster reconnaissance work and the importance of the RAPID funding mechanism as a way of supporting that research method. NSF officials were able to hear directly from the research community their experiences with this form of research and their funding needs for supporting quick-response work.

The workshop provided direct input from a diverse range of scholars in the disaster research community to relevant officials of the National Science Foundation. In turn, those officials are able to consider potential modifications to the RAPID grant mechanism and what those modifications might be that will facilitate support of post-disaster quick response research.

This workshop was the first formal effort to tackle some of the substantive aspects of quick-response disaster reconnaissance research in the context of one of the prime funding mechanisms, NSF's RAPID program. As such, the workshop was an early step in formalizing much of the knowledge that has been held informally as part of the craft skills of disaster scientists, but which has been rarely, if ever, explicitly discussed. The workshop is likely to motivate ongoing consideration of quick-response research and associated challenges of collaboration, research design, ethics, and funding.

Disaster research is inherently interdisciplinary; attendees at the conference represented such areas as sociology, geography, planning, public administration, anthropology, structural engineering, and geotechnical engineering. Thus researchers from several disciplines were able to participate in discussion of quick-response challenges, share their observations with officials from NSF, and use the workshop content to inform their own future work.

For the students who assisted with the workshop, either in pre-event planning or as facilitators and project assistants, they had an invaluable opportunity to be exposed to the

most current debates on methods of quick response research, was provided by some of the sustained and emerging leaders of the field. Often students, even students well along their chosen degree paths, have little exposure to the 'work' of research; they read the products of research and assume an effortless route between project concept and published paper. They assume that they are the only ones who are puzzled (see, for example, Becker, 1986). The students involved in this described it as a valuable and encouraging experience to see so many scholars working through perplexing issues.

Most scholars of disaster agree that it is important to collect ephemeral or "perishable" data in the early stages of disaster and to see, as early as practicable, the emergency-management challenges that arise and how problems are solved. Much of what is known about disaster has been gathered in early reconnaissance trips; a clear and accurate understanding of disaster phenomena and behavioral and organizational features is necessary to the development of sound science and, therefore, to the development of sound policy that can benefit society by reducing hazards and enabling effective disaster response. As the beginning of a continuing dialogue on quick-response research, this workshop is a step toward improving that method and, therefore, toward improving disaster science.

Workshop Participants

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