

COLLABORATION AND CONFRONTATION IN INTERORGANIZATIONAL COORDINATION:
PREPARING TO RESPOND TO DISASTERS

BY

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DISSERTATION

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ABSTRACT

Situations that call for interorganizational coordination are often ones in which there is no higher authority to mandate how the cooperating organizations will work together. Scholars and practitioners often see collaboration as a solution to the challenge of egalitarian interorganizational organizing. In order to truly evaluate this premise, scholars must first define the communication behaviors that constitute collaboration. Then they must address the misconception that collaborative approaches in and of themselves somehow prevent or eliminate conflicts. Rather, as Poole (2013) reasons, whether or not collaborators confront one another to address differences may differentiate between effective collaborations and “pathological” collaborations. The present project operationalizes collaborative interaction – a term proposed by Lewis (2006) – as well as Poole’s (2013) concept of confrontation to better understand how agents involved in interorganizational coordination may or may not engage in such behaviors, and what happens as a result.

To study these phenomena, I designed a mixed-method study of interagency coordination in multi-agency disaster response exercises. In Phase 1, I observed three such exercises involving a variety of city, county and state response agencies in different geographical areas of a Midwestern state. In addition to the exercises themselves, I attended the exercise planning meetings for two of the exercises, and I interviewed fourteen members of the planning committee of the most complex exercise. I analyzed these qualitative data to better understand what kinds of coordination conflicts arise in a multi-agency disaster response exercise and how participants communicate in response to those conflicts.

I found that agency representatives were unlikely to address their concerns directly to the interfering party as soon as something prompted those concerns. Instead, they directed concerns to a liaison – often, the exercise’s lead facilitator – who may not have been in position to influence the interfering party. Other times, they held back concerns until the debrief discussion after the exercise; sometimes these debrief discussions prompted robust group problem-solving, but a few key stakeholders were almost always missing. Those agency representatives who did raise their concerns directly to the interfering party sometimes encountered resistance or indifference, but other times, they were able to

engage in dialogue about each agency's needs and to make provisional cooperative decisions about how to work together differently in the future.

Next, I used the results of Phase 1 to design a questionnaire to better understand the relationship between collaborative communication behaviors, confrontive communication behaviors, what motivates such behaviors, and how they affect exercise outcomes. In Phase 2 of the study, I distributed the online questionnaire to a sample of response professionals who had completed incident command courses at a local fire service institute. I asked participants to think of a multi-agency disaster response exercise in which they had participated in the past three years, and to answer a series of questions about their perceptions of and activities associated with this focal exercise. Participants ($n = 245$) were affiliated with a variety of types of response agencies, but the largest proportions came from fire, law enforcement, public health, and emergency management. Approximately half (47%) reported on an exercise that they had helped to plan.

My analysis evaluated a series of original scales and addressed four research questions related to the relationships between key variables. I found that collaborative interaction behaviors and confrontive interaction behaviors appear to constitute distinct but related constructs, and both showed a strong positive association with exercise participants' satisfaction with the exercise. Motivations, such as the anticipated benefit for the participant's home agency and the impression that other participating agencies appear motivated to learn, also showed strong positive associations with participants' satisfaction. The extent of the individual's involvement with exercise activities did not appear to be a strong predictor of collaborative interaction or of exercise satisfaction; neither did the agency's investment of resources in the exercise.

The study as a whole provides a rationale for future study of how confrontation may help collaborators foster productive conflict while limiting unproductive conflict – and ultimately achieve effective interorganizational coordination.

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Chapter 1: Introduction

Any catastrophic emergency has seven core threats: human, biological, radiological or nuclear, incendiary, chemical, explosive and – nowadays – cyber. There is no response organization in the world that can deal with all of those. [...] There's no single agency that's competent to deal with all of the components of any one of those.

- Fire Service Instructor

Collaborative arrangements provide organizations with the necessary alliances and, hence, resources to address increasing development and production costs, decreasing research-to-market times, and escalating problem and product complexity. At the center of these collaborative efforts are work groups composed of employees from different organizations, often meeting face-to-face only sporadically, and who stay together only for the duration of the special project.

- Stohl & Walker, 2002, p. 237

The two quotations in this epigram represent the central rationale for this project: To address complex problems – including threats to public safety – professionals with different domains of expertise must find ways to work together, often outside of the familiar structures of their home organizations. The practitioner perspective in the first quotation simply describes the need: to deal with all of the components of a catastrophic emergency. The academic perspective in the second quotation prescribes a method: “collaborative arrangements” involving temporary, project-based interorganizational work groups. In one sense, promoting collaborative approaches is a normative stance; it implies that inclusive, consensus-oriented decision-making – rather than super-imposed coordinative procedures – will produce better results for collaborators and for the collective. In another sense, however, Stohl and Walker are suggesting collaborative approaches only because they recognize that traditional, hierarchically-imposed

coordinative approaches may not be possible for interorganizational work groups. What entity would be in a position to impose and reinforce procedures for coordination? How likely is it that every collaborator would accept the dictates of some outside authority? If organizations are working together on a voluntary basis, how likely are their representatives to allow one organization's standards and practices to dominate? As these questions suggest, there are no simple solutions for interorganizational coordination, and collaborative approaches may be attractive if only due to the dearth of other viable options.

My dissertation project examines these challenges in the context of emergency management. A single large or complex incident might invoke the responsibility, authority and expertise of dozens of agencies. To manage the incident, an emergent work group must establish the infrastructure to administer personnel assignments, the movement of equipment and other assets, instrumental support for responders on the scene, safety measures, and plans for the next operational period, as well as keeping financial and personnel records. Meanwhile, teams or task forces of response professionals work on mitigating the incident according to the standards and practices of their particular disciplines. At times, however, these teams find that their tasks affect other teams or that other expertise is needed to proceed with the response. In order to be ready for the challenges of a multi-agency response to large or complex incident, responders periodically join together to plan and participate in multi-agency disaster simulation exercises. The present study focuses on multi-agency disaster exercises as a site of interorganizational coordination and, perhaps, collaboration.

Key Concepts

The key concepts I explore are coordination, collaboration, and conflict – three inter-related communication phenomena. How agents coordinate their individual activities to act collectively is one of the cornerstone topics of organizational communication. One approach to activity coordination is collaboration; although contested, this term typically refers to inclusive and consensus-driven ways of organizing. The third concept, conflict, springs naturally from the scope conditions of collaborative arrangements: interdependency among parties and goals that may be interfering or even mutually exclusive. As the mainstream popularity of the concept of collaboration has grown, so too has scholarly

interest in the topic, but theories of collaboration have often privileged breadth over depth when considering constitutive behaviors and environmental influences and, consequently, have not fully addressed how conflict can or should be handled to maximize the benefits of collaborative arrangements. More broadly, the vast literature on coordination would suggest that collaboration, one approach to coordination, is not the optimal solution for every coordination need. It can also be executed so ineffectually that it hinders rather than helps coordination. Consequently, I treat coordination as the master concept, but I study behaviors related to collaboration and conflict management in order to speak to it.

Surprisingly, contemporary models of interorganizational collaboration have not explicitly included conflict management (e.g., Stohl & Walker's (2002) *Bona Fide Group Collaboration Model*; Keyton, Ford, & Smith's (2008) *Mesolevel Communicative Model of Interorganizational Collaboration*; and Bedwell, Wildman, DiazGranados, & Associates' (2012) *Collaborative Performance Framework*). Conflict management does appear prominently in Poole's (2013) exposition on the pathologies of collaboration. In that essay, Poole described a "good collaboration" as having five qualities; it is active, founded on social interaction and relationships, empowering, emergent, and confrontational. The term confrontational suggests direct rather than indirect or avoidant approaches to conflict. Poole depicted the following enactments of confrontation: collaborators "actively confront their differences and work them through," "goad one another forward [...] without ever coming to a resolution," "inject new ideas and possibilities into the collaboration that promote creativity," and "[challenge other collaborators] to evaluate and sometimes question their activities" (p. 8). Poole's concept of confrontation looked at conflict management in the long view: Over time, are collaborators examining their differences in such a way that it does not diminish any party's capacity to act but yet reveals previously unconsidered directions for action? In the trajectory of this project, I explore how agents engage in the confrontational aspect of collaboration in their attempts to coordinate activity.

Clarification Regarding Terminology

When addressing scholarly concepts, I use the adjective “interorganizational” to describe a particular kind of relationship between agents involved in coordinative efforts. Organizations communicate primarily through individuals and groups who are formally affiliated with those organizations. For this reason, Stohl and Walker (2002) referred to work groups in which members represent different organizations. Similarly, Keyton, Ford and Smith (2008) defined interorganizational collaboration as “the set of communicative processes in which individuals representing multiple organizations or stakeholders engage when working interdependently to address problems outside the spheres of individuals or organizations working in isolation” (p. 318). What difference does organizational affiliation make? In my view, it is a proxy term; what it really means is that group members have different spheres of knowledge (i.e., expertise) and access to different material resources which they may offer to the collective cause (Faraj & Xiao, 2006).

In the context of the present study, organizational affiliation is also, in most cases, a proxy for disciplinary affiliation. Firefighters don’t just belong to a particular fire department, knowing its practices and resources; they also have disciplinary knowledge about fire prevention and mitigation. They have internalized the standards of a particular profession (Lammers & Garcia, 2009). Often, other entities want to coordinate or collaborate with them specifically because of this disciplinary expertise. Among disaster response professionals, the goal is not only to coordinate among individual organizations (e.g., County A Fire Department and County B Fire Department) but also to coordinate across disciplinary groups (e.g., fire and police). In emergency management, all such entities are referred to as agencies, and the term jurisdiction specifically addresses the separation of branches across geographical boundaries. When referring to data or concepts in the context of disaster response, I use the term “interagency” rather than “interorganizational,” because it better captures the confluence of disciplinary and jurisdictional affiliations among agents.

Anticipated Contributions

At present, organizational communication scholarship seems to treat the concept of coordination as passé, the concept of collaboration as amorphous and often idealized, and the concept of conflict management as completely unrelated to collaborative interaction. I want my work to demonstrate that coordination is still a fertile field for communication research, collaborative communication behaviors can be defined with precision, and conflict management is essential to collaborative interaction – and is perhaps its definitive challenge. I also want to elucidate the relationship between actors in situations of interorganizational coordination, particularly when organizational and disciplinary affiliations may overlap. Lastly, I hope that the particular context of the work – disaster response and preparation – invites both respect for the public good that response professionals' work represents, as well as interest in the more universal qualities of the challenges they face (i.e., emergent, rapidly-changing, high-risk, complex problems) and the ways that they communicate to achieve interagency coordination.

More specifically, investigating the concept of confrontation promises to build on extant literature on conflict and communication in three ways. Many communication scholars already promote the view that conflict trajectories consist of multiple episodes, over time, in which a variety of conflict management strategies may be enacted, and studying confrontation will complement and illustrate the idea of conflict as an ongoing cycle of initiation-response-counter-response (Folger, Poole, & Stutman, 2005). Studying confrontation may also expand on the limited purview of conflict management styles (Blake & Mouton, 1964; Kilman & Thomas, 1975; Nicotera & Dorsey, 2006) and the ways that they have been traditionally measured (e.g., Putnam & Wilson, 1982; Kilman & Thomas, 1975). Finally, studying confrontation promises to enhance our understanding of the communication behaviors that constitute productive conflict interaction (Cahn, 1990).

The study also promises a few specific contributions to the literature on collaboration. It begins to address Lewis' (2006) call for communication scholars to identify what is basic to the phenomenon of collaborative interaction. Building on Keyton, Ford, & Smith's (2008) rationale, it helps the field better understand the group communication process among organizational representatives in an

interorganizational collaborative arrangement. Lastly, extrapolating from Poole's (2013) presentation of the concept of confrontation, it begins to address whether confrontation is, in fact, associated with desirable outcomes for collaborators – including effective interorganizational coordination.

Chapter 2: Context

In this chapter, I will provide some background on emergency management, specifically disaster response and preparation, and I will explain the rationale for the specific context of the present study: multi-agency disaster response exercises as instantiations of interorganizational coordination.

Defining Disaster

The Federal Emergency Management Agency, or FEMA, defines a disaster as “an occurrence of a natural catastrophe, technological accident, or human-caused event that has resulted in severe property damage, deaths, and/or multiple injuries” (FEMA, 2014). In scholarly literature, the terms disaster or crisis connote a larger or more complex incident than the relatively isolated cases that emergency responders are dispatched to address on a day-to-day basis. For example, in the preface to their book on disaster management and community resilience, Comfort, Boin, and Demchak (2010) disclaim,

“Terrorist attacks, water shortages, critical infrastructure failures, a looming energy crisis, a continuing flow of illegal immigrants, the effects of climate change, the threat of a pandemic: societies face an array of potentially devastating threats. These are not ‘routine emergencies’ such as fires, traffic accidents, and hostage takings. These are so-called *low-chance, high-impact* events: urgent threats to societal core values and life-sustaining systems that typically require governmental intervention under conditions of deep uncertainty.” (2010, pp. 2-3)

The perspective captured in the quotation from Comfort et al. is common to many scholars in this area: a particular interest in the non-routine, urgent demands of responding to low probability, high impact events.

From an organizing perspective, what differentiates a disaster from a routine call for emergency response service is the degree of demand on public resources. Dynes, Haas, and Quarantelli (1967) encapsulated this concept in their demand-capability model. This model defines a disaster as an event that creates demand – i.e., demand from citizens for services from public and private sector organizations – that exceed those organizations’ capabilities. Tierney, Lindell, and Perry explain,

“[W]hen an extreme event impacts a vulnerable community it creates pressure on that community to prevent adverse impacts on public health, safety, and property (Lindell and Perry, 1992). [...] [A] large-scale, rapid-onset disaster is likely to also require a timely and coordinated response by many public and private sector organizations to minimize damage and disruption and restore the community to routine functioning. Such coordinated responses may be problematic both because of the magnitude and unexpected nature of the disaster demands and because the organizations that are required to respond lack sufficient training and practice.” (2001, pp. 9-10)

As Tierney et al.’s excerpt indicates, one critique of the demand-capability model is that the demand of any particular disaster is difficult to anticipate, even when based upon past disasters with similar characteristics.

On a national scale, disasters are surprisingly frequent. In the U.S., events that are sufficiently large and complex to be designated as disasters occur, on average, sixty-five times per year; if distributed evenly throughout the year, that would be five to six disasters per month (FEMA, 2011). Laypeople often make a common binary distinction when classifying disasters: Was the disaster manmade or an ‘act of God’? In the ‘act of God’ category, physical scientists classify natural hazards into eight types, based on climatological and physical characteristics: droughts, floods, tropical cyclones, tsunamis, earthquakes, landslides, volcanoes, asteroids (Nott, 2006). Manmade disasters include industrial accidents and terrorist attacks. For example, in Tierney et al.’s (2001) list of the fourteen major world disasters that occurred between 1979 and 1999, five incidents are strictly manmade: the Three Mile Island nuclear plant accident, 1979; the Bhopal toxic gas explosion, 1984; the Chernobyl nuclear disaster, 1986; the Exxon oil spill, 1989; and the Oklahoma City bombing, 1995 (p. 2). Within the United States, presidential disaster declarations have also helped shaped the nation’s conception of what counts as a disaster; declared disasters have ranged from winter storms to school shootings (Sylves, 2008).

Societies often define disasters in terms of the degree to which the event disrupts societal expectations for normal daily activity. Disasters may be compared to one another in terms of their cost – in monetary value, fatalities, injuries, or number of people rendered homeless (Tierney et al., 2001) – but

for survivors and journalists, the major story is often one of disruption (see, for example, Lambert & Fisher, 1993). Similarly, a recent emergency management textbook defines disasters in terms of their impacts, namely, “extreme events that can injure or kill great numbers of people, do extensive property damage, and disrupt community life” (Sylves, 2008, p. 5). The effects of disaster fall into three categories. The first category is direct effects: deaths, injuries, physical damage and destruction “caused by the impact of the disaster agent itself” (6). The second category is “disaster-induced” (i.e., secondary) effects, as when damage due to flood or earthquake causes fires, the release of hazardous materials, or environmental pollution. The third category is indirect effects, which Tierney et al. define as “‘ripple effects’ resulting from disruptions of in the flow of goods and services, unemployment, business interruption, and declines in levels of economic activity and productivity” (6). In fact, in economic terms, disaster-induced and indirect effects may be considered the most expensive repercussions of a disaster.

Disasters that appear frequent or even repetitive on a national scale, however, remain very unlikely to occur in any particular locality at any particular time. On a local scale, disasters are relatively infrequent. Even regional phenomena that occur more or less annually – such as forest fires, tornados or flooding – affect different cities and counties with different degrees of severity each time they occur. The constant threat of low frequency, high impact incidents – each type requiring different forms of expertise and standard operating procedures – poses a great challenge to the two pre-emptive goals of disaster management: prevention and preparedness.

Prevention as Strategy

Prevention, also known as mitigation, is intended to precede the occurrence of any particular disaster. The goal of mitigation, according to Sylves (2008), is, “to reduce or eliminate risk to people and property from hazards and their effects” (p. 21). Mitigation is often accomplished through means such as hazard identification and mapping, construction codes and other design regulations, zoning rules and land-use planning, structural controls (e.g., levees, dams, channels, etc.), and financial measures such as incentives or aid for relocation and insurance programs and requirements (Sylves, 2008, pp. 22-23). As

these examples suggest, public administrators agree upon rules and codes, and domain-specific monitors (e.g., the State Fire Marshal) enforce them.

It would be optimistic to say that mitigation is happening constantly through risk assessment, regulation, inspection, and general inquiry about causes and conditions of particular hazards. In practice, mitigation is often retrospective: effectively, prevention for incidents similar to the one that just occurred happens during and after the recovery from that incident. Mitigation efforts enjoy maximal momentum (i.e., political and popular support) in the aftermath of a disaster, when yet-unaddressed vulnerabilities are most visible and the desire to assess and limit future exposure to similar threats is greatest. As such, mitigation is commonly executed as “activities undertaken after a disaster to lessen the likelihood of future disasters” (Sylves, 2008, p. 21).

Over the past twenty years, the political sensitivity of mitigation efforts has been highlighted by the increasing power and prominence of FEMA (since 2003, subsumed under the Department of Homeland Security, or DHS). Comfort et al. explain,

“Mitigation was long considered a ‘bottom-up’ approach, engaging citizens, businesses, non-profit organizations, and communities in the shared task of increasing their capacity to reduce risk and respond effectively to potential hazards. This approach, recognized as fundamental in the 1990s, was overshadowed by the concept of prevention following the terrorist attacks of Sept 11, 2001. The concept of prevention enhances the role of government in preventing disasters from happening. In the United States, prevention traditionally justified a ‘top-down’ approach to disaster in which governments are expected to design proper prevention mechanisms for known risks. These mechanisms typically include regulation and inspection regimes and detailed lists of tasks that are mandated for each level of government, building on lessons from previous disasters and emergencies. In putting such mechanisms into place, governments must weigh the potential benefits of strong prevention policies against the cost that excessive regulation may exert on social habits, economic activities, and civil liberties.” (2010, p. 3)

Sylves provides a corroborating description of the conflict: “In effect, FEMA began to encourage or induce local officials and individuals to adopt mitigating policies. Mitigation work opened up a perennial, highly political difference of opinion between FEMA and various local officials, developers, and citizens” (22). As these assessments portray, mitigation (i.e., prevention) can be controversial and is often ill-timed, in the sense that it more easily follows a disaster than precedes it. In many cases, it is difficult to demonstrate the extent of damages or losses that have been prevented, and practitioners and citizens alike recognize that complete prevention is impossible.

Preparation as Strategy

The limited influence of prevention makes preparation even more important. While mitigation focuses on preventing disasters, preparation assumes that they will occur. This phase includes all “actions undertaken before disaster impact that enable social units to respond actively when disaster does strike,” including making emergency response plans, training emergency response employees, acquiring equipment and supplies, and facilitating drills and exercises” (Tierney et al., 2001, p. 5). The inherent difficulty, then, is preparing for the unknown.

As Comfort et al. (2010) conclude, “not all incidents and breakdowns can be prevented,” so “preparation becomes essential” (p. 3). Unfortunately, although it is indispensable, preparation cannot possibly be comprehensive. Local responders are expected to be prepared for any kind of disaster, but the range of possible disasters is very broad, with each requiring different forms of expertise. Comfort et al. explain, “Careful assessment of potential risks and informed calculation of the interdependencies among organizations that share those risks contribute significantly to effective investments in planning and preparedness actions. Yet society should also prepare for unimaginable contingencies” (2010, p. 4). Comfort’s admonition to prepare for the unimaginable sounds almost paradoxical. In practice, response agencies may not enjoy financial or political support for planning and practice for extreme disaster scenarios. As Brandsen, Boogers, and Tops (2006) pointed out, one impediment to disaster preparation is the perception of disasters as “low risk, strong impact” occurrences. Stakeholders simultaneously acknowledge that: (a) a large, complex disaster is relatively unlikely to happen to our immediate

geographic region, (b) but we have to be ready just in case it does happen, (c) so we need to be ready for a variety of possible disasters, (d) even though there is no way we can be expected to be fully prepared for any possible severe disaster.

The Lessons Learned Cycle

One guide for preparation is the archive of lessons learned from prior disasters and exercises. In fact, these lessons learned reports have a few common themes (Donahue and Tuohy, 2006). Not only do professionals engaged in disaster response experience coordination-related problems, they also seem to experience the same problems over and over again. That is, the “After Action Reports” (AARs) produced by state or federal emergency management agencies and other agencies, such as the United States Fire Association, seem to suggest problems of a recurring nature. Donahue and Tuohy (2006) studied this phenomenon by analyzing the content of “lessons learned” included in AARs from a sample of major U.S. disasters (e.g., the 1995 Oklahoma City bombing, the September 11th terrorist attacks in 2001, and Hurricane Katrina in 2005, among others). They found so much redundancy in the so-called “lessons learned” that they concluded that the lessons were not, in fact, learned, and that the convention of publishing “lessons learned” may be ineffective. Donahue and Tuohy’s analysis generated five types of recurring problems that consistently appeared in lessons-learned reporting from disasters requiring multi-disciplinary coordination: uncoordinated leadership, failed communications, weak planning, resource constraints, and poor public relations. The authors then conducted a focus group with responders who had worked on major U.S. disasters and asked them to elaborate on the problems that they experienced. Each of the five categories of persistent problems merits a brief summary here, as they foreshadow the kinds of conflicts that I observe and relate to communication scholarship in the chapters to come.

Uncoordinated leadership. Uncoordinated leadership included “unclear, multiple, conflicting, uncooperative, and isolated command structures” (p. 45). Responders that participated in Donahue and Tuohy’s focus groups described several conditions that contributed to uncoordinated leadership during disaster response. The first was a lack of trust and understanding among the different agencies (police, fire, medical, government, and others). In their view, agencies did not seem committed to multi-agency

coordination. Responders also said that temporary leadership structures that form as part of the protocol for a large or complex disaster lacked true decision-making authority, weren't respected by responders on the front lines, and sometimes engaged in petty political squabbles. Lastly, responders attributed the uncoordinated leadership to inconsistent and widely varying implementations of the federally-supported Incident Command System (ICS). They noted that responders are trained on the ICS within disciplines, not across disciplines, so they often aren't aware of inconsistencies until they are in the throes of multi-disciplinary coordination in the face of a real incident.

Failed communications. Failed communications referred to two types of communication lapses between responders: those due to the destruction of communications equipment in the disaster, and those due to the absence, underuse, or misuse of channels for interagency communication. Acknowledging that “all else relies on communication” (p. 45), responders attributed subsequent problems to the communication failures. They also saw the failure of cross-disciplinary communication efforts as stemming from unwillingness or lack of commitment to establishing a shared, multi-disciplinary system.

Weak planning. Weak planning produced plans with gaps, under-elaborated plans (i.e., not sufficiently detailed), unrealistic plans (i.e., assuming idealistic sequences of events or not accounting for possible contingencies), and plans that addressed the immediate response but failed to account for short- and long-term recovery. The category also encompassed “problems of protocol”, namely, weak knowledge about, adoption of, and ability to execute existing plans. For example, key stakeholders were sometimes unaware of roles assigned to them by an existing plan, or they were aware of their assigned roles but had never trained or practiced to perform them.

Resource constraints. The fourth category, resource constraints, referred to resources such as “personnel, equipment, supplies, commodities, [and] specialized capabilities” (p. 47). Recurring problems in this category related to the staging, verification, and placement of resources.

Poor public relations. The last category, poor public relations, addressed the persistent problem of gaining the public's compliance with ad hoc directives to ensure public safety. The authors noted that pre-incident public education is minimal and tends to rely on mainstream media, rather than on new

media or channels likely to inspire ‘viral’ distribution or transmission via word-of-mouth. These strategies do not adequately address the likelihood that people may ignore messages or, if aware of them, be unwilling to comply.

Donahue and Tuohy (2006) ultimately argue that what are reported as lessons learned are, in fact, lessons not learned. From an organizational communication perspective, the reporting of lessons learned may operate as a rational myth: a symbolic exercise that appeases the multiple institutional commitments of the emergent disaster response ‘organization’ and enables a cyclical process in which the same problems are repeatedly experienced and acknowledged without being substantially addressed.

Preparing to Respond to Disaster

During disaster response, responders from different agencies mobilize by forming ad hoc, role-based, and sometimes inter-professional teams, such as task forces and incident command teams. In these teams, members must conform to standard operating procedures and use mutually agreed upon terminology, but they must also improvise together in response to emerging, ambiguous, or contradictory information about the situation. Members must coordinate not only behavior but expertise (Majchrzak, Jarvenpaa, & Hollingshead, 2007). Because the danger to lives and property increases with each passing minute, communication challenges such as misunderstandings, protracted disagreements, and failures of coordination extract an opportunity cost that is painfully high and often, in retrospect, preventable. The response to a large or complex incident, which is simulated in exercises and training plans, often employs NIMS, the National Incident Management System, or a state-specific variation thereof; in so doing, it mobilizes a team-based system of ad hoc or emergent teams in order to flexibly respond to dynamic, time-pressured situations.

Because of the constant threat of disaster, emergency response organizations engage in ongoing preparedness activities such as training, creating disaster plans, acquiring and maintaining specialized equipment, and conducting disaster simulation exercises. For most responders in most places, however, the kinds of incidents that they train to confront never actually happen. At the same time, however, their public charge is preparedness: a constant state of readiness. Similarly, organizations across sectors value

preparedness and agility in addressing rapidly-evolving and high-impact threats as they arise (Weick & Sutcliffe, 2007).

The organization of disaster preparedness activities often involves cooperation between jurisdictions (cities, counties), response agencies (fire, police, emergency medical services, etc.), and state-level services (e.g., the state emergency management agency). The organization of disaster preparedness activities, then, provides a context for enhancing our understanding of collaborative interaction and the coordination of activity among representatives of different organizations, professions, and specializations. The present study includes the planning, execution, and after-action review of multi-agency disaster simulation exercises.

Several different kinds of work groups are implicated in the collaborative arrangements that produce disaster response training exercises. Task forces, strike teams, and incident command teams could be classified, according to Sundstrom, DeMeuse, and Futrell's (1990) typology, as "action-negotiation teams," whose work cycles consist of "brief performance events, often repeated under new conditions, requiring extended training and/or preparation" (p. 125). Other aspects of disaster preparedness, such as the creation of plans and the allocation of physical resources, would more likely be handled by two other types of teams from Sundstrom et al.'s typology: advice-involvement teams (e.g., advisory councils) and project-development teams (e.g., planning teams). All three types of teams engage cooperatively in a multi-agency exercise. In practice, the advisory team (likely a state-level governmental or inter-governmental entity) would approve the grant application to fund the exercise, the planning team (typically consisting of representatives from participating agencies) would plan the exercise, a set of action teams (available members of the participating agencies) would participate in the exercise, and, lastly, the planning team would construct an after-action review and submit the resulting report to the advisory team as a condition of the grant.

Three types of exercises are typical: full-scale, functional, and tabletop. Tabletop exercises are discussion-based (i.e., sitting around a table), and the goal is to react to a scenario and make decisions about what actions would be performed and by whom. Functional exercises are also table discussions,

but they involve an element of surprise. Instead of receiving the whole exercise scenario packet in advance, information about the scenario is provided incrementally. Participants must respond to each prompt, or “inject” as it appears. Full-scale exercises involve action in a field setting. The response is planned and executed in response to field stimuli. Elements may be “notional” – i.e., the chemical spill is not a real chemical spill – but are treated as demanding response.

As this chapter has demonstrated, multiagency disaster response exercises provide an excellent context for studying interorganizational coordination, collaboration, and conflict. The chapter that follows will examine how extant literature on these three subjects should inform an empirical study in this context.

Chapter 3: Literature Review

As an objective of organizational communication, the project of coordination is essentially, “How can we do this work together?” Collaborative approaches to coordination ask the same question, but they also more or less explicitly imply a second question: “What work should we be doing together?”

Collaborative approaches encourage the expression of different values and preferences, as well as the search for mutually-acceptable solutions. Where value differences or concerns about goal interference are expressed, there is conflict (Putnam & Poole, 1987), and how actors respond to conflict is conflict management. This literature review positions collaboration as an approach to coordination and identifies how the growing literature on interorganizational collaboration speaks in part to coordination but very little to conflict management. I explore the relationship between collaborative interaction and conflict management, and I explicate a relatively new construct, *confrontation*. My review of extant literature demonstrates the need for additional research on how parties engaged interorganizational coordination may or may not engage in collaborative interaction and confrontation – as well as what the consequences of collaborating with or without confrontation might be.

Coordination as Concept

Thinking broadly about organization design, Mintzberg (1980) posited that, “Organizational structuring, of course, focuses on the division of labor of an organizational mission into a number of distinct tasks, and then the coordination of all of these tasks to accomplish that mission in an organized way” (324). Mintzberg synthesized extant literature to produce a typology of five coordinating mechanisms. The first was direct supervision: “one individual (typically a manager) gives specific orders to others and thereby coordinates their work” (324). The second was the standardization of work processes: “the work is coordinated by the imposition (typically by analysts of the technostructure) of standards to guide the doing of the work itself, e.g., work orders, rules and regulations, etc.” (324). The third was the standardization of outputs: “the work is coordinated by the imposition (again, often by the analysts of the technostructure) of standard performance metrics or specifications concerning the outputs of the work” (324). The fourth was standardization of skills: the work is coordinate by the internalization

by individuals of standard skills and knowledge, usually before they begin to do the work” (324). The fifth and last was mutual adjustment: “individuals coordinate their own work, by communicating informally with each other” (324). The literature on team coordination tends to focus on mutual adjustment, and thus it dovetails with the literature on collaboration, although the informal communication producing coordination may or may not constitute collaboration.

When it comes to team coordination, *coordination* is often integrated into scholars’ definitions of *team* itself. For example, describing the premise of their classic book, *Teamwork: What Must Go Right, What Can Go Wrong*, Larson and LaFasto (1989) explain, “We adopted a very broad definition of team: A team has two or more people; it has a specific performance objective or recognizable goal to be attained; and coordination of activity among the members of the team is required for the attainment of the team goal or objective” (p. 19). As Larson and LaFasto’s definition exemplifies, teams are generally considered a locus of explicit and implicit coordination of individual activity among members.

The term *coordination* has been conceptualized and operationalized in several different ways. It may refer to intra-team coordination (Marks, Mathieu, & Zaccaro, 2001; Rico, Sanchez-Manzanares, Gil, & Gibson, 2008), as in the coordination of activities among individual team members, or it may refer to coordination between units in an organization (Sherman & Keller, 2011; Van de Ven, Delbecq, & Koenig, 1976; Victor & Blackburn, 1987). Most empirical studies are descriptive, but some experimental treatments of the intra-team coordination (see, for example, Saavedra, Earley, & Van Dyne, 1993) and inter-team coordination (Reid & Ng, 2006) can be found.

Coordination has been conceptualized as a cognitive phenomenon and as a behavioral phenomenon. Some authors study coordination as a cognitive phenomenon, presenting concepts such as implicit coordination (Rico et al., 2008), cross-understanding (Huber & Lewis, 2010), or overcoming representational gaps in problem orientation (Cronin & Weingart, 2007). Also in this vein, some authors focus on the influence of collective goals or cooperative goal-setting in facilitating effective coordination (Hertel, Konradt, & Orlikowski, 2004; Kleingeld, van Mierlo, & Arends, 2011). Others emphasize the cognitive by focusing on how information processing (Cronin & Weingart, 2007; De Dreu, 2007) or

information sharing (Mesmer-Magnus & DeChurch, 2009) contribute to coordination and, by extension, collective goal attainment. In contrast, other work on coordination has eschewed the cognitive to focus on the behaviors or actions that constitute coordination (Lepine, Piccolo, Jackson, Mathieu, & Saul, 2008; Marks et al., 2001). Coordination has also been conceptualized as both a form of organizational control (Gupta, Dirsmith, & Fogarty, 1994) and a form of voluntary, team-based concertive control (Barker & Tompkins, 1994).

From this brief review, it is clear that the term *coordination* denotes multiple processes. It may refer to the integration of activities between different units of analysis (individuals or organizational units), and it may indicate cognitive accommodations or behavioral accommodations. Conceptions of coordination that attempt to enumerate or sequence behaviors can tend toward the hyper-rational or mechanistic, and yet, there is clearly a need to specify the process(es) by which individuals or units integrate their activities.

Coordination in Disaster Response and Related Contexts

The coordination challenges of disaster management are not unique; increasingly, organizations in every sector see their most pressing problems as impossible to predict, rapidly evolving, only partially within their sphere of influence, and demanding the collective expertise of entities that normally operate in a fragmented way (Weick & Sutcliffe, 2007). Concepts such as resilience (Comfort, Boin, & Demchak, 2010), high-reliability organizations (Weick & Sutcliffe, 2007), fast response organizations (Faraj & Xiao, 2006), swift-starting action teams (McKinney, Barker, Davis, & Smith, 2005), and multi-team systems (Marks, DeChurch, Mathieu, Panzer, & Alonso, 2005) overlap to form a composite illustration of the interests and aspirations of scholars related to coordination under high-intensity conditions.

Resilient, high-reliability organizations. The first line of thinking suggests that organizations and communities, like individuals, can be resilient. Comfort, Boin, and Demchak (2010) defined *resilience* as “the capacity of a social system (e.g., an organization, city, or society) to proactively adapt to and recover from disturbances that are perceived within the system to fall outside the range of normal and

expected disturbances” (Comfort et al., 2010, p. 9). Writing specifically about disaster management, Comfort et al. promoted resilience as an answer to the inevitable shortcomings of response plans, namely:

“One of the key findings in this field, however, helps us explain why resilience is crucial: crisis and disaster researchers have consistently shown that there is very little political leaders and public administrators can do during the immediate aftermath of a catastrophe (especially when they lack accurate knowledge of the unfolding event). It turns out that disaster plans do not work, communication fails, and command-and-control doctrines backfire – only after some time can skilled or talented crisis managers impose some kind of order. Ultimately, the quality of response critically depends on the capacity to enhance improvisation, coordination, flexibility, and endurance – qualities that we typically associate with resilience.” (p. 11)

For Comfort et al., resilience suggested a different orientation toward disaster response; rather than promoting more elaborate, detailed response plans, they advocated for greater responder autonomy and adaptability. One sees parallels, however, to the kind of resilience that would be appealing to any organization, and improvisation and flexibility are not the hallmarks of bureaucratic systems. Along the same lines, Weick and Sutcliffe theorized about high reliability organizations (HROs), or organizations that “organize for high performance in settings where the potential for error and disaster is overwhelming” (2007, p. ix) – for which one of their five principles is a “commitment to resilience.” Weick and Sutcliffe explained, “HROs develop capabilities to detect, contain, and bounce back from those inevitable errors that are part of an indeterminate world” (p. 14). The appeal of resilience resonates for organizations as well as communities.

Fast response organizations. Faraj and Xiao (2006) drew a similar connection from medical trauma center teams to a type of organization they called the *fast response organization*. They studied a medical trauma center as an example of an organization defined by “conditions of high uncertainty and fast decision-making” (1155). Faraj and Xiao argued that extant models of coordination have overemphasized the role of organizational structure and routines in promoting effective information

processing, and distinctions between formal and informal processes of coordination obfuscate the fact that both are needed in most situations. They explained,

“Contrary to the tenets of coordination theories, in such settings the empirical record shows that formal modes of coordination do not melt away in favor of more improvised ways of coordinating. To the contrary, the dilemma of coordination in such settings is that, on the one hand, there is a need for tight structuring, formal coordination, and hierarchical decision making to ensure a clear division of responsibilities, prompt decision processes, and timely action; but, on the other hand, because of the need for rapid action and the uncertain environment, there is a competing need to rely on flexible structures, on-the-spot decision making, and informal coordination modes.” (pp. 1156-1157)

Their particular interest was in how short-term teams in fast response organizations overcome the limitations of routines in practice. They found that, for almost every incident, expertise coordination practices such as “plug-and-play” (i.e., role-based) teaming were adequate. When something went wrong or became more complicated, however, someone other than the designated expert needed to act quickly on behalf of the team and perform an “urgent intervention.” They labeled these responses as dialogic coordination practices, consisting of four kinds of practices: epistemic contestation (i.e., reconciling different perspectives), joint sensemaking, cross-boundary intervention (i.e., questioning a team member from a different discipline), and protocol breaking. Faraj and Xiao noted that conflict often accompanied the application of dialogic coordination practices; they concluded: “Because of the epistemic distance between specialists organized in communities of practice, [fast-response cross-boundary] coordination practices magnify knowledge differences and are partly contentious” (p. 1156). Faraj and Xiao’s primary research suggests, then, that scholars may want to further study how teams handle disruptions to routine plug-and-play teaming in fast response or high reliability organizations.

Swift-starting action teams. In another study emphasizing ad hoc, role-based teaming, McKinney, Barker, Davis, and Smith (2005) studied the communication practices of the crew of a 1989 United Airlines flight that executed an emergency crash landing after a mechanical failure. Their unit of

analysis was the crew, which they conceptualized as a *swift starting action team*. They defined swift starting action teams by three characteristics: “(a) They are formed of well-trained strangers from one organization—professionals with no or limited prior knowledge of others on the team, (b) they must perform well immediately—performing as they warm up, and (c) they face high stakes from the beginning” (p. 201). As Mckinney et al. pointed out, concepts such as ad hoc teams, high reliability teams (a la Weick & Sutcliffe’s high reliability organizations), and ephemeral teams are similar in the sense that they are short-term, short-task teams, but they vary in their emphasis on urgency and the severity of the consequences of failure.

Mckinney et al. (2005) proposed that training and practice in communication awareness facilitate effective adaptation in times of crisis. They explained,

“We argue that the individuals composing the crew of Flight 232, before the in-flight crisis occurred, had developed the potential to perform excellent communication processes that emerged from effective, practiced communication values and interactions. When the emergency happened, the crew was able to swiftly augment their communication interactions, enabling them to manage the crisis.” (p. 200)

Rather than prescribing particular communication values, they argued that it is essential that actors have a shared basis of understanding of the communication values prescribed by their organization, and any necessary improvisation will deviate from the pre-existing model in recognizable ways.

Multi-team systems. The Multi-team System (MTS) concept also addressed conditions identical to those connoted by terms such as high reliability organizations (Weick & Sutcliffe, 2007), swift-starting action teams (Mckinney, Barker, Davis, & Smith, 2005), and fast response organizations (Faraj & Xiao, 2006). The distinction, however, is that the goal of the MTS framework was to “[address] in detail how interdependent teams operate as a larger work unit” (Marks et al., 2004, p. 283). Mckinney et al.’s swift-starting action teams emphasized a single ad hoc team, while the other authors did not conceive of the emergent, urgent organizing as being necessarily team-based.

Marks et al. (2004) proposed four core characteristics of multi-team systems: interdependence between teams, goal hierarchies, dynamic environments, and temporal performance cycles. Interdependence between teams, they argued, consists of three dimensions, all of which must be present for two or more teams to constitute a multi-team system: (a) input interdependence, in which teams share ‘input’ resources such as people, facilities, equipment, and information; (b) process interdependence, in which “teams work collaboratively to carry out processes such as boundary spanning, communication, and integration of actions, efforts, and timing” (p. 284); and (c) outcome interdependence, in which successful goal attainment affects everyone. The goal hierarchy characteristic distinguishes between super-ordinate and sub-ordinate goals, recognizing that team-specific lower-order goals are likely to support the higher-order goals of the entire MTS. The dynamic environment characteristic addresses the need for rapid response under uncertain conditions. Lastly, the temporal performance cycle characteristic proposes episodic cycles of performance, in which component teams need varying degrees of synchronization in their efforts to achieve sub-goals as well as super-ordinate goals. The fourth characteristic expands upon the authors’ earlier development of a taxonomy of team processes (Marks et al., 2001). Due to the alignment of these characteristics with the demands of disaster response, the multi-team system could be applied to disaster response organizing.

Coordination in Postmodern Organizing

In all of the preceding examples, the authors proposed that hierarchical, bureaucratic forms of organizing were insufficient to explain what seemed to be needed to address the complex problems of the context – as well as, in the analysis of cases, what real teams and organizations seemed to be doing to produce collective and coordinated action. To take a broader view, these intellectual moves exemplify a broader intellectual movement in the study of human organizations: the distinction between ‘modern’ and ‘postmodern’ organizing (Taylor, 2005). While modern (i.e., industrial or Fordist) organizing emphasizes coordination through centralized authority, or hierarchy, and communication in the form of “command and control” language, postmodern organizing emphasizes decentralized authority, including lateral relationships between units and localized autonomy, and communication in the form of dynamic,

collaborative “team talk” (Taylor, 2005, p. 118). As the preceding models demonstrate, recent efforts in theorizing about coordination strive to address both modern and postmodern forms of organizing – and to respond to organizational threats that are increasingly ‘postmodern’, or unpredictable, fragmented, and emergent.

Collaboration as Concept

While coordination research in the modern vein may tend toward the cognitive or mechanistic, collaboration research is more likely to suffer from a lack of conceptual precision. Coordination is sometimes assumed to be an inevitable consequence of collaboration – that is, if decisions are made collaboratively, then team members will experience no misunderstanding, resistance, or other challenges during implementation. In other cases, coordination is seen as a separate process, which exists independent of collaboration and can thrive in the absence of collaborative processes.

Collaboration is a practically important, popular, but contested concept in communication studies. Its practical importance stems from the versatility of levels to which it can be applied – from the dyad to the inter-organizational network – as well as from its widely acknowledged potential to help people understand conflicts and generate more robust, more participative, and more creative solutions to shared problems. Team collaboration has become a prevalent model of workplace organizing, and governmental or advisory organizations often assemble teams, from local school boards to the United Nations Security Council, to generate cooperative solutions to our world’s most intractable problems. In the context of organizational communication, Stohl and Walker (2002) offer an especially comprehensive definition of collaboration: “the process of creating and sustaining a negotiated temporary system which spans organizational boundaries involving autonomous stakeholders with vary capabilities including resources, knowledge, and expertise and which is directed toward individual goals and mutually accountable and innovative ends” (p. 240).

In recent decades, collaboration has become a popular buzzword among practitioners of all stripes. The appeal for practitioners may relate to the way that collaborative communication both embraces the participative ideal of the U.S. political system and parallels the pro-informality ethos of

early 21st century U.S. mainstream culture. In popular use, the term collaboration often functions as an ideal type, and as Laurie Lewis argued in a review of literature relating collaboration and communication, scholars have too often imitated this idealistic imprecision (2006). She cautioned that defining collaboration as an ideal type “obfuscates readers’ abilities to distinguish what is merely desirable from what is basic to this phenomenon” (p. 223). Lewis also advocated that a substantial portion of the burden and the opportunity of refining the concept should fall to communication scholars, because collaboration is widely conceived of as a form of interaction, constituted by communication behaviors, although it may reflect cognitive states such as attitudes and values.

The potential benefits of communicating collaboratively are well established: more information, more creativity, better learning, and more satisfied group members – provided that group procedures invite participation (Beebe & Masterson, 2009, pp. 13-14). Well established, but less commonly discussed, are the disadvantages of the collaborative approach: pressure to conform, social loafing, the potential for one member to dominate, and the additional time spent discussing, reaching decisions, and coordinating individual activities (Beebe & Masterson, 2009, pp. 14-15). Collaborative approaches may also reflect a misconception about conflict, namely that all conflicts can be resolved; stakeholders in conflict may be able to establish some common ground, but it is also possible that no truly mutually acceptable solutions exist (Beebe & Masterson, 2009, p. 175).

From her review of more than 80 publications, mostly empirical studies, relating collaboration and communication, Lewis identified five ‘points of convergence,’ or commonalities, among prior definitions of collaboration. These include: (a) regarding collaboration as an activity (rather than a state or object); (b) implying a particular relationship between self and other (e.g., “working jointly”); (c) equalizing participants; (d) emphasizing process; and (e) portraying collaboration as emergent, informal and volitional. In order to overcome diversity in individual definitions, and to emphasize the communicative aspects of collaboration-as-activity, Lewis advocated that scholars adopt the term “collaborative interaction” in lieu of “collaboration” in future work.

Lewis also acknowledged that many topics related to the conceptualization and study of collaborative interaction remain contested. The points of divergence that Lewis noted include:

- (a) Regarding temporality: Is collaboration best understood as temporary, stable, or on a continuum therein?
- (b) Regarding pre-collaboration state: Should it be assumed that participants begin collaboration with differing, non-overlapping viewpoints?
- (c) Regarding goals and needs: Is there any distinction between collaboration that serves joint goals and collaboration that serves both joint and individual goals? Are these concepts distinct from one another?

In order to facilitate conceptual comparison, scholars' attempts to define what is basic to the phenomenon of collaborative interaction should, at a minimum, address topics such as these.

Teams as the Unit of Collaboration

What is not often explicitly stated is that collaborative interaction, as phenomenon, must happen between individuals (i.e., dyads) or in small groups. Although interorganizational collaboration is a topic of great scholarly interest, scholars agree that the work of collaboration occurs in, as Stohl and Walker (2002) posited, work groups comprised of people representing different organizations.

Teams are generally considered to be a sub-category of *groups*. Groups are comprised of more than two individuals – as a rule of thumb, a “small group” consists of three to twelve people – and are characterized by the fact that their members share common goals, feel a sense of belonging to the group, and exert influence on one another (Beebe & Masterson, 2009). A team is a type of group characterized by more specific or well-developed goals and greater formality in procedures, rules, roles, and responsibilities (Beebe & Masterson).

Since the 1980s, organizations have increasingly embraced team-based structures. Consequently, distinctions can be made among the various functions of *work teams*, or “interdependent collections of individuals who share responsibility for specific outcomes for their organization” (Sundstrom, DeMeuse, & Futrell, 1990, p. 120). Sundstrom et al.'s widely cited typology of work teams classifies work teams

into four categories of functional responsibility. For each category, Sundstrom et al. characterize the degree of differentiation among members, the degree of integration with entities outside of the team, the span or frequency of work cycles, and the team's typical "outputs" or work products. The four types that Sundstrom et al. propose are advice-involvement teams (e.g., advisory councils), production-service teams (e.g., manufacturing crews), project-development teams (e.g., planning teams), and action-negotiation teams (e.g., sports teams). The theoretical interests of this paper involve project-development teams and action-negotiation teams. These two types are both typically comprised of a highly differentiated body of members – that is, members are "expert specialists" and team tasks may require specialized equipment or facilities, all of which differentiate the team from other parts of the organization. The two types differ in their external integration; project-development teams may be considered "low integration" to the extent that they have autonomy to set and pursue their own preliminary deadlines, while action-negotiation teams execute events that are "closely synchronized with counterparts and support units inside the organization" (p. 125).

To draw a simple conclusion from the preceding definitions, teams are groups with more structure. Team structures are the product of human communication and decision-making; their material consequences reflect those decisions and reinforce (i.e., transmit or 'communicate') shared values (Ashcraft, Kuhn, & Cooren, 2009; Leonardi & Barley, 2008). Structures appear stable – or even permanent – due to the volume and persistence of individual's 'strategic choices' to respond to existing rules and resources in an identical way (DeSanctis & Poole, 1994). Entities external to the team, such as organizations and institutions, contribute to the availability of resources and the scope of rules (Orlikowski, 1992).

Consequently, studying teams, as opposed to groups, may intensify one's interest in how the team is influenced by or integrated with superordinate entities, such as organizations and institutions. Intra-team processes, however, also comprise a prominent subject of scholarly interest. Teams are subject to all of the same internal phenomena as groups – group formation, conflict, decision making, climate, leadership, etc. – which have garnered significant study in social psychology, organizational behavior,

and small group communication. The increasing popularity of team-based structures in contemporary organizations has made the internal processes of teams are especially interesting to management scholars who aspire to improve the overall productivity or performance of work teams.

Persistent Challenges in Group Scholarship

Within the field of communication, Poole has advocated that the small group could be *the* fundamental unit of communication research because the communication of small groups integrates a variety of micro- and macro-social forces (Poole, 1998). Furthermore, the persistent challenges for group research that Poole presents in that article have special relevance for teams, given their sharper relationship to macro-social forces. The first is the “problem of intersubjectivity,” or how to explain and predict properties of groups that “are not located in any individual, but are inter-subjective in that they are maintained by the interaction system of the group (or society)” (p. 360). The second is a problem of defining groups when, as is often the case, their boundaries are permeable and members belong to and interact with a host of other groups in other contexts (p. 360). Putnam and Stohl (1996) have suggested that scholars address these two problems by reframing the field’s definition of what a group is and does (p. 286). They have proposed the construct “bona fide group” and defined it as a group with stable but permeable boundaries, in which members develop interdependence by co-constructing identities and interpretive frames (p. 286-287; see also Putnam & Stohl, 1990). The concept applies equally well to contemporary teams; although membership and roles may be more structured in a team than a group, ambiguous or rapid changes to membership and roles are equally likely.

Diverse Team Membership

In general, teams with heterogeneous members have the potential to outperform teams with homogenous members because the former have the benefit of more perspectives, more unique information, and more ideas (Beebe & Masterson, 2009). Also, when differences between members are readily apparent, this may alert team members to the need to question their assumptions and to use structured approaches to seek members’ input and make group decisions (Cronin, Bezrukova, Weingart, & Tinsley, 2011). To capitalize on these benefits, however, team members have to avoid three common

pitfalls: (a) stereotyping, or making assumptions based on one's limited knowledge about a certain social category (Lau & Murnighan, 1998, 2005); (b) interpreting members' initial distrust or discomfort with one another as antagonistic, and using that as a justification for turning conflict about issues into personal conflict (Jehn, 1995; Polzer, Milton, & Swann, 2002); or (c) underestimating the influence of status differences on members' communication behaviors and perceptions of the team (DiTomaso, Post, & Parks-Yancy, 2007). As this very brief summary of diversity in teams suggests, diverse team membership is both promising and perilous.

Much of the research in this area has focused on sources of diversity that are visible, such as ethnicity, age, or gender (see, for example, Oetzel, 2001). A subset, however, has studied situations in which members are 'diverse' in terms of what they know. Some scholars have focused on the diversity of task-related knowledge or information that team members have or share. This vein of research distinguishes between shared information, which is known to multiple members, and unique information, which is known to only one member – a distinction which is a boon to experimental designs such as those of Stasser and Titus (Stasser & Titus, 1985, 1987), as well as the studies included in Mesmer Magnus and DeChurch's (2009) meta-analysis, but more problematic for group communication scholars such as Bonito (2007) and Hewes (2009) interested in developing cognitive models. This literature suggests that team members are generally more likely to talk about shared information than to introduce unique information (Stasser & Titus, 1987), and this self-filtering seems to be more severe when members are heterogeneous and when the structure of the task includes informational interdependence (Mesmer-Magnus & DeChurch, 2009).

Epistemic Diversity in Teams

Other scholars have conceived of 'what members know' in terms of functional expertise. Teams composed of members from different disciplines, professions, or functional areas may be called multi-disciplinary, inter-professional, or cross-functional teams. Along similar lines, Poole and Real (2003) conceptualized distinctions among multi-disciplinary, inter-disciplinary and trans-disciplinary health care teams. First, Poole and Real distinguished between three arenas of differentiation: function, discipline,

and specialty. In their view, a *function* is associated with a particular division or department in the organization, a *discipline* is the aggregate of specific training and socialization, and *specialties* are areas within a discipline. The term discipline may warrant clarification; in Poole and Real's conceptualization, a doctor and a nurse would be regarded as representing different disciplines, while an intensive care nurse and a pediatric nurse would represent different specialties within the same discipline.

Poole and Real acknowledged that, in the literature on health care teams, several terms have been used interchangeably to describe functionally different arrangements. To clarify, they suggested the following three definitions. A multi-disciplinary team is effectively a nominal team, in which members work in conjunction but function autonomously; team members' work is likely to be sequential rather than simultaneous (e.g., specialists may see the same patient at different times and share information via the patient's medical records). An inter-disciplinary team consists of professionals from two or more disciplines who work interdependently in the same setting, as when surgical teams include nurses, surgeons, and anesthesiologists. A team should be considered trans-disciplinary, they argue, when members are cross-trained in one another's disciplines.

These distinctions provide clarity, but a few features of Poole and Real's taxonomy limit its applicability to non-medical settings. Despite the authors' effort to assign the term *multi-disciplinary* to nominal teams, many scholars and practitioners continue to use multi-disciplinary as synonymous with inter-disciplinary. The term discipline itself may generate confusion due to its broad colloquial use – i.e., the discipline in question might be “medicine,” which would subsume doctors, nurses, pharmacologists, and the like. In organizational communication, Lammers and Garcia's (2009) expansion on Abbott's (1988) idea of professions as institutionalized occupations makes *profession* a less ambiguous term to describe an affiliation earned through training and socialization. This suggests the usefulness of *inter-professional* as an alternative. By comparison, *cross-functional* is less precise, because an organization's functions (divisions, departments, etc.) are likely to include members of multiple professions.

Extant literature suggests that teams that are diverse in what they know, in the inter-professional sense, will perform best after establishing collective goals (Jehn, Northcraft, & Neale, 1999), as well as

structures like rules and procedures (Pinto, Pinto, & Prescott, 1993). Inter-professional teams will not be immune to tensions related to status and hierarchy (Apker, Propp, & Zabava Ford, 2005), but the aforementioned structures should help to minimize power struggles.

In addition, members of inter-professional teams are likely to see the same problems in different ways (Cronin & Weingart, 2007; Holzer, 2012; Huber & Lewis, 2010), which can be attributed to the institutional logics associated with their professions. The greatest advantage of the term *inter-professional team* over similar or synonymous terms is that it invokes recognition of the institutional influences that differentiate a profession from an occupation. Lammers and Garcia (2009) outlined ten characteristics of professions: emotional neutrality, a body of knowledge, formal standards of conduct, a service orientation, social status, training and education, self-control on the part of the professional, social control via others' expectations of the professional, formal associations, and a professional identity (pp. 359-362). Lammers and Garcia argued that professions should be viewed as institutionalized occupations because professions exhibit the same extra-organizational influence attributed to institutional forces. They argue, "Inasmuch as professions are characterized (at a minimum) by established knowledge claims, rule-like standards, autonomous action, and participation in associations external to work organizations, they are indeed institutions manifested both within and across specific organizations" (p. 363). As Chapter 1 discussed, the conditions of interagency in the context of the present study suggest a confluence of features of interorganizational and interprofessional communication.

Extant Models of Collaboration

Scholars have proposed several models of collaboration. Early models, such as Gray's (1989), tended toward prescriptive, phased models. Gray began from a premise very similar to the one that underlies most arguments for postmodern organizing: "Under turbulent conditions organizations become highly interdependent with others in indirect but consequential ways (Emery and Trist, 1965, 1972; Trist, 1977). Under these circumstances it is difficult for organizations to act unilaterally to solve problems without creating unwanted consequences for other parties and without encountering constraints imposed by others" (1). Gray advocated for multiparty collaboration – as an alternative to "competition, hierarchy,

or incremental planning” (10) – for resolving conflicts or advancing shared visions. The collaborative process that Gray prescribed consisted of three phases, and mirrored Dewey’s classic reflective problem solving model. The first phase included developing a common definition of the problem, committing to collaborate, and identifying stakeholders and resources. The second phase included establishing ground rules and roles, searching for information, exploring options, and choosing (by consensus) a course of action. The third phase was the implementation phase, which included monitoring the agreement and ensuring compliance. Gray’s model continues to serve as a tool for action research and analysis (e.g., Prins, 2010), but it is not widely cited among communication scholars.

A more recent model in management literature builds on the attempt to enumerate a taxonomy of team processes (Marks, Mathieu, & Zaccaro, 2004) by proposing an intricate systems model of collaborative processes. In this model, Bedwell, Wildman, DiazGranados, and Associates (2012) focus on six types of collaborative behaviors in the throughput portion of the system: adaptation, extra-role, information processing, leadership, sensemaking, and task execution. The model (*Figure 1*) appears in the “Figures” section of this chapter.

Although communication behaviors are never explicitly mentioned, one can assume that the proposed collaborative behaviors would all be enacted through communication. From a communication perspective, however, this model may not be sufficiently specific about how the implied behaviors would or should be integrated to produce collaborative performance and, ultimately, distal collaborative outcomes. The nature of the collaborative performance remains somewhat opaque in this model as well.

In *Organizational Communication*, two key theoretical pieces have been published on collaborative processes: Stohl and Walker’s (2002) *Bona Fide Group Collaboration Model* (see *Figure 2*) and Keyton, Ford, and Smith’s (2008) *Mesolevel Communicative Model of Interorganizational Collaboration* (see *Figure 3*). Both specifically address the phenomenon of interorganizational collaboration. Stohl and Walker emphasize a bona fide groups perspective in order to address what they describe as changing organizational practices that change group structure and action, namely: “For some time, organizations have been situated neither in one place nor within one time; instead, they are

composed of employees located in several places, temporarily separated, moving in, through, and out of traditional organizational boundaries” (239). Stohl and Walker’s model proposed that collaborative partners unite to form a negotiated temporary system in which they cooperatively facilitate decision-making, commitment, trust, power, and knowledge management. In so doing, they address both individual goals and organizational goals.

Keyton, Ford, and Smith’s (2008) model includes some similar elements, but it emphasizes the unique features of interorganizational collaboration. They defined their scope as addressing problem-centered teams in which individuals “represent multiple and competing organizational or constituency interests” (376). One explicit aspiration of Keyton et al.’s work is to overcome the idealization bias in definitions and understandings of collaboration. Accordingly, they offered the following definition of interorganizational collaboration:

“Interorganizational collaboration is the set of communicative processes in which individuals representing multiple organizations or stakeholders engage when working interdependently to address problems outside the spheres of individuals or organizations working in isolation. The outcomes of these processes have the potential to benefit or harm the parties to the collaboration, as well as others.” (p. 381)

Keyton et al. acknowledged that the model was complex, and they further explained that the process elements should be considered iterative rather than linear: “a set of iterative communicative practices across levels that are contextually bound in a public framework and embedded in the relationships among team members and stakeholders” (383).

Two concepts in the model merit clarification: the process inputs *impact* and *investment*. Here, *impact* refers to anticipated impact, as in: “the degree to which individual parties to a collaboration believe the outcomes will influence them or their organizations” (394). The term *investment* refers to what the individual or the individual’s organization invests in the collaborative effort, including money, supplies, people, time and status. As the model depicts, a combination of these and other inputs, along with the iterative evolution of the collaborators’ shared vernacular constitutes *collaborating*. Keyton et

al. explained that the model does not include outcomes because if the collaborative process is good, the outcome will also be good.

Models reviewed. Similar to Bedwell et al.'s (2012) model, each model leaves something to be desired as one seeks to understand the communication behaviors that comprise collaborative interaction. The literatures on team structures, diverse team membership and coordination all suggest potential roadblocks or impediments for ad hoc, emergent, role-based teams, but the collaboration literature largely fails to acknowledge, much less address, these impediments. Given the lack of overarching authority and the diversity in members' perspectives, it seems likely that such groups would struggle to establish norms, and whatever norms they could develop through repetition or practice would be likely to apply only to routine situations, leaving the team at sea in the face of non-routine demands. It is particularly surprising that none of the collaborative models explicitly mention conflict or conflict management. Incorporating what the field already knows about group conflict may greatly enhance how we think about collaboration – and, in particular, how we can distinguish between more or less effective collaboration.

Conflict as Concept

Communication scholars' general warrant for studying conflict is that communication manifests conflict; communication indicates the presence of conflicting ideas, desires, or needs (Putnam, 2006). In the *Handbook of Conflict Communication*, Putnam summarized, "[C]onflict centers on incompatibilities, an expressed struggle, and interdependence among two or more parties" (p. 5). A widely cited definition of conflict is Putnam and Poole's (1987) definition: "Conflict... is defined as the interaction of interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals" (p. 552). In this definition, one also sees the scope conditions for collaboration: interdependence, the potential for goal interference due to the combination of shared and non-shared goals, and the likelihood of opposition due to the explicit inclusion of people designated to represent different perspectives and interests. Additionally, the absence of a clear authority may increase collaborators' fears that no one will arbitrate conflicts, and it will be 'every man for himself.'

Conflict scholarship continues to strive to generate knowledge that serves yet transcends specific contexts (e.g., marital relationships, labor relations, hostage negotiation, etc.), and to answer the question, “How do communication patterns differ for diverse types of productive outcomes (e.g., facilitating diversity or promoting change)?” (Putnam, 2006, p. 22). Regarding the sub-genre of conflict in work teams, Poole and Garner have argued that the three dominant perspectives – instrumental, developmental, and political – need to be better integrated, such that studies of conflict in work teams would not only address the effects of conflict on productive outcomes but would also interrogate the ongoing nature of conflict management and attend to the implications of conflict management for power and influence in work teams (2006).

As the prior paragraph suggests, conflict can be productive for groups. Deutsch (1977) is credited with early theorizing about the distinction between destructive and productive conflict. Elaborating on Deutsch, textbook authors Folger, Poole, and Stutman (2005) explained: “In productive conflicts, parties believe that all sides can attain important goals (Deutsch, 1977). Productive conflict interaction exhibits a sustained effort to bridge the apparent incompatibility of positions. This is in marked contrast to destructive conflicts, where the interaction is premised on participants’ belief that one side must win and the other must lose. Productive conflict interaction results in a solution satisfactory to all and produces a general feeling that the parties have gained something (for example, a new idea, greater clarity of others’ positions, or a stronger sense of solidarity).” (10)

Folger, Poole and Stutman (2005) posited that conflict is best understood as series of cyclical episodes, and any one episode may include elements of both destructive and productive conflict. In addition, they explained that productive conflict may not appear more charitable than destructive conflict: “Productive conflict interaction is sometimes competitive. Both parties must stand up for their own positions and strive for perceived understanding if a representative outcome is to be attained (Cahn, 1990)” (10).

The acknowledgement of differences in groups has the potential to facilitate cooperative problem solving, but it also has the potential to incite hostility and escalation or fear and avoidance. Accordingly,

Folger et al. warned that the demands of differentiation – that is, of differentiating one position from another – are themselves anxiety-inducing (17). Productive conflict, however, facilitates cooperative problem solving by managing cycles of differentiation – focusing and elaborating on differences – and integration – focusing and elaborating on common values, interests, and goals. Folger et al. summarized the benefits of differentiation as follows: a clear understanding of differences, accepting other positions as legitimate (without necessarily agreeing), and motivation to work on the conflict. What moves the group toward integration, the authors posited, is a full understanding or discussion of the issues, some kind of standoff, or the self-protective instinct, which may be prompted by discomfort or insult. In the face of differentiation, groups have the option to cooperate or compete; reasons for cooperating hearken back to master social theories like Social Exchange Theory (Emerson, 1976) and invite consideration of economic, cultural, network-based, and even altruistic rationales.

Sources of conflict in team and organizational settings. Extant scholarship has identified a number of generic sources of conflict in team and organizational settings. These conflict types emerge from the conditions of interdependency inherent in team or organizational affiliations. Common types include power differences (Bradley, 1978), the distribution of finite resources, role uncertainty (Galbraith, 1973), procedural uncertainty (Dosi & Egidi, 1991; Simon, 1957), disparities in member effort or investment, mixed motives (i.e., potential interference of individual goals with group goals, or vice versa), and task-related interdependency.

Responses to Conflict. As Nicotera and Dorsey (2006) pointed out, conflict scholarship related to organizational communication has largely focused on developing typologies of conflict management styles. These typologies have produced a variety of survey instruments, which have been used to diagnose managers and create the impetus for training programs on situational approaches to conflict management (Nicotera & Dorsey). The classic model of conflict management styles, generally attributed to Kilman and Thomas (1975), consists of five styles – avoidance, competition, compromise, accommodation, and collaboration – that map onto low-medium-high levels on two dimensions: concern for self and concern for others. For example, the conflict management style associated with low concern

for others and high concern for self is competition, and the conflict management style associated with high concern for others and low concern for self is accommodation.

The Kilman-Thomas instrument asks participants to report on what is typical for them in “situations in which you find your wishes differing from those of another person.” The Putnam and Wilson OCCI instrument asks participants how they would respond to a hypothetical scenario. One critique of all such style models is that they miss the greater trajectory of the series of conflict episodes, which over time have a “definite direction – toward escalation, toward avoidance and suppression, or toward productive work on the conflict” (Folger et al., 2005, p. 12).

Conflict outcomes. Thinking of productive conflict, one might view conflict outcomes as distributive (win-lose) or integrative (win-win) (Putnam, 1990). It is difficult to make attributions, however, because, as Folger et al., disclaimed, “At best, people have extremely limited knowledge of the implications their actions hold for others, and their ability to manage conflicts is therefore severely curtailed. Not only are parties’ behaviors inherently interwoven in conflicts, but their thinking and anticipations are as well” (13).

Confrontation as Concept

Most conflict scholarship refers to collaboration only in the nominal sense in which “collaboration” is one of the five classic conflict management styles. (Although, interestingly, Putnam’s (1984) extensive measurement of conflict styles found no distinguishable differences between compromise and collaboration, so she united the two under the label *solution orientation*.) As previously discussed, most collaboration scholarship makes little or no mention of conflict.

One notable exception is Poole’s 2012 National Communication Association Carroll C. Arnold Lecture, “Paradoxes of Collaboration,” in which he acknowledged the importance of confrontation and the management of conflict in collaborative endeavors. He argued that “a good collaboration” has five qualities: not only is it active, founded on social interaction and relationships, empowering, and emergent; it is also confrontational (Poole, 2013, p. 7). Poole explained:

“Collaborations are not always as cooperative and supportive as today’s interpretations of the term may suggest. The nature of confrontation differs. In some cases, collaborators actively confront their differences and work them through, as with Pound and Eliot [from an earlier illustration related to the poem, *The Waste Land*]. In others, collaborators goad one another forward, as Picasso and Matisse did, without ever coming to a resolution. Handled properly, differences inject new ideas and possibilities into the collaboration that promote creativity. Confrontation also challenges collaborators to evaluate and sometimes to question their activities, enhancing the quality of collaborative outcomes” (p. 8).

Poole also argued that collaborations devoid of confrontation were likely to exemplify one of several “pathologies of collaboration,” such as the cooptation of collective work products by a single participant, over-reliance on a leader in lieu of empowered participation, or “uninspired pseudo-collaboration, in which participants go through the motions of what they think should be a collaboration but in reality is nothing more than coordinated work, at the root of much ‘teamwork’ in all walks of life” (p. 14). Poole’s synthesis suggests that the presence of confrontation differentiates a perfunctory or counter-productive collaboration from a good one.

From a practitioner perspective, however, confrontation may not seem like a desirable characteristic of collaboration, and participants may not know how to respond to such confrontations. For example, Lewis, Isbell and Koschmann’s (2010) study of tensions in collaborative inter-organizational relationships found that, in response to tensions, collaborators were likely to enact strategies of conflict avoidance, such as stifling dissent in order to expedite the decision-making process or withdrawing from the collaborative effort when dissatisfied, rather than advocating for their positions. Lewis et al. also noted that stakeholders who were initially excluded from the collaboration, intentionally or not, were unlikely to have their interests considered at any point in the process. Although practitioners acknowledged the importance of “having the right people at the table” (p. 469), it appears that the lack of confrontation made it challenging to get the right people to the table, to keep them coming to meetings, and to encourage them to voice their opinions and concerns.

Confrontation Operationalized

In order to detect the presence or absence of confrontation in human interactions, one must first operationalize the construct. Poole (2013) described the following enactments of confrontation:

Collaborators “actively confront their differences and work them through”, “goad one another forward [...] without ever coming to a resolution”, “inject new ideas and possibilities into the collaboration that promote creativity”, and “[challenge other collaborators] to evaluate and sometimes question their activities” (p. 8).

Poole also posited that confrontation is a characteristic of the collaboration; in other words, the behaviors that constitute confrontation would fall within the set of behaviors that constitute collaborative interaction. Following Bedwell et al.’s (2012) model (p. 18), collaborative behaviors might include: adaptive behaviors, extra-role behaviors, information processing behaviors, leadership behaviors, sensemaking behaviors, and task execution behaviors. Keyton et al.’s (2008) model (p. 20) additionally suggests that collaborative behaviors might include facilitating others’ goal pursuits and co-creating a “vernacular” as part of the emerging identity of the new collective entity. In my view – and in layman’s terms – collaborative behaviors are likely to include: (a) asking for or giving feedback, preferences, perspectives, or opinions; (b) asking for or giving information; (c) explicitly talking about how best to work together; (d) seeking or giving information about task status in order to keep activities aligned to a shared timeline or plan; and (e) adapting behaviors or individual plans to help facilitate collective goals and other parties’ goals.

Confrontation, then, would be the style in which one performs some or all of the collaborative interaction behaviors proposed above. I propose that confrontation would include: (a) initiating contact with collaborators to seek or share feedback, preferences, perspectives, opinions, task information or status information; (b) in situations of conflict, asserting one’s preferences or opinions rather than withholding them; (c) in situations of conflict, asking the other party/ies to assert their preferences or opinions; (d) in situations of conflict, first encouraging differentiation, or the expression of differences, and second encouraging integration, or the pursuit of common interests. Regarding scope conditions, I

would expect confrontation to occur between dyads or within groups; the present study places confrontation in the context of joint work arrangements. A *situation of conflict* refers to an expressed struggle between “interdependent people who perceive opposition of goals, aims, and values, and who see the other party as potentially interfering with the realization of these goals” (Putnam & Poole, 1987, p. 552).

To say that confrontation is a style of performing collaborative interaction behaviors raises the question, “How is this different from the existing conflict style models?” I will speak to this with respect to the Kilman Thomas instrument (KTI, Kilman & Thomas, 1975), because it is the most established and widely-used. In the KTI, the items that describe a collaborative conflict management style include phrases like: “I attempt to deal with all of [the other party’s] concerns and my concerns,” “I consistently seek the other’s help in working out a solution,” “I attempt to get all concerns and issues out immediately in the open,” “I attempt to immediately work through our differences,” “I always lean toward a direct discussion of the problem,” and “I am often very concerned with satisfying all of our wishes.” Although these items connote advocacy for one’s own wishes, they do not do so as strongly as the competition style items, such as, “I am usually firm in pursuing my goals,” “I try to win my position,” and “I make some effort to get my way.” The competition items don’t preclude coming to a cooperative solution, but they more strongly suggest self-advocacy rather than avoidance. I believe that confrontation would combine elements of the collaborative style and the competitive style. It would not include elements of avoidance, accommodation or compromise. I exclude compromise in particular because it can be reached without a robust consideration of each party’s wants and needs. The heuristic of fairness suggests, “You get something you want, I get something I want, we both leave somewhat unhappy, but at least it’s fair.” To me, this style is likely to skim the surface of differentiation and circumvent integration all together.

Research Questions

In order to investigate the relationships between coordination, collaboration, conflict, and confrontation in disaster preparation, I developed four broad research questions and seven hypotheses to guide my research in two phases. Phase 1 of the research project (the methods of which are described in

Chapter 4, with results described in Chapter 5) included three research questions. Phase 2 of the study, using findings from Phase 1, posed seven hypotheses and one additional research question. First, in Phase 1, in order to analyze conflict interactions in context, I asked the following two questions:

RQ1: *What kinds of conflicts arise in a multi-agency disaster response exercise?*

RQ2: *What communication practices do exercise planners or participants use to navigate these conflicts?*

Next, I adopted “confrontation” as a sensitizing concept, and I re-analyzed the results of Research Questions 1 and 2 to answer this question:

RQ3: *How and when do confrontation behaviors emerge?*

In addressing Research Questions 2 and 3 – which relate to responses to conflicts – I also considered the outcomes of the conflict episodes for the agencies involved.

Consistent with the mixed methods design, the results of Phase 1 of the study strongly informed the design of items and scales used to measure the variables in Phase 2 of the study. (For more on questionnaire design, see Chapter 6, p. 102.) Regarding the identification of key variables, my initial conclusions came from my review of extant literature. Following Keyton, Ford, and Smith (2008), as well as Lewis, Isbell, and Koschmann (2008), I concluded that *anticipated impact*, *involvement*, and *agency resource investment* were likely to be key input variables. Keyton et al. proposed “impact” and “investment” as input variables; I expanded upon these concepts based on Lewis et al.’s applied study and my own analysis in Phase 1 of this project. *Anticipated impact* refers to the organization’s expectation that it will benefit from participating in the interorganizational collaborative project. *Involvement* addresses the authors’ concept of engagement; some organizational representatives are likely to be more involved (i.e., apply more discretionary effort, take on more responsibilities, complete more tasks, etc.) than others. *Agency resource investment* refers to the idea that some organizations are likely to invest more material resources in the collaborative project than other organizations. As Lewis, Isbell, and Koschmann found, the organizational representatives of organizations that invested greater resources in the collaborative project often assumed leadership roles and strongly influenced group processes and

outcomes. To begin building a conceptual model, I posited that these three variables (each comprised of original, context-specific scales) would serve as formative, observed variables to a latent variable, *motivation to achieve coordination*.

I also posited that collaborative interaction, a latent variable, would be comprised of three dimensions: expertise recognition, informational support, and timeliness. I drew these variables in part from Stohl and Walker's (2002) model, which included "decision-making" and "knowledge management" as process variables; I also drew from Bedwell, Wildman, DiazGranados, and Associates (2012), who included "adaptive behaviors," "information processing behaviors," "sensemaking behaviors," and "task execution behaviors" among their process variables. I considered, in light of my Phase 1 data, what kinds of decision-making, knowledge management, adaptive behaviors, information processing behaviors, sensemaking behaviors, and task execution behaviors seemed most important in this particular context. I concluded that three categories of behaviors were particularly important to interagency coordination: *expertise recognition*, *informational support*, and *timeliness*. *Expertise recognition* refers to participating organizations' mutual interest in understanding one another's unique expertise, as well as how they might draw on one another's expertise to make better collective decisions. *Informational support* refers to seeking and giving both process- and task-related information. *Timeliness* refers to conforming to a shared or mutually-agreed-upon timeline so as to synchronize or sequence efforts in some mutually-beneficial way. Upon further reflection, all three dimensions seemed to be forms of collaborative communication behaviors – per Lewis' (2006) term, collaborative interaction. To further develop the conceptual model, I posited that these three variables (each comprised of original, context-specific scales) would serve as formative, observed variables to the latent variable, *collaborative interaction*.

The literature review seemed to suggest effectiveness of coordination as one outcome of interest. Individual goal attainment and collective goal attainment also appear to be relevant outcomes. In addition, the use of a collaborative approach – as opposed to top-down coordinative approaches – might result in participants feeling more satisfied with the process of working together. I decided to propose

two outcome variables in this vein: *satisfaction with exercise process* and *satisfaction with exercise results*.

Lastly, I proposed that the degree of confrontation in the agency representative's approach to conflict management would moderate the relationship between collaborative interaction and the exercise satisfaction outcome variables. A moderating relationship would mean that higher degrees of collaborative interaction paired with a more confrontive conflict management style would result in higher degrees of satisfaction with the exercise process and with the exercise outcomes, while higher degrees of collaborative interaction paired with a less confrontive conflict management style would result in lower degrees of satisfaction with the exercise process and with the exercise outcomes. I labeled this proposed moderator *confrontive conflict management style*.

A full conceptual model that summarizes all of the aforementioned variables and relationships is shown in Figure 4. The proposed relationships can also be summarized in the following hypotheses:

H1: *Motivation to achieve coordination will be positively associated with collaborative interaction.*

H2a: *Collaborative interaction will mediate the relationship between motivation to achieve coordination and satisfaction with exercise process.*

H2b: *Collaborative interaction will mediate the relationship between motivation to achieve coordination and satisfaction with exercise results.*

H3a: *Collaborative interaction will be positively associated with satisfaction with exercise process.*

H3b: *Collaborative interaction will be positively associated with satisfaction with exercise results.*

H4a: *Confrontive conflict management style will moderate the relationship between collaborative interaction and satisfaction with exercise process.*

H4b: *Confrontive conflict management style will moderate the relationship between collaborative interaction and satisfaction with exercise results.*

As Chapter 4 will describe, the results of the qualitative analysis also strongly informed the design of the items and scales used to measure the variables identified in Hypotheses 1 through 4.

Lastly, as Chapter 5 will describe, the Phase 1 analysis also produced a set of eight tensions that seemed specific to the disaster exercise context. In order to further evaluate the validity and usefulness of these tensions, I asked an additional research question in Phase 2:

RQ4: What is the relationship between the proposed eight common exercise tensions and participants' overall satisfaction with the exercise?

The progression of research questions and hypotheses proposed here reflects the complexity of mixing methods, even in a sequential, development-oriented research design.

Conclusion

The master rationale for studying collaboration as a phenomenon of human organizing is the promise that it may facilitate breakthroughs in how humans work together to address complex problems. The argument seems to be that human collectives continue to face intractable and boundary-spanning challenges, and collaborative approaches may help them better marshal their best collective knowledge, decision-making, and capacity for action. In the sub-discipline of organizational communication, this rationale has motivated the study of collaborative processes, with a particular emphasis on interorganizational collaboration. Across social scientific disciplines, scholars have used this rationale to pursue the study of what Taylor (2005) called postmodern forms of organizing. In popular and scholarly usage, the term *collaboration* is used more diffusely, but the study of collaborative processes has the potential to advance knowledge about how to communicate effectively in postmodern organizational structures.

Figures

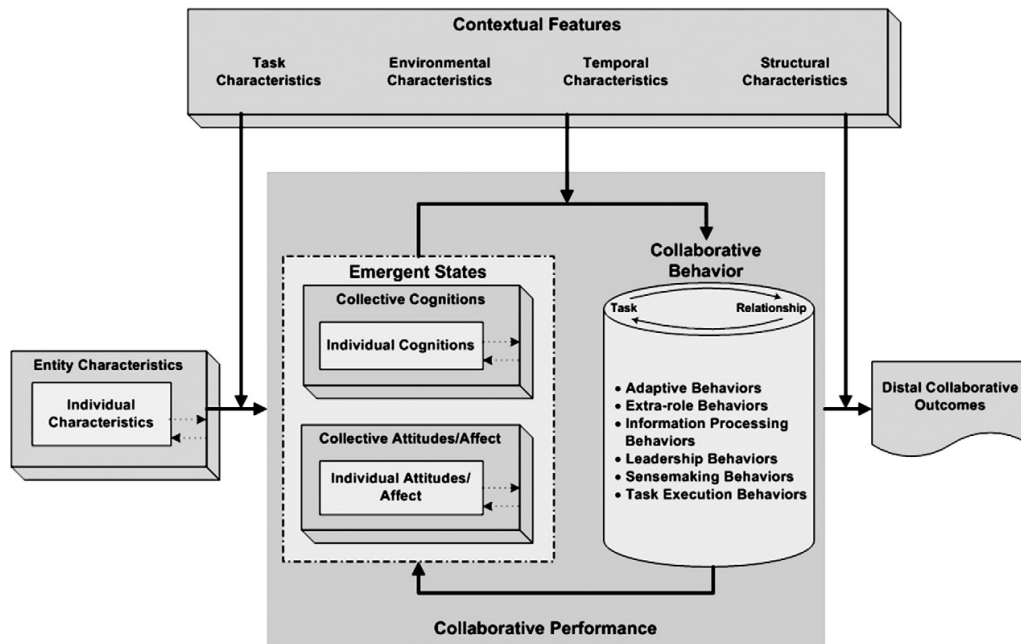


Figure 1. Collaborative Performance Framework (Bedwell, Wildman, DiazGranados, and Associates, 2012, pp. 137).

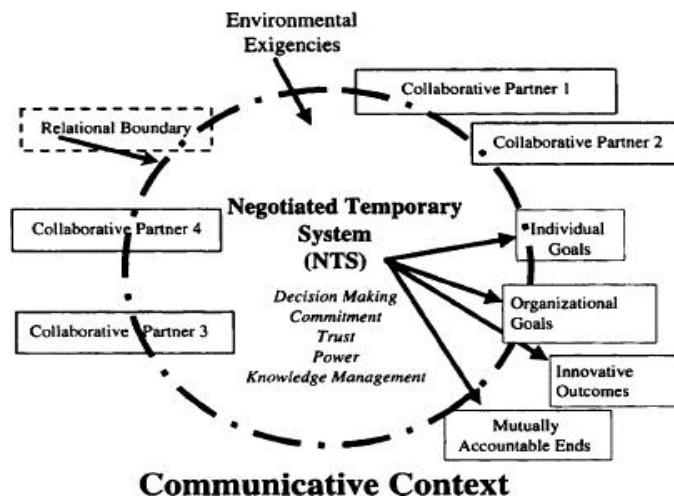


Figure 2. Bona Fide Group Collaboration Model (Stohl & Walker, 2002, p. 243).

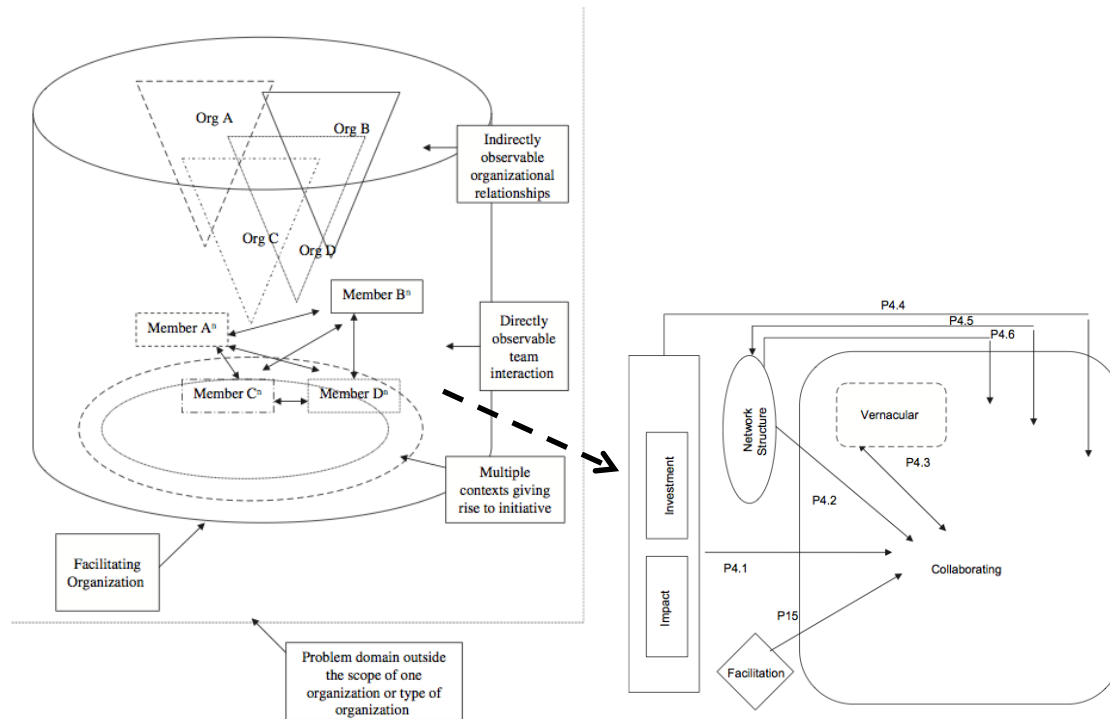


Figure 3. Mesolevel Communicative Model of Interorganizational Collaboration (Keyton, Ford, & Smith, 2008, pp. 387-389).

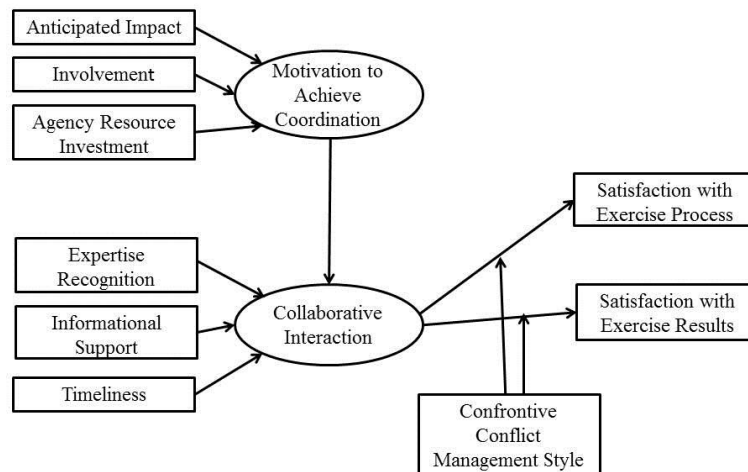


Figure 4. Proposed Conceptual Model.

Chapter 4: Methodology

In order to explore the research questions and hypotheses discussed above (pp. 40-43), I designed a mixed-method study comprised of sequential qualitative and quantitative methods. The purpose of mixing methods was development, namely, to analyze data collected by one method in order to develop an instrument to collect related data using a different method (Greene, 2007). In Phase 1 of the study, I observed three cases of disaster response exercises, and I conducted individual interviews with exercise planners. My analysis of these data informed the development of a survey instrument, which I administered to a large sample of disaster response professionals in Phase 2 of the study. In this chapter, I will review the methods I employed in both stages of the study. Results follow in chapters 5 (Phase 1 results) and 6 (Phase 2 results).

Overall Design

To *mix* methods is to interpret the data collected using different methods – either sequentially or concurrently – as part of the study design. What differentiates mixed-method studies from multiple-method (or multi-method) studies is that, in a mixed-method study, the researcher invites discoveries that could only come from employing a combination of methods that inform each other. Multiple typologies of mixed-method research designs have been proposed (see, for example, Greene, 2007; Teddlie & Tashakkori, 2009; Creswell & Clark, 2007); rather than selecting one, I will describe the distinguishing features of the design of the present study. The data were collected and analyzed within a single paradigm (interpretive, then post-positivist) in sequence, not simultaneously. Paradigms were not mixed – for example, I did not transform any qualitative data into quantitative data using content analysis or other quantitatively-oriented coding systems. I did collect multiple forms of qualitative data simultaneously, and I analyzed observation and interview data together as one corpus, as is common practice in qualitative data analysis when the goal is to verify interpretations by checking them against multiple data sources (Huberman & Miles, 1998). Thus, while the purpose for mixing methods in the overall research design was development, the purpose for mixing methods within the interpretive

paradigm was triangulation, not in the Campbell and Fiske (1959) sense, but in the sense that Huberman and Miles described as follows:

“[T]riangulation is less a tactic than a mode of inquiry. By self-consciously setting out to collect and double-check findings, using multiple sources and modes of evidence, the researcher will build the triangulation process into ongoing data collection. It will be the way he or she got to the finding in the first place – by seeing or hearing instances of it from different sources, using different methods, and by squaring the finding with others with which it should coincide.” (pp. 199-200)

As Greene (2007) advises, mixing methods should be a matter of design, not of after-thought; regardless of the field of study, when authors explicitly describe their purposes for mixing, they reinforce the intentionality of their work (Carlson, Cooper, Pilny, 2012).

Evaluating the quality of mixed-method research remains a matter of some scrutiny. The central question, it seems, is whether each method employed should be judged by its own standard criteria, or whether there should be different standards for mixed method approaches? There is no simple answer to this question (Greene, 2007), but mixed methodologists have proposed some considerations for readers, reviewers, and designers of mixed method studies. The least challenging studies to evaluate are those that mix methods within a single paradigm. For example, the intensive interviewing and observation method typically employs each method in a way consistent with the values and assumptions of the interpretive paradigm. In such cases, “there is only one set of guidelines, criteria, and processes for warranting method and knowledge claim” (Greene, 2007, p. 165).

It is more challenging to evaluate the quality of a design that mixes across paradigms as well as methodological traditions. In such cases, Greene suggested evaluating the research in two respects: quality of method and quality of inferences. Quality of method, Greene argued, reflects adherence to “the quality criteria and procedures of the tradition in which the method is being implemented. In survey methodology, for example, such quality criteria include minimization of response bias, maximization of

the number of respondents, and measurement considerations of reliability and validity” (pp. 166-167).

Quality of inferences, Greene explained, may require more of the writer and of the reviewer:

“For warranting the quality of the inferences, conclusions, and interpretations made, adopt a multiplistic stance that (a) focuses on the available data support for the inferences, using data of multiple and diverse kinds; (b) could include criteria or stances from different methodological traditions; (c) considers warrants for inquiry inferences a matter of persuasive argument, in addition to the matter of fulfilling established criteria; and (d) attends to the nature and extent of the better understanding that is reached with this mixed methods design, as that is the overall aim of mixed methods inquiry.” (p. 167)

With respect to evaluating the quality of inferences, Greene suggests that the burden is on the writer to persuasively demonstrate that not only did multiple data sources inform the researcher’s interpretations, but the mixture of the methods generated a superior understanding than could otherwise have been achieved. At the same time, however, the burden is on the reviewer and the reader to accept the use of criteria and stances from different traditions and to treat as legitimate findings that originate from the mixture itself. Although there is no simple answer to the question of how to evaluate the quality of mixed method study, the not-so-simple answers correspond well to trans-paradigmatic concerns for design quality and inference quality.

The following sections describe the methods used in Phase 1 and Phase 2, respectively. Each section also describes the research sample, the steps I took to ensure the integrity of my application of the methods, and the analytical techniques that I employed. Results follow in Chapter 5 and Chapter 6.

Phase 1

Data collection and sample. I conducted observations in the form of three cases. Case studies may be exploratory, explanatory, or descriptive (Yin, 2003); in my project, they were exploratory in the sense that I was seeking to understand the range of manifestations of collaborative and confrontational communication behaviors in the context of disaster response exercises. Each case consisted of a single exercise. The first case, the “Central State Escalation” exercise (CSE, pseudonym), was a full-scale

exercise that took place over a three-day period in early 2013. It involved over 300 participants, and it practiced the escalation of the response to a bioterrorist threat from the local response to civilian state-level assets to the state National Guard. The second case, the “Neighboring County Disaster” exercise (NCD, pseudonym), was a one-day full-scale exercise designed to exercise coordination among resources from two adjacent counties. It involved over 150 people, and participating agencies included fire departments, city and county police departments, hazardous materials and technical rescue specialists, SWAT specialists, the staff and students of a local high school, 9-1-1 dispatchers, the emergency management agencies of both participating counties, and a variety of public administrators from each county as well. The third and last case, “College Town Tornado” exercise (CTT, pseudonym), was a half-day functional exercise (i.e., tabletop format, but participants do not get any information in advance) designed to exercise how local response agencies and two higher educational institutions would work together if weather conditions required students to be evacuated from both campuses at the same time. It involved over 50 people, and participating agencies included campus police departments, campus officials, county police departments, county fire departments, county public works, county EMA, county public health, and city and county officials (e.g., city manager). What was common across all three cases was the presence of multiple civilian response agencies and the use of Homeland Security Exercise Evaluation Program (HSEEP) principles in the structure of the exercise process and its supporting materials. The cases differed in terms of format (full-scale versus functional), number of participants, types of agencies participating, as well as exercise objectives and scenarios being exercised.

Regarding geographical diversity, CSE and CTT occurred in neighboring counties in the central part of Midwestern state; although the CSE exercise was much bigger, approximately 25% of the CTT participants also participated in the CSE exercise, albeit in different roles. The NCD exercise took place in the northern part of the same Midwestern state; one of the lead evaluators from the CSE exercise was also a lead evaluator for the NCD exercise (by virtue of his state-level position), the lead facilitator of the NCD exercise was a controller for part of the CSE exercise, and the lead facilitator of the CSE exercise

served as a controller for the NCD exercise. Apart from these participants, the population of participants in the NCD exercise was completely different.

A ‘case’ traditionally has a beginning, middle and end defined by the researcher (Yin, 2003). The CSE and CTT cases began with the first planning meeting for the exercise and ended with the after-action review meeting that followed the completion of the exercise. The middle consisted of multiple planning meetings, the exercise itself, and informal on-site “hot wash” discussions (i.e., debrief discussions) at the end of work periods. The NCD case was limited to the exercise itself. It began with my arrival at the orientation before the start of the exercise, and it ended with the on-site hot wash at the end of the exercise day.

One principle of case study design is that using multiple forms of evidence bolsters the study’s construct validity; Yin (2003) instructed the researcher to seek convergence among the data generated by multiple methods. In other words, case study design typically benefits from the use of multiple methods of data collection for the purpose of triangulation. Similarly, Lofland, Snow, Anderson, and Lofland (2006) pointed out that participant observation and intensive interviewing are not separate techniques; rather, observational data often serves to generate, refine, and better interpret interview data (p. 18). The authors used the term *intensive interviewing* to include casual conversation as well as semi-structured interviews. In my project, I conducted brief, informal interviews with a convenience sample of participants throughout my observations, but I also conducted more formal, semi-structured in-depth interviews with members of the planning committee for the CSE exercise, the most complex of the three cases.

It would not be appropriate to label my methodology as ethnography. Readers may associate the combination of intensive interviewing and participant observation with *ethnography* or ethnographic methods, but the concepts are not synonymous. Interviewing and observation are the more general terms, and ethnographic studies apply them in a specific way. Miller, Hengst, and Wang (2003) describe three characteristics that render ethnographic methods distinct: (a) “sustained” (i.e., long-term) engagement with particular individuals at a research site; (b) a particular interest in relating “the details of particular

participants and practices” (p.224) to taken-for-granted cultural values; and (c) the flexibility to “revise or discard initial research questions and adjust data collection procedures as [ethnographers] position themselves physically and socially in the research site” (p. 225). Traditional ethnographies are more sustained and open-ended than my study was. In the next two sections, I provide more detail about each method.

Observations. I observed four general types of phenomena. The first was direct experience, that is, what happened to me, the researcher, while I was on the scene. The second was observed social action, which consisted of what I saw other people doing, including their verbal interactions. The third type was talk itself, or what people said, particularly, “talk in action,” which the Lofland et al. defined as “accounts or patterns of talk formulated for a particular end in a naturally occurring situation that is part of some ongoing system of action” (p. 87). I also collected and observed supplementary sources such as print materials (e.g., exercise plans and other handouts) and photographic data while in the research setting, but the analysis of these items is not specifically included in the present study.

Both full-scale exercises (CSE and NCD) had multiple sites with simultaneous activity, so I circulated among the sites. At CSE, the only site from which I was formally restricted was the venue where the policymakers participated in a condensed tabletop version of the exercise. The CTT exercise had effectively three sites; I had access to the two sites used by operational personnel but not the one in which the policymakers worked on their portion of the exercise. For CSE, I had 8 undergraduate and graduate students assist in my observations; we posted ourselves in different locations in shifts so as to observe simultaneous portions of the exercise. I asked these observers to provide detailed notes on an observation guide that I created. For CTT, I observed one of the operational locations, and a fellow graduate student observed the simultaneous activities in the second room. To accommodate participants’ privacy concerns, observers did not audio- or video-record. We did take detailed notes – either by hand or on a laptop – and we occasionally took photographs. As the observers and I engaged in informal conversations with exercise participants – for example, about what they were doing, what we were researching, or their perceptions of the exercise in general – we took notes, and these notes constitute the

records of these informal interviews. Over the course of the three cases, I personally conducted 68 hours of observation over the course of eight months.

Interviews. I also conducted more formal, semi-structured in-depth interviews with members of the planning committee for the CSE case, the largest and most complex exercise. The purpose of these interviews was to better understand the ways that agencies wanted to and did work together in the planning and execution of the exercise. I knew that their observations and reactions would be different from my own, and I wanted to better understand which aspects of the planning process, the exercise itself, and the results of the exercise were meaningful to them. (The complete interview guide can be found in Appendix A.) I recruited interviewees by sending individual requests to the agency representatives on the planning committee e-mail list; although not all elected to participate, I conducted a total of fourteen interviews, some in person, some over the phone. All interviews were audio-recorded; participants granted permission to be interviewed and audio-recorded by signing an informed consent statement. The recruitment procedures and informed consent statement were approved by the university's Institutional Review Board (IRB). The average duration of an interview was 49 minutes, and the recordings yielded 263 transcribed pages.

Analysis. My research questions (see p. 39) provided me with broad sensitizing concepts for the analysis, namely: conflict, response to conflict, and confrontation. I was also seeking illustrations of collaborative behaviors and other phenomena from extant models of collaboration, such as anticipated benefits of participating in the collaborative arrangement (Keyton, Ford, & Smith, 2008) and the kinds of activities in which adaptive behaviors or task-related behaviors might occur (Bedwell, Wildman, DiazGranados, & Associates, 2012).

There is no single definitive procedure for the analysis and interpretation of qualitative data (Corbin & Strauss, 2008). My analysis consisted of question-oriented memo-writing for constant comparison, in the style described in Corbin and Strauss (p. 69-77) and attributed to Blumer (1969). From this analysis, I moved to a more abstracted consideration of conditions, inter/actions and emotions, and consequences – Corbin and Strauss' (pp. 89-96) version of Glaser and Strauss's 6 "C"s of axial

coding (1967). These analytical techniques led me to a long list of observations about conflicts from across the three cases. As I considered how best to collate, collapse or otherwise organize these thematic observations, I realized that the next level of abstraction under which they could easily and appropriately be sorted was under the headings of types of conflict that one might expect based on extant literature (e.g., power differences, role uncertainty, procedural uncertainty, etc.). To me, this organizing structure seemed to be an elegant way to both contextualize my conclusions back in the “natural social world” (Denzin, 2002) and to contextualize them back in the terms of extant literature – simultaneously acknowledging what was both unique and potentially transferable about the conflict-related themes that I generated. In addition, I generated a set of tensions that seemed specific to the disaster exercise context. These tensions captured many of the exemplar conflicts and also spoke to the philosophical, social, and organizational challenges of conducting a disaster response exercise.

The assessment of validity in accounts of qualitative data remains a difficult and inevitably political topic (Altheide & Johnson, 1998; Denzin & Lincoln, 2008). My guiding model was Altheide and Johnson’s concept of *validity-as-reflexive-accounting* (p. 291), which basically expresses the idea that the researcher should account for his or her approach as transparently as possible, recognizing that it can never be value-neutral, and let the research community judge for itself.

Phase 2

Phase 2 involved the design and distribution of an online questionnaire, as well as quantitative analyses of the data collected. The text that follows describes the design of the instrument, sampling and recruitment procedures, an overview of analytical procedures, response and completion rates, sample characteristics, and survey variables and measures. The full instrument can be found in Appendix C.

Instrument design. Phase 2 of the study consisted of the design and distribution of an online questionnaire. The purpose of the questionnaire was to get a broader perspective on how agencies work together in multi-agency disaster response exercises across the state. There was one inclusion criterion: In order to participate, participants had to have participated in at least one multi-agency disaster exercise in the past three years. The questionnaire asked participants to think of one such exercise and answer

questions about their perceptions and behaviors related to this focal exercise. The complete list of variables included in the questionnaire appears in Appendix B.

Sampling and recruitment. A local fire service education provider allowed me to draw my sample from their student database. They provided me with contact information for over 5,000 individuals who had completed any of their six incident management courses between 2005 and 2012. From this population, I randomly selected a sample of 2,100 individuals. I chose this particular sample because I wanted participants with exposure to a wide variety of disaster response exercises across the state. Many mid-level professionals from a variety of response disciplines take one or more of the incident command courses so as to familiarize themselves with the NIMS-based common procedures that all agency representatives would use to manage a large or complex incident. If public administrators want to be eligible for federal disaster relief, then FEMA expects that the professionals managing the incident will keep records and account for costs using the Incident Command System (ICS). Each of the six courses is a stand-alone course that addresses a different aspect of how to operate using ICS.

I recruited participants by email. The data collection procedures, including recruitment and informed consent materials, were reviewed and approved by my university's Institutional Review Board. Participants read an informed consent statement embedded in the second screen of the questionnaire itself, and they were asked to express their agreement to participate by clicking "next" to proceed to the next page of the questionnaire. They were invited to copy and paste the text of the informed consent statement into a word processing document if they wished to save the information for their records. Participation was completely anonymous; no one was asked to identify their municipality, the name of their particular agency, or the real name of the exercise on which they reported. Participants were not compensated for their participation.

Overview of analytical procedures. With the exception of the confrontive style score variable, which was based on an abbreviated version of the Kilman Thomas instrument, all variables were based on original scales. Consequently, the first stage of the data analysis involved assessing scale characteristics

and refining scales using confirmatory factor analysis. In the next stage of data analysis, I used linear regression models and path analysis models to address the research questions.

Response Rate

On March 19, 2014, I sent the recruitment e-mail message with a link to the online questionnaire to 2,100 individuals randomly selected from the student database of a local fire education institute (see Chapter 4 for details). Of that group, 21% of the messages were undeliverable, meaning the email address from the database was no longer current. This reduced the recruitment pool to 1,650 individuals. Between March 19 and May 2, a total of 388 individuals accessed the online questionnaire; a total of 245 completed the questionnaire. The response and completion rates break down as shown in Table 1 in the “Tables and Figures” section at the end of this chapter. The response rate is somewhat lower than what industry standards might predict, but one reason may be that participants were not remunerated for their participation. The completion rate is very similar to that of previous study with a disaster response professional sample (18%; Carlson, Poole, Lambert, & Lammers, 2013).

Sample Characteristics: Participants

Participants were 83% male, 17% female. The number of years they had worked in their current field ranged from 2 to 44, with an average of 22 years. Their ages ranged from 26 to 71, with an average age of 50. They reported that they participated in an average of 7 single agency exercises in the past three years (range: 0 to 100) and 4 multi-agency exercises (range: 0 to 30). This translates to roughly two single agency exercises a year and one multi-agency exercise per year. These exercise participation statistics match those reported by CSE exercise participants who completed the exercise evaluation survey.

Regarding participants’ agency affiliations, the largest proportion of the sample were firefighters (34%), followed by police (11%), public health (9%), and city or county emergency management agency employees (8%). Agency affiliations representing 1 to 5% of participants appear in Table 2, as well as those representing less than 1% of participants (i.e., 1 to 2 persons per category).

Regarding special affiliations, 16% reported that they were now or had at one time been enlisted in the U.S. military. A full 70% had at least one FEMA credential: a national certification in a particular functional area (“section”) of incident management, corresponding to NIMS. Additionally, approximately half (49%) reported that they were trained in some kind of special operations role in their field, such as hazardous materials mitigation, technical rescue, EOD/ bomb squad, WMD, etc. As these figures suggest, the group was relatively experienced in their work and tended to be highly trained in optional areas of disaster response specialization. Those with special operations roles were statistically more likely to have participated in more single- and multi-agency training exercises in the past three years ($p < 0.05$), but those with FEMA credentials were not.

Sample Characteristics: Focal Exercises

Recall that each participant reported on one self-selected focal exercise; the only requirement was that it be a multi-agency exercise in which s/he participated in the last three years. Of the exercises reported on, 23% were tabletop exercises, 24% were functional exercises, and 52% were full-scale exercises. Additionally, one participant reported that the exercise was a combination of functional and full-scale formats, and three participants reported on real incidents. Participants were asked whether they helped to plan the exercise; 43% had helped to plan the exercise ($n = 130$), and 57% had not ($n = 173$).

Participants reported that an average of 13 agencies participated in their focal exercise, with a range from 1 to 140. Recall that this number includes multiple jurisdictions of the same type of agency (e.g., two fire departments from adjacent counties count as “2”). Participants also selected the types of agencies that participated. They selected an average of 9.6 agency types from the list of 30 provided. The agencies most likely to be participating in the exercise were fire (selected by 90% of participants), police (78%), ambulance (74%), city or county emergency management agency (71%), and hospitals (54%). The five agencies least likely to be participating in the exercise were WMD teams (“weapons of mass destruction”, 8%), county commissioner’s office (9%), EOD or “bomb squads” (9%), medical mutual aid (10%), and colleges or universities (12%). The majority of exercises were largely or wholly

civilian exercises. Sixty-six percent (66%) of the focal exercises had zero military participants; for only 6%, the proportion of military participants was 20% or greater.

Conceptual Model Revisited

As I began to analyze the data, it became clear to me that the conceptual model (Figure 4, p. 45) would be impossible to test in its proposed form. All of the reasons relate to measurement, and most relate specifically to the Phase 2 data set. As a general principle of structural equation modeling, models that include formative latent variables (i.e., those with the arrows pointing from observed variables to latent variable) can only be estimated if the formative latent variable includes at least two paths to reflective latent variables (i.e., those with arrows pointing from latent variable to observed variables, i.e., indicators) (Kline, 2011, pp. 280-296). As I began to prepare the data, I also found that several of the dimensions that I expected to be distinct were, in fact, unidimensional. The observed variables that I proposed would compose *collaborative interaction* (*expertise recognition*, *informational support*, and *timeliness*) turned out to be so highly correlated that I decided to treat them as one scale, rendering *collaborative interaction* an observed variable rather than a latent variable. In addition, the two outcome variables (*satisfaction with exercise process* and *satisfaction with exercise results*) were also too highly correlated to be considered distinct. To address a possible halo effect, I tried regressing all the outcome items onto one holistic overall satisfaction item (“Exercise participants met all of the overall exercise objectives.”) and assessing the standardized residual scores, but the standardized residual scores turned out to be even more highly correlated than the original item scores. Accordingly, I treated these items as part of one scale and relabeled the variable *exercise satisfaction*.

Revisions to hypotheses. These discoveries required me to alter my hypotheses; although I was able to retain the conceptual relationships between independent and dependent variables, the collapsing of some variables required me to combine “a” and “b” sub-hypotheses. The revised hypotheses appear below.

H1: *Motivation to achieve coordination will be positively associated with collaborative interaction.*

H2: *Collaborative interaction will mediate the relationship between motivation to achieve coordination and exercise satisfaction.*

H3: *Collaborative interaction will be positively associated with exercise satisfaction.*

H4: *Confrontive conflict management style will moderate the relationship between collaborative interaction and exercise satisfaction.*

Survey Variables and Measures

The following subsections address each scale in turn. Those labeled “score” (involvement score and confrontive style score) are composites formed not by averaging item scores but by conceptually-specific methods. Scale reliability, as well as assessments of normality and homoscedasticity, are reported.

Anticipated impact of exercise. In the survey instrument, this variable included items related to the participant’s perception of how much the exercise would benefit his or her agency’s goals and his or her agency’s ability to work effectively with other agencies. It also included four items about the participant’s perception of other agencies’ attitude toward the exercise. I found that the four items related to other agencies were highly correlated among themselves ($0.347 - 0.687, p < .01$) and not as highly correlated to the other items, so I decided to separate the two dimensions. From this point forward, *anticipated impact* includes only anticipation of benefits for the participant’s own agency. The new dimension, *other agencies’ motivation to cooperate*, is described and analyzed separately in the following section.

The items are listed in Table 3. These ten items demonstrated moderate scale reliability ($\alpha = 0.589$), but four items were very weakly correlated with other items and also seemed conceptually different. Consequently, I dropped these items from further consideration to produce the interim model shown in Table 4. Next, I began the confirmatory factor analysis (CFA). I used IBM SPSS AMOS 22 to calculate parameter estimates for a reflective factor model comprised of the six items in the interim model. As Table 5 demonstrates, this model’s chi square had a probability value of less than 0.05, which indicates an unacceptable model. In structural equation modeling, the chi square test tests the null

hypothesis that the proposed model is equal to an unspecified (theory-neutral) model of the same parameters (Kline, 2011, pp. 193-195). Consequently, a p value of less than 0.05 indicates that the null hypothesis should be retained; hence, the proposed model does not fit any better than a theory-neutral, randomly-specified model. Additionally, the researcher expects that as the model fit improves, the chi square value will decrease, approaching zero (assuming $DF > 0$) (Kline, 2011, pp. 193-195). Thus, the chi square value associated with the interim model served as a baseline for evaluating whether respecified models fit better.

Given these results, I re-evaluated the conceptual and empirical evidence. By removing one item at a time based on conceptual incongruence, I determined that the four-item model in Table 6 was superior. I first “built” this model using only half of my data set, comprised of randomly-selected responses. The remaining responses comprised the “test” half of the data set, and I concluded by testing the model using the full data set. The standardized regression weight estimates from this final step are shown in Table 6. I created a composite variable which computed each respondent’s average rating across the final four items. This variable, “Anticipated Impact,” was somewhat positively skewed (skewness: -1.561, s.e.: 0.15; kurtosis: 3.231; s.e.: 0.299), but when regressed onto the dependent variable, a plot of predicted values by residuals showed acceptable homoscedasticity. Means, standard deviations, and inter-item correlations for all final variables are shown in Table 16.

Other agencies’ motivation to cooperate. The next scale that I tested included items designed to measure the participant’s perception of how much other agencies in the exercise seemed to want to work with his or her agency. The four items are shown in Table 7 in the “Tables and Figures” section. This scale already showed a high degree of internal consistency ($\alpha = 0.779$), so I immediately began testing the initial model using the same techniques described in the prior section. The initial model showed an unacceptable probability level for chi square ($p < 0.05$). I made a conceptual decision to allow the error terms of the two reverse-coded items to be correlated, reasoning that reverse-coded items typically do not fully capture the variability in reasons why respondents disagreed. This minor re-specification rendered the model fit acceptable (see Table 8). I named the composite variable that

averaged the four items for each response “Others’ Motivation” (see Table 9 for standardized regression weights by item). This variable was normally distributed and, when regressed onto the dependent variable, a plot of predicted values by residuals showed acceptable homoscedasticity.

Involvement score. The questionnaire showed participants a list of exercise-related tasks and asked them to select as many as applied to what they did in conjunction with the exercise. The list was slightly different for exercise planners (19 items) than for non-planners (16 items). To address the different possible totals, I created a composite “involvement” score by summing the number of tasks selected, dividing this sum by the total number possible for planners or non-planners (respectively), and multiplying the ratio by 100 to create an integer score. Regarding interpretation, the mean value of 48.76 suggests that, on average, participants performed about half of the tasks on the lists. The lists can be found in the full survey instrument in Appendix C.

Motivation to achieve coordination. I proposed that the latent variable, motivation to achieve coordination, would consist of scale scores for anticipated impact (now anticipated impact and other agencies’ motivation to cooperate), as well as a composite score for involvement and the ordinal agency resource investment ‘score.’ Perhaps because agency resource investment was not a true scale score, the initial reliability score for these four composite scores was 0.076 – extremely low. By eliminating agency resource investment, it rose only to 0.539. Similarly, a confirmatory factor analysis of all four observed variables with the latent variable failed ($\chi^2 = 8.26, p < 0.05$). With agency resource investment dropped from the model, the model was just-identified, so no chi square value could be calculated, but the parameter estimates and fit statistics indicated very poor fit. I decided that, for Hypotheses 1 and 2, it would be better to eschew the latent variable, and include the observed variables as stand-alone variables.

Collaborative interaction. Initially, I conceived of the 9 items in the initial model as comprising three dimensions: informational support, expertise recognition, and timeliness. My initial investigation of inter-item correlations demonstrated that some items were so highly correlated that this scale should be treated as unidimensional. Thus, I began the confirmatory factor analysis with the initial model shown in Table 10. The “Near-Final Model” described in Table 11 included two additional paths: I allowed the

error terms of the first and third items to be correlated, as well as those of the third and fourth items. Conceptually, these items related specifically to talking to other people, so it seemed that their errors might vary systematically. As an alternative, I tried allowing the two time-related items' errors to be correlated, but this did not improve model fit. In the end, when I fitted the model to the full data set, I found that the two covariance links were not statistically significant, and model fit improved when I removed them. Thus, the final model included only the items shown in Table 12. The composite variable formed of the average ratings across these items, "Collaborative Interaction," showed a slight positive skew (skewness: -1.288; s.e.: 0.163; kurtosis: 3.046; s.e.: 0.324) but acceptable homoscedasticity.

Confrontive style score. In the proposed model, I labeled this variable *confrontive conflict management style*. Once I solidified the measurement strategy, I adopted the simpler and more descriptive label *confrontive style score*. The items that comprised the Confrontive Style Score variable came from Kilman and Thomas' conflict interaction styles instrument (1975). Instead of the original thirty items, I created an abbreviated 15 item version that maintained the same proportions among forced-choice items reflecting the five conflict styles as the original instrument. One traditionally scores the instrument by using a key that places "A" and "B" response options from each forced choice item into the corresponding columns representing each of the five conflict styles. The user then manually sums each column, and the highest value is considered that person's dominant conflict management style.

For the present study, I altered the instructions that accompanied the instrument. The original instructs participants to think of how they typically respond when their wishes differ from those of some other party. Instead, I asked participants to think of how they responded during the exercise when their needs or preferences differed from those of a representative or representatives of another agency. My hope was to get participants thinking of particular conflicts that they experienced during the focal exercise, as well as how they responded, rather than some general self-conception.

As I calculated individuals' conflict management style scores for each of the five styles, I noticed that many participants were closely split between two or even three styles. Kilman and Thomas acknowledge that this is not uncommon; it merely suggests that a person has more than one more

dominant or more comfortable style (1975). When I counted participants' top two highest scores for all scores of four or higher (out of a possible maximum of 6 for each dimension), I found that there were sixteen different style groups represented in my data. Seeking a parsimonious but nuanced alternative, I performed a cluster analysis (Ward's method) on the dimension scores. I found that a four-cluster solution fit the data best. Based on the cluster centers, these four clusters appeared to represent the following groups of tendencies: high scores on compromise and avoidance ("Cluster 1"; $n = 52$); relatively equal and moderately high scores on collaboration, accommodation, and compromise ("Cluster 2"; $n = 72$); high scores on compromise and collaboration ("Cluster 3"; $n = 34$); and high scores on competition and collaboration ("Cluster 4"; $n = 65$). I then calculated the distance from cluster center and identified outliers in each cluster ($\pm$ two standard deviations from the mean). In so doing, I removed eight responses. I decided to treat the cluster assignments as a pseudo-scale – in truth, ordinal rather than scale – of confrontiveness of style. Avoidance would be the least confrontive, so Cluster 1 entries were assigned a score of "1." Accommodation would be the next least confrontive style element, so Cluster 2 entries were assigned a score of "2." Compromise or collaboration without competition would be less confrontive than collaboration with competition, so Cluster 3 entries were assigned a score of "3" and Cluster 4, a score of "4." One would not expect this variable to be normally distributed but, because cluster memberships were relatively evenly distributed, it does not show a clear 'skew'-like tendency. The variance appears relatively equal across the four levels of the variable.

Satisfaction with exercise. I anticipated having two dependent variables: satisfaction with exercise process and satisfaction with exercise outcomes. For these data, however, the items proposed for each dimension were highly correlated with items from the other dimension, and when treated as separate scale scores, the dimensions themselves were correlated at 0.723. I concluded that this variable should be treated as unidimensional. Accordingly, the initial model shown in Table 13 includes all eleven "satisfaction with exercise" items from the questionnaire. Regarding scale, participants were asked to give the exercise a grade (selected from a drop-down menu with options A+ to F), and I converted these letter grades into numeric scores following a conventional grading scale. I did decide to score F as 22,

two standard deviations below the “C” score of 70, rather than scoring it as 0, which seemed like it might act as an outlier.

During the model re-specification stage, I decided to allow the error terms of the “met overall exercise objectives” and “this group of exercise participants more prepared to face the scenario exercised” items because, hypothetically, the overall exercise objectives should have been designed to make exercise participants more prepared for the type of scenario exercised (see CFA statistics, Table 14, and final model, Table 15).

The final composite variable, “Exercise Satisfaction,” was normally distributed. Its descriptive statistics can be found in Table 16.

Conclusion

Following the Phase 1 and Phase 2 methods described above, my analyses produced responses to the study’s four research questions and (after revisions due to preliminary measurement analyses) four hypotheses. The results of Phase 1 are described in Chapter 5, the process by which these results informed Phase 2 (i.e., the mixing of methods) is described in Chapter 6, and the results of Phase 2 are described in Chapter 7.

Tables and Figures

Table 1

Response and Completion Rates

Reason for Non-Completion	Percentage Removed from Sample	Percentage Continuing	<i>n</i> Continuing
Did not consent to participate	1%	99% of 388; 23% of 1650	384
Disqualified because had not participated in a multi-agency disaster response exercise in past three years	9%	90% of 388; 21% of 1650	349
Dropped out before first substantive question (“lurkers”)	12%	78% of 388; 18% of 1650	303
Dropped out before last question (partial responses)	15%	81% of 303; 63% of 388; 15% of 1650	245

Table 2

Percentage of Participations Reporting Affiliation with Agency Types

Greater than 5% of participants	1 – 5%	Less than 1%
Fire	Hazardous Materials	City Manager's Office
Police	9-1-1 or Other Emergency	Coroner
Public Health	Dispatch	Non-Profit Organization (e.g., Red Cross)
City or County Emergency Management	Hospital	Private Organization (e.g., a local manufacturing plant)
	School (College or University)	Special Weapons and Tactics (SWAT)
	Statewide Fire Mutual Aid (e.g., "MABAS")	Mayor's Office
	Technical Rescue	Public Information Office
	Ambulance	School (K-12)
	National Guard	Statewide Medical Mutual Aid (e.g., "IMERT")
	Public Works	Weapons of Mass Destruction (WMD)
	State Emergency Management Agency	
	State Incident Management Team	
	Other	
	Statewide Law Enforcement Mutual Aid (e.g., "ILEAS")	

Table 3

Initial Model (All Proposed Items) for "Anticipated Impact"

Variable	Items (10)
Anticipated Impact for Own Agency ($\alpha = 0.589$)	I felt confident that my agency would benefit from being involved in the exercise. My agency participated in this exercise mainly because it met the requirements for some kind of certification or funding for us. (reverse-coded) I did not expect this exercise to be realistic enough to really help us practice how to work together in response to a real incident. (reverse-coded) This exercise seemed like a valuable learning opportunity for people from my agency. For me personally, I saw this exercise as an opportunity to meet one of my training needs. My agency is relatively well prepared, but I expected this exercise to help other agencies that are not so well prepared. I wanted my agency to improve its responses to disasters by learning about how other agencies respond. I did not expect participants from my agency to learn anything from [Q3] about other agencies' procedures that we didn't already know. (reverse-coded)

Table 3 (continued)

My agency wanted to use the lessons learned from [Q3] to adapt our procedures to better incorporate the knowledge and expertise of other agencies.
From the beginning, I expected the lessons learned from [Q3] to be the same ones we talk about every time we exercise with other agencies. (reverse-coded)

Table 4

Interim Model for “Anticipated Impact”

Variable	Items (6)
Anticipated Impact for Own Agency ($\alpha = 0.762$)	I felt confident that my agency would benefit from being involved in the exercise. I did not expect this exercise to be realistic enough to really help us practice how to work together in response to a real incident. (reverse-coded) This exercise seemed like a valuable learning opportunity for people from my agency. I wanted my agency to improve its responses to disasters by learning about how other agencies respond. I did not expect participants from my agency to learn anything from [Q3] about other agencies’ procedures that we didn’t already know. (reverse-coded) My agency wanted to use the lessons learned from [Q3] to adapt our procedures to better incorporate the knowledge and expertise of other agencies.

Table 5

CFA Model Statistics for Anticipated Impact

Model	Data	χ^2	df	p	Change in χ^2
Interim Model	“Build” Half of Data Set	24.188	9	.004	
Final Model	“Build” Half of Data Set	3.499	2	.174	20.689
	“Test” Half of Data Set	.776	2	.679	23.412
	Full Data Set	1.428	2	.490	22.76

Note. Change in chi square is change from interim model.

Table 6

Final Model for Anticipated Impact

Variable	Items (4)	Standardized Estimated Regression Weight (Full Data Set)
Anticipated Impact for Own Agency ($\alpha = 0.733$)	I felt confident that my agency would benefit from being involved in the exercise.	0.74†
	I did not expect this exercise to be realistic enough to really help us practice how to work together in response to a real incident. (reverse-coded)	0.57***
	This exercise seemed like a valuable learning opportunity for people from my agency.	0.84***
	My agency wanted to use the lessons learned from [Q3] to adapt our procedures to better incorporate the knowledge and expertise of other agencies.	0.47***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, † p value not available because unstandardized regression weight constrained to 1.00 for analytical purposes.

Table 7

Initial Model (All Proposed Items) for Others' Motivation

Variable	Items (4)
Other Agencies' Motivation to Cooperate ($\alpha = 0.779$)	The other agencies in this exercise were interested in learning about how my agency prioritizes tasks during the response to a disaster.
	It seemed like some of the other participants in [Q3] were just in this exercise to work on their own training objectives, not to coordinate better with other agencies. (reverse-coded)
	Other agencies seemed to think that integrating knowledge and expertise from my agency was important to their ability to respond effectively.
	Other agencies seemed to think that these sorts of exercises are not particularly useful for coordination in actual emergency situations. (reverse-coded)

Table 8

CFA Model Statistics for Others' Motivation

Model	Data	χ^2	df	p	Change in χ^2
Interim Model	"Build" Half of Data Set	28.807	2	.000	
Final Model	"Build" Half of Data Set	3.331	1	.068	25.476
	"Test" Half of Data Set	.050	1	.824	28.757
	Full Data Set	1.936	2	.164	26.871

Table 9

Final Model for Others' Motivation

Variable	Items (4)	Standardized Estimated Regression Weight (Full Data Set)
Other Agencies' Motivation to Cooperate ($\alpha = 0.779$)	The other agencies in this exercise were interested in learning about how my agency prioritizes tasks during the response to a disaster.	0.77***
	It seemed like some of the other participants in [Q3] were just in this exercise to work on their own training objectives, not to coordinate better with other agencies. (reverse-coded)	0.49***
	Other agencies seemed to think that integrating knowledge and expertise from my agency was important to their ability to respond effectively.	0.74***
	Other agencies seemed to think that these sorts of exercises are not particularly useful for coordination in actual emergency situations. (reverse-coded)	0.52†
	e2 $\leftrightarrow$ e4	0.58***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, † p value not available because unstandardized regression weight constrained to 1.00 for analytical purposes.

Table 10

Initial Model (All Proposed Items) for Collaborative Interaction

Variable	Items (9)
Other Agencies' Motivation to Cooperate ($\alpha = 0.776$)	My agency's activities seemed completely separate from other agencies' activities. (reverse-coded) When there were points of confusion, I talked to representatives of other agencies to get their perspectives. We prioritized our tasks so that we could provide timely information or updates to other agencies. Representatives of other agencies asked representatives of my agency for information, assistance, or feedback. We got more information and assistance from the controllers and other exercise facilitators than from representatives of other agencies. (reverse-coded) My agency found that we didn't really need help or feedback from representatives of other agencies to do our part of the exercise. (reverse-coded) We did not have a clear sense of how our tasks aligned with what other exercise participants were doing at any given time. (reverse-coded) No one approached or contacted my agency to talk about how our agencies should be working together. (reverse-coded) Most other agencies tried to stay in synch with the exercise timeline.

Table 11

CFA Model Statistics for Collaborative Interaction

Model	Data	χ^2	df	p	Change in χ^2
Interim Model	"Build" Half of Data Set	55.438	27	.001	
Near-Final Model	"Build" Half of Data Set	2.898	3	.408	52.54
	"Test" Half of Data Set	5.302	3	.151	50.136
	Full Data Set	7.614	3	.055	47.824
Final Model	Full Data Set	8.342	5	0.138	47.098

Table 12

Final Model for Collaborative Interaction

Variable	Items (5)	Standardized Estimated Regression Weight (Full Data Set)
Other Agencies' Motivation to Cooperate ($\alpha = 0.779$)	When there were points of confusion, I talked to representatives of other agencies to get their perspectives.	0.58***
	We prioritized our tasks so that we could provide timely information or updates to other agencies.	0.69***
	Representatives of other agencies asked representatives of my agency for information, assistance, or feedback.	0.66***
	No one approached or contacted my agency to talk about how our agencies should be working together. (reverse-coded)	0.52***
	Most other agencies tried to stay in synch with the exercise timeline.	0.56†

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, † p value not available because unstandardized regression weight constrained to 1.00 for analytical purposes.

Table 13

Initial Model (All Proposed Items) for Exercise Satisfaction

Variable	Items (11)
Other Agencies' Motivation to Cooperate ($\alpha = 0.902$)	The participants included the right people in terms of level and mix of disciplines.
	There was a lot of flexibility when decisions were made; people were open to discussing different options.
	Exercise participants were able to adapt to changing conditions
	Exercise participants met all of the overall exercise objectives.
	The process of working on [Q3] was actually enjoyable.
	The exercise produced important lessons learned related to inter-agency coordination.
	My agency learned more about other agencies' priorities in a disaster like the one we simulated.
	Because of this exercise, this group of exercise participants is better prepared to respond to real incidents.
	After this exercise, I believe my agency is better prepared to deal successfully with the scenario that was exercised.
	This exercise allowed my agency to practice and improve priority capabilities
	The exercise was well organized.

Table 14

CFA Model Statistics for Exercise Satisfaction

Model	Data	χ^2	<i>df</i>	<i>p</i>	Change in χ^2
Interim Model	“Build” Half of Data Set	157.300	44	.000	
Final Model	“Build” Half of Data Set	.807	1	.369	156.493
	“Test” Half of Data Set	1.322	1	.250	155.978
	Full Data Set	.154	1	.694	157.146

Table 15

Final Model for Exercise Satisfaction

Variable	Items (4)	Standardized Estimated Regression Weight (Full Data Set)
Other Agencies' Motivation to Cooperate ($\alpha = 0.840$)	Exercise participants met all of the overall exercise objectives.	0.54†
	Because of this exercise, this group of exercise participants is better prepared to respond to real incidents.	0.75***
	After this exercise, I believe my agency is better prepared to deal successfully with the scenario that was exercised.	0.86***
	This exercise allowed my agency to practice and improve priority capabilities	0.82***
	e1 $\leftarrow$ $\rightarrow$ e2	0.23**

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, † p value not available because unstandardized regression weight constrained to 1.00 for analytical purposes.

Table 16

Means, Standard Deviations, and Inter-item Correlations for Key Variables

	Mean	s.d.	1	2	3	4	5
Anticipated Impact	4.32	0.73					
Others' Motivation	3.77	0.85	.540**				
Involvement	48.76	20.48	.252**	.193**			
Collaborative							
Interaction	4.07	0.67	.508**	.526**	.309**		
Confrontive Style							
Score	2.49	1.14	.015	-.001	.018	.044	
Exercise Satisfaction	89.60	8.02	.432**	.478**	.170**	.431**	.170*

Note. * $p < 0.05$, ** $p < 0.01$

Chapter 5: Phase 1 Results

Introduction

Following the methods described in chapter 4, Phase 1 of the study sought to address the following research questions: (a) what kinds of conflicts arise in a multi-agency disaster response exercise? (RQ1); (b) what communication practices do exercise planners or participants use to navigate these conflicts? (RQ2); and (c) how and when do confrontation behaviors emerge? (RQ3).

The responses that follow explore the phenomena under study in the context of multi-agency disaster response exercises.

In the interpretive tradition, the conclusions the researcher draws from qualitative data should be grounded in the particular context as well but can also be viewed as potentially transferable to other contexts in which the focal concepts or phenomena might also be found. Accordingly, I chose to present my findings in two ways. First, I present a set of emic themes – related to conflict incidents – organized according to their correspondence to an etic framing structure: the seven sources of conflict typically found in team and organizational settings that I outlined in my literature review. These seven sources of conflict were power differences, finite resources, role uncertainty, procedural uncertainty, disparities in team member effort or involvement (including turnover, absenteeism, and social loafing), mixed motives (i.e., shared versus non-shared goals), and task-related interdependency. This approach helped me contextualize my emic themes in an etic framework. It also helped me acknowledge both what was and was not unique about these particular data. In this section, I present illustrations of particular conflicts for each source-of-conflict category, as well as a category-level analysis of responses to the conflicts, instances of confrontation (as defined on p. 38 in Chapter 3), and consequences of the response for the exercise and for participating agencies. In this way, each section addresses all three of the aforementioned research questions, and the sections cumulatively present a range of different conflicts, responses, and confrontations.

Second, I present a set of observed sources of conflict that seemed, in my analysis, entirely specific to the multi-agency disaster exercise context. As I analyzed the data, I saw these sources of

conflict as substantively different from the kinds of conflicts that I could classify into existing categories. They appeared to me to be tensions, perhaps dialectical in nature, that any exercise must navigate – and for which there are no simple normative answers. I present these tensions as “Eight Common Tensions in Disaster Exercises” (see Table 17). Because these conclusions arose from the broader set of source-of-conflict exemplars, I present them without additional substantiation from primary sources.

Power Differences

In the context of interpersonal communication, power has been defined as follows:

“Power is the ability to control one's own need satisfaction and often the need satisfaction of others. Whereas high power persons are able to facilitate or prevent the need satisfaction of those low in power, low power persons are dependent upon highs for their need satisfaction.” (Bradley, 1978, p. 34).

Sources of power in group and organizational settings include the power to reward or punish, authority to make decisions that affect others, and influence due to others' desire to be affiliated with the target individual (Beebe & Masterson, 2009). Three themes from the case study analysis exemplified power differences as a source of conflict: (a) “My boss told me to go”; (b) “Get out your golden pen”; and (c) “Whose exercise is it?” I will explore each one in turn.

“My boss told me to go.” In the interviews with exercise planners, the first question I asked was, “How did you first become involved with the exercise?”. Several planners replied that their supervisor had directed them to serve as the representatives for their agency. For example, one firefighter and technical rescue technician explained how he was mandated to represent his agency in the CSE exercise:

“Somebody else had been assigned to head that project up, and they had gone to a couple meetings, and they're like, ‘Maybe this isn't our cup of tea.’ And so, ‘That's kind of your cup of tea,’ so they got a hold of me and asked me to go. So I didn't get there 'til like the third or fourth of the meetings, into the process, but I picked up on it pretty quickly, what they were doing. And

jumped in it that way. I believe the fire chief or somebody else was tasked with the responsibility of going to that meeting, and as I said, it got dumped off onto me.”

One of the initiators of the CSE exercise also commented that some agency representatives were told not to participate by their bosses:

“You can easily [guess] from experience, and then through the grapevine of the professionals in the organizations, you hear that they were actually told by their bosses, ‘Probably I can’t be seen working with this group because there’s an election coming up.’ [The real reason they backed out of the exercise was], ‘My boss doesn’t like that group’s boss, and so we’ve been told that we have to find another exercise.’ And it’s true that it is what it is, and you just say, ‘Okay, well, thank you, and we’ll keep you in mind next time.’”

Even some of the most active members of the planning committee said that it wasn’t their idea to participate in the exercise. Perhaps the most notable example was the person who, by virtue of a sudden (and, according to rumors, forced) retirement, became the interim head of the county emergency management agency during the planning of the CSE exercise. While the outgoing head had been very supportive of the exercise, the interim head was skeptical:

“I didn’t know what my role was. I was so new to it I was trying to fill a void. No, the only thing was I was just trying to make sure that – it was so far along into it, we had to make sure we followed through. Because I would have honestly said if it would have been, let’s say December in the transition [i.e., four months ahead of the exercise instead of one month ahead of the exercise], I would have said, ‘No we’re not doing the exercise, we’re not ready and the planning’s not there.’ But 30 days from it, too many people. Just too many people were involved. So yeah, that would be my comment, and I told many people that. I told [the lead facilitators] that, I told other people that. I said, ‘This won’t happen again.’ I was pretty adamant about that.”

Despite the interim EMA director’s concerns, the county sheriff (his boss) supported the exercise, so the exercise went forward.

“Get your golden pen.” One of the most notable power differences that I encountered as I observed the case exercises was the distinction between operational disaster responders – such as firefighters, law enforcement officials, 9-1-1 dispatchers, and the like – and the upper-level city and county administrators – many of whose positions are elected or appointed – who manage the municipal resources from perspectives of budget, liability, and other issues of greater abstraction. As Chapter 2 discussed, real disasters happen relatively infrequently, whereas municipal administrative positions may turnover relatively frequently. In my observation, operational leaders felt a sense of obligation to partner with these administrators in disaster preparedness, but they also felt a sense of wariness or distrust: Do these officials even know what my job is? Will they try to interfere with it? Will they back me up by funding the resources that I believe are needed? Operational leaders also expressed frustration over their lack of ability to persuade policy-level personnel to participate. In the last planning meeting before the CTT exercise, the county emergency manager commented, “If the [city] mayor shows up, great; if not, there’s nothing I can do.” The lead facilitator replied, “Yeah, that’s all you can do; you can’t drag them.”

One incident stands out in particular. Among the officials in the emergency operations center (EOC) for the CTT exercise were not only city and county officials but also university and college leaders from the participating higher educational institutions. The CTT planners had decided that, during the exercise, they would project each new “injects” (exercise prompt) on a screen using PowerPoint, which might require exercise participants to take notes so as not to lose track of prior injects. The conversation about the implications of this decision went as follows:

Planner 1: That’s real world; information will be coming in at different times.

Planner 2: And if the old discussion continues, that’s an issue, too.

Planner 1: And if they don’t write it down and I put up the new inject and they say, “Hey, what was that?” I’ll say, “You should have written it down.”

Planner 3: Yeah, the chancellor might have to take notes.

Planner 4 [joking]: “Get out your golden pen.”

[Planner 3 pantomimes the chancellor looking around helplessly for her assistant. The group laughs.]

As this fantasy chain suggests, the idea of forcing high power participants to take notes made the group somewhat uncomfortable. They imagined the potential conflict and fantasized about how they might handle it if power differences were not an issue.

Whose exercise is it? The other form of power that seemed to contribute to some conflicts was the highly visible role of the lead facilitator. This person initiated the exercise, was instrumental in securing the funding for the exercise, invited the initial group of participating agencies, and facilitated planning meetings, orientation meetings, exercise briefings, and exercise hot washes or after-action review meetings. In the three cases I observed, the lead facilitators made very deliberate and consistent efforts to seek others' opinions, make decisions inclusively, and employ a democratic leadership style. At the same time, other exercise planners kept referring to the exercise as the lead facilitator's exercise. The lead facilitator of the CSE exercise, a National Guardsman, told me how he thought about his role in facilitating the exercise:

"I think we tried to accommodate the needs of everybody as much as we could. [pause] I think I made it really clear to a lot of people that I didn't have a lot to bring to the table except for, you know, my ability to help plan this, coordinate it and put things together. [...] And it does save you a little bit when things go bad. People are like, 'Well, yeah, it fell apart,' and they're not looking for a blame or a scapegoat, but they'll sit back and say, 'Well, this happened for that reason,' so that takes some of that pressure off of you. If everything is disorganized, unprofessional looking, it's easy just to start pushing all the blame or cause of things not going right to that one individual or agency."

In this comment, he addressed both his desire for the exercise to be conducted with a certain level of professionalism (wanting everything to be organized and professional-looking), as well as his desire for participating agencies to own the planning of the exercise so that they would reflect on their own choices

if they were not happy with the results. The same individual reinforced this when he described an early conversation with a local emergency management contact about the possibility of involving local agencies in the exercise:

“So we approached [him] and said, ‘Hey, want to do this training event? This is the time frame we're looking at. You got anything in there, anybody that you want to play?’ And his eyes basically lit up and he said, ‘Yeah, hey, we need to do an exercise. How big do you want this to be?’ We're like, ‘How big do YOU want it to be?’ [laugh]”

Here, the lead facilitator demonstrated his attitude that the local portion of the exercise was to be designed by the local agency representatives. One consequence, he admitted later, is that “there are things you wish you'd coordinated better that you really just can't coordinate.” This lead facilitator wanted to see local agency representatives take ownership of what he considered ‘their part’ of the exercise. He neither wanted them to over-rely on him or blame him for the exercise’s shortcomings, which he viewed as collective rather than individual failings.

Similarly, at the planners’ hot wash after the CTT exercise, one planner commented that it seemed like the group needed to “hold [local college’s] hand and walk them through it.” Another asked if the local college had the same mandate as the local university to exercise their campus evacuation plan every year, and the lead facilitator, who was from the local university, said yes, they did. Another planner reacted, “But they’re riding along on [Lead Facilitator’s] mandate. That pisses me off.” In each of these instances, despite lead facilitators’ efforts to promote shared ownership of the exercises, participating agencies were quick to attribute the exercise to the lead facilitator and his or her agency – as if the other agencies did not and should not have as much say in the exercise.

Responses to power difference conflicts. Several types of responses emerged from these conflicts. The first type was simply deference to the perceived existing power structure. Even the interim EMA director who thought the exercise should have been cancelled was loath to critique the lead facilitator for not seeing things the same way; rather he remarked:

“But regardless, and I knew this going in, and I even said something to [the lead facilitators], I said, ‘Even if people start pulling out, the exercise will continue because the Guard’s gonna do their thing regardless of if the locals say, ‘We’re not gonna do it.’ And they all knew that. But nobody pulled out fully, that I’m aware of, at any time. They participated.”

Secondly, operational leaders treated EOC officials with kid gloves in each of the exercises. In conjunction with CSE, the then-interim EMA director planned a four-hour interactive training session for the EOC group that was in every way disconnected from the rest of the full-scale exercise. He explained, “Yeah, we planned ahead on that particular – we knew that operations was gonna take place. They were gonna do that. But this group here was going to be more of a training session. We knew that going into it.” Regarding the nature of the training session and its objectives, he explained:

“We were giving them injects that gave us a synopsis of the incident with a little tweaking for their needs. And then we would have them – we were training as they were giving feedback on injects. So what they were doing affected nothing up there. But they didn’t know that. And because we knew that what we had to get accomplished there we could not stop that up there to wait for a decision. [...] [We were focusing] on what we wanted them to know as their roles, like a [disaster] declaration. Things that they may encounter: curfew, interstate closure issues, finance issues, resources, things like that. So those injects were specifically what they’ll deal with, not where are we going to put ten deputies for road closures – that’s not their level, that’s operations level. They don’t know that. Those are the issues they had to deal with. Martial law issues, things like that.”

As this quotation illustrates, the operational leaders planned a separate exercise, essentially, tailored just for the policy group.

In the NCD exercise, the controller for one county’s EOC group decided to end their exercise early because the group was, in her words, “tapped out on learning.” As it happened, the group had been trying to conduct their portion of the exercise in synch with the field portions of the exercise – in contrast to the CSE strategy – and they got frustrated waiting for information from the field. In addition they had

no representative from the sheriff's office, which prevented them from making some key decisions; this individual was out in the field instead of in the EOC. The controller was mildly disappointed with the level of frustration she encountered, but she tried to look at the positive. She commented, "It's the first time they've done any exercise that wasn't a tabletop, so today was a big step forward."

The CTT exercise also had the EOC group working in relative isolation, with periodic briefings from a representative of the operational group. One of the major sources of debate in the planning and review of the exercise was how soon, in a situation of possible severe weather, to call the officials to come to the EOC. They considered making it their procedure to call policy-level personnel to the EOC before a tornado had been sighted. They were concerned, however, that if they had one or two incidents in which they called in these personnel, then a tornado never touched down, it would become a 'boy who cried wolf' situation, and they would stop responding to the messages. The lead facilitator asked the exercise participants in the large group debrief of the exercise how they would want this matter to be handled. Afterwards, with the planners, he summarized, "As far as when to report, I heard them say that the policy group is going to come in [to the EOC] second [i.e., after the operational personnel have already been called in]." Another planner remarked, "It does not matter; you cannot dictate it all for every incident." Another planner agreed. The lead facilitator said, "I'm glad you said that. But it's damned if you do, damned if you don't." Clearly one response to power conflicts was to accept one's lack of influence – and perhaps to commiserate with other 'low-power' individuals in the process.

The lead facilitators' use of democratic leadership styles and strategies of inclusion constitutes a second type of response. It seems to exemplify the mainstream cultural idea that collaborative, participative strategies are preferred for projects like this, in which participation is – for most agencies – voluntary and not especially incentivized. Whether or not that assumption is true is an empirical question. The approach certainly stood out from the rest of the military and pseudo-military modes of interaction that dominated several of intra-agency experiences with the exercise. As the CTT hot wash conversations described above suggest, the lead facilitators made it their habit to seek opinions and feedback and to

promote group problem-solving, and this was apparent in the CSE and, to a lesser extent, the NCD exercises as well.

The last type of response also exemplified elements of confrontation. This involved taking the attitude of empathy toward those people who might have power but not experience, but also taking an active role in correcting their misconceptions in safe training environments. For example, the present-day EMA director (also a lead facilitator for the CSE exercise) showed a sense of acceptance about sometimes having to ‘play catch up’ with the policy-level participants; regarding the frequency of turnover in those positions, he commented, “You always have to be re-educating, and that’s the nature of their jobs, so that falls on you.” Although the CSE and CTT groups did this successfully, it also seems like they wished they could be more forceful – as the “golden pen” anecdote suggests. Similarly, the then-interim EMA director during the CSE exercise characterized his approach to working with the EOC policy group as “a personality thing [...], not being rude but, ‘You’re going to have sit here all day.’” The reality, however, was those participants did not have to ‘sit there all day’ for the CSE exercise; they got a half-day exercise tailored to their needs and interests – and completely disconnected from the operational portions of the exercise.

Finite Resources

The finite nature of resources like time, money, and space required exercise participants to decide how to divide up or share resources, as well as how to coordinate their activities accordingly. On the one hand, the initial establishment of some resource provisions was a major factor in motivating agencies to participate in the exercise. Some key resources were already in place: the date/s, the venue/s, the basic structure of the exercise (e.g., tabletop, functional, or full-scale, as well as some overall exercise objectives), and a dedicated lead facilitator – a de facto organizer of the exercise – all of these were already confirmed by the time agencies were invited to participate. This is sort of like being invited to attend the party instead of hosting it, which can be a prohibitive amount of work.

Time as a resource constraint. After the point at which the established resources motivated agencies to participate, resource limitations defined their decisions and activities from that point forward.

The CSE exercise faced two major sources of conflict related to resources. The first was related to participant time; participants in each phase of the exercise had different constraints on how long they could be at the exercise per the conditions of their employment. The local response participants were on an 8-hour work day schedule, so their activities had to occur simultaneously during the 8-to-5 work day. Some elected to make it a half-day of training, rather than a full day, and they wanted to hold their exercise in the morning, 8-to-noon. In a real incident, the first responding agency would likely be dispatched from a 9-1-1 call; it might be police, fire, ambulance, or some combination thereof. Then additional (and more specialized resources) would be called in as the first responding agencies saw the need. By exercising all of the local agencies simultaneously, the exercise planners exponentially complicated the task of writing an exercise scenario and accompanying injects that would give probable cause for each agency's involvement; it was like having to pick up the narrative thread in multiple places, with multiple contingencies, just to provide some sense of coherence regarding what kind of incident might have all of these agencies working together, at least nominally.

The NCD exercise faced similar time constraints; their one-day exercise included six venues. In their case, however, they were not as interested in inter-agency dependencies. The master narrative was about a tornado, but each venue had an incident that was not necessarily specific to tornado damage, such as injured students on a school bus, a collapse pile, a chemical fire on a freight train, an overturned rail car, and a person trapped in a corn crib. The CSE exercise had the added complication that the second day was a state resource day, including urban search and rescue teams specializing in heavy materials collapse (e.g., cement building structures). In this state, the urban search and rescue team is comprised of firefighters and other response professionals from across the state, but their training and deployment is funded by a non-governmental fire mutual aid organization – sort of like a state-level traveling sports team. Thus, their sponsoring organization could fund them – via backfill and overtime pay to their home departments – for overnight travel to the venue and a training day on a Saturday. Lastly, the National Guard participants were fulfilling one of their monthly weekend sessions (“one weekend a month, two weeks a year”), so their portion had to begin with travel to the venue on Saturday and an operational

period from Saturday afternoon to Sunday afternoon. By the time the Guard arrived, all of the local participants and many of the state-level participants were already gone. Although everyone accepted the constraints of these employment conditions, several planners commented that they had looked forward to interacting with the Guard in this exercise, and that never really happened. For example, one local fire department representative commented:

“Our perception was that it was going to be localized teams, and it was going to be their National Guard team, or I guess, the State... Guard team coming in, working together. And so right up front, it was our understanding that it was going to be this joint, side-by-side partnership of special operations guys working together, to mitigate a single problem. And then, as the process went on, the scope changed maybe a little bit, and it got a little bit bigger than what we anticipated. But that's okay, I mean, we got through it.”

While this individual did not specifically attribute this disappointment to the issue of time as a resource, an agency representative for the state weapons of mass destruction team did:

“When it's [a 24-hour operational period format] things are better understood, timelines are better understood, instead of saying, ‘Okay, now it's this.’ Some people cannot grasp when you're running parallel scenarios or picking up a scenario from the next day and saying, ‘Okay, it's 6:00 at night’ when actually, you're there at 8:00 in the morning. Some people just can't grasp that. When you run – and we've done this before where – because our guys are on ten-hour shifts – we run 20-hour scenarios. We'll work a double shift back to back. It allows for the event to unfold more naturally and it actually works a lot smoother. The downside of it is you have union issues, you have staffing issues, you have logistics issues, so there are some negatives to it. But overall, running something 24 hours through is going to be way better than doing the three separate days.”

There may not have been a viable alternative, but the scarcity of time as a resources did lead to confusion and conflicts.

Space as a resource constraint. The second major resource conflict that came up at CSE and CTT was space. At CSE, the exercise site consisted of four abandoned apartment buildings all located

next to one another in an apartment complex. There was one street running between the buildings, and the exercise was only able to close off one end of the street, because parts of the complex were still occupied. On the first day of the exercise, there were eight local agencies working in the four buildings simultaneously, and each agency had at least one really big truck. Some trucks had equipment that the participants needed to perform their duties; other trucks were part of the response – for example, the state SWAT team wanted to practice using a special vehicle to make a second floor entry. As participants arrived at the venues, they each parked their big trucks on the side of the narrow residential street until both sides were completely parked up, and it was hard to get anyone in or out. One agency planner described it as follows:

“The site was very compact. There was only one road in. The other thing was that they chose to put the command bus right in the middle of the hazard zone, so right in the middle of where there were active shooters, bombings, buildings blown up -- and that's -- tactically, you never want to put the people in charge of making strategic decisions, you don't want to put them right in the heat of the battle. Because once you take out the communication or the leadership segment of that, then the whole operation falls apart. They put that bus right smack-dab in that parking lot, and we had a hard enough time getting our trailers and everything else in there. It was one more thing to work around, but -- you know, if they would have put the operations bus on that park that was to the south of there, and away from it all, you still communicate via radio.”

The lead facilitator also remarked on this issue, only he talked about it as a regret – something he wished that he would have managed differently during the exercise:

“[I wish I could have gotten] those venues straightened out. If only I would have had somebody down there that would have stepped up and said, ‘No, stop. You're doing this, you're doing this. You're going here.’ And it might have been nice to have somebody saying, ‘Alright, you don't need that truck and that truck in here. Go park it over there and walk back over here.’ That would have been nice.”

As both comments suggest, neither of the speakers expressed these concerns directly during the exercise itself. At one point during the CSE exercise, I was standing next to the lead controller as he was getting radio calls about this problem, and his comment was, “Who gets to park where – that’s real world.” His reaction was to let the participants work it out for themselves.

At the CTT exercise, the planners had initially intended for all the operations participants to be gathered around one big table. Unfortunately, there were about twenty seats at the table and more than thirty participants in this room alone. The incident commander began the exercise by organizing the participants into functional groups based on Incident Command System areas of responsibility: logistics, planning, operations, safety, etc. It was clear that there weren’t enough places for these small groups to gather, so he suggested that the operations group, the largest, go into an adjoining small conference room. As a result, however, the operations group became isolated; they did not make an effort to find out what the other groups were deciding, nor did the other groups approach them. In the hot wash with just the planners after the exercise, the following conversation ensued:

Lead Facilitator: The incident commander did a really good job taking ten minutes to set the room. We pushed back the [timeline of the] injects for that. It was all good until operations went into that side room. Then I was like, “We’re screwed!”

[laughter]

Planner 1: I didn’t understand that. Isn’t operations supposed to be communicating directly to the incident commander – or is it the role of logistics chief and the incident commander to go in there [to the operations area] and listen?

Lead Facilitator: There’s one operations section chief to handle that, but [name of operations section chief] never got out of that chair. Of course, they were all pressed for time, but section chiefs need to check in with one another.

This issue came up again in conversation a few minutes later, related to an oversight in the exercise, which one planner attributed to the fact that logistics could not do their job “because those four guys did nothing but go to operations to ask them questions about operations. Nobody from operations came out

here; they didn't give a shit what was happening out here." No one seemed to disagree with this assessment, but everyone seemed to agree that the lack of space, which necessitated the use of the side room, exacerbated the situation.

Responses to finite resource conflicts. Despite the CSE lead controller's comment about the parking problem being "real world," I observed that most planners and participants were comfortable dismissing these resource challenges as an artifact of the exercise. In a real incident, they argued, we wouldn't all be at the same scene at once. In interviews about a previous exercise, a pilot for the dissertation study, one interviewee explained to me that these space and time issues aren't realistic because, in a real incident, responders just seize whatever space they need around the incident site so that they can do their jobs. He explained, "In real life, I would just say, 'We're using this parking lot,' and they'd say, 'Ok.' They'd pray it was a hazmat or reimbursable event so they could charge us, but if it was just a local event, they know they're just eating it." Arrangements for exercises, however, are different; while the public accommodates disruptions caused by the response to a real incident, it does not regard exercises in the same way.

The 'just do it' argument may apply to the use of space in a real incident, but the same may not be true regarding time and its implications for responder pay. During the CTT exercise, the EOC officials declared that they were (notionally) writing a blank check for the response to the hypothetical tornado. In the hot wash with planners, the state emergency management agency representative cautioned that someone in the exercise should be fulfilling the finance management function because there are benchmarks for what state or federal disaster aid will reimburse. The conversation went like this:

Planner 1: They came down and told us one time that it was an "open checkbook" for the response.

Planner 2 [surprised]: I never heard that.

Planner 1: The [operational briefing liaison] said that. I was trying to get a discussion started to get federal housing and all that.

Planner 2 [frustrated]: It's that artificiality thing. Is it taken care of? "Yeah." Is it really taken care of? No.

Planner 1: Yeah, how are you going to do that?

[...]

State EMA Rep: They don't get what incident command has to do: Who's got the checkbook, and who's in charge of the expense? They never made that decision, and if not, it is an open checkbook.

Planner 2: One thing they did well was the declaration. There was no hemming and hawing on that.

Planner 1: But to expect them to jump on that in the dark is not a reality. When [location] got hit at 8 p.m., that group didn't do the declaration until 1 or 2 in the morning. We're doing it to keep them busy. [Facilitator] handed them something generic: "We have damage." It doesn't happen that way. It isn't first thing.

State EMA Rep: Look at what the declaration says. It actually came at 9:00 something – as soon as they started calling for mutual aid. You've used everything you've got, that's when you call. If you're looking for public assistance, the threshold is big dollar numbers; that's a function where I have to provide [state capitol] with valid information. It just makes it easier for everyone concerned if you track that. Some of my counties have a disaster cost code, so when it's time to make the tally sheet, it's easy to do. Another reason why you need a controller or finance person from the county is to know how that's done. If you don't get to \$600,000, I'll tell you, you aren't getting public assistance. Once you're over 17 million, okay, that will be fine. Every day we have to tell the government how much damage and how much it's costing the state. Over 16.5 million, okay, then we have to tell the [U.S.] President.

Unfortunately, disappointments like the parking traffic jam or the inability to work with Guard participants may have left some local agencies feeling less positive about the exercise —particularly as a template for interagency coordination. Overall, I saw the finite resource issues as matters of common concern for all participating agencies, but the agencies did not seem to treat them as such. They either saw the conflicts as particular to one agency or a small set of agencies (e.g., I want to park, and this guy is in my way) or as inevitable side effects of ‘exercise world’ – problems that would not occur in a real disaster context and therefore did not deserve to be treated as fodder for cooperative problem solving. It seems likely, however, that not all conflicts over finite resources would truly be eliminated in a real world disaster.

Role Uncertainty

The state of role uncertainty is one in which the individual feels that he or she does not have enough information about the task or relational consequences of his or her actions to make decisions (Galbraith, 1973). Despite each agency’s ability to define, in advance of the exercise, target capabilities that it wanted to exercise, there seemed to be a fair amount of role uncertainty in two respects: (a) some areas of responsibility seemed to be completely overlooked; no one saw them as falling under their purview; and (b) participants only seemed to find points of intersection between their responsibilities or roles and another agency’s by violating some unforeseen boundary.

No one’s role: radio communications and unified command. In the full-scale exercises (CSE and NCD), one area that no one seemed to really own was radio communications. One agency provided exercise radios and an exercise channel. These were for exercise purposes only and included multiple agencies on the same channel that would not, even in a real incident be on the same channel. Radio traffic was mostly communication between the lead controller or facilitator and site controllers regarding exercise business. Hence, much of the radio communication – in form and content – was for exercise purposes only. For the functional exercise (CTT), the challenge of using different radio channels was only mentioned in passing and not addressed in the exercise itself. This issue came up in the after-action review for the CSE exercise, but agency representatives differed in their view about how radio difficulties

should be handled for the future. An ambulance representative mentioned some problems getting radio reception in certain geographical areas, and the dispatch representative responded, “We didn’t know about that. We heard they moved radio traffic to [a different channel], but we didn’t know why.” They shared some additional information about the nature of the problem. The state emergency management agency representative tried to instruct the group about how he thought the radio communications problem should have been handled:

“If we’d had a true unified command, then that would have been an issue for them to deal with, and with a [state communications equipment] truck, they could have set the actual unit up out there. If that whole ‘We’ve got a problem’ doesn’t get back to somebody who can fix the problem [it will never get fixed] – and we can fix the problem. But [the way things went] it didn’t allow us to exercise something that we would have done in real incident; we would have said we need the [state communications equipment truck] now, not two days from now. We can fix the problem, we [as a state agency] spend thousands of dollars to do that.”

In contrast, the ambulance representative replied that, from his perspective, “The communications challenges were an added benefit.” He explained, “I knew that [radio communications would be limited due to technical difficulties] going in, and I let it play out just to see where it would go. I told the supervisor working for me, as soon as you see it’s not working, move to another channel. I saw this as a positive: Next time everyone will be thinking on their feet.” The state EMA representative saw it as the role of the local agency representatives to escalate the radio communications problem because state-level resources might be able to address it. The ambulance representative saw the problem as not belonging to anyone in particular and perhaps not even being fix-able. He wanted to train his people to work around the problem because he didn’t expect it to be fixed.

Another notable void related even more closely to interagency coordination. In my observations, Unified Command, the multi-agency oversight committee that is supposed to form in response to a large incident, was neither unified nor in command. In CSE, they essentially failed to convene. When I interviewed one of the lead evaluators, she explained,

“I think that's an educational thing for [some of the exercise participants], because the commanders don't understand that *they* are – they don't really understand the concept of incident management. When we were talking with them about unified command, they were like, ‘Oh, that would have been our chief; our chief would have been in the unified command.’ And it's like, ‘No... Your chief would have been in the policy group, of the group of people that make the policies and assist *you*, but you are the operational unified command. So whether you like it or not, you *are* the unified command.’ And they don't have that thought process that says, ‘No, that's not where I should be.’ Instead, it's, ‘I need to be closer, and I need to know where my guys are, and I need to make those on-the-fly command decisions.’”

As one controller commented in the CSE after-action review, “Nobody wanted to come in E-1 [the mobile command post where unified command is supposed to meet]; they were on radios walking around E-1.” Another agency representative joked, “I think they were afraid they wouldn't get out.” The controller laughed and elaborated, “Or maybe they were afraid of being heard?” There was some discussion about the resulting confusion that ensued with the SWAT and state weapons of mass destruction participants. One of the lead controllers, a firefighter, commented, “I knew it would be tough to get police to command post.” The first controller, a policeman, replied, “I will give you guys credit on that, fire does command post better; law enforcement, they just withdraw.” The firefighter responded, “It happens every time, and we write it down [in the after-action report] every time.” The first controller said, “It's interesting to see it from an EMA [emergency management agency] perspective; I've had my eyes opened. I'm drinking the Kool-Aid!”

Similarly, in NCD, the Unified Command group failed to convene. As a consequence, one agency was directing participants to come in on a particular street after police participants had decided to set up a roadblock there. In the hot wash discussion, the lead facilitator commented that what they needed was more “interagency coordination.” One of the lead evaluators also commented that setting up a unified command post for this venue would have addressed this problem. In CTT, a Unified Command group was never explicitly identified, even though they would, in a real situation, be making some of the

operational decisions that the operations group was making. In each case, participants seemed to assume that, because it was ‘just an exercise’, erecting Unified Command was unnecessary. It seemed to me that it was exactly the thing they were there to practice. Somehow, they didn’t see it as part of their roles.

Roles clarified through boundary violations. Some of the most interesting lessons learned in the exercise came from points of violating the boundary of someone else’s “RAE” (an acronym for responsibility, authority and expertise). In some cases, they found this out through direct interaction. At the CTT exercise, a casual conversation led the Red Cross representative to realize that Public Health had a mandate to inspect any shelter that Red Cross might establish. Representatives of both agencies were literally and figuratively on the sidelines of the operational portion of the exercise. About two and a half hours into the exercise, the Red Cross representative turned to the three Public Health representatives and, just making casual conversation, said, “So what kind of things would you all be doing in an incident like this?” They mentioned a few things: getting supplies ready for possible vaccinations, monitoring the water supply situation in case they might have to react to water-borne illnesses, inspecting temporary shelters—and here the Red Cross representative stopped them. The conversation continued:

Red Cross Rep: I have never had Public Health come out and inspect a shelter. Public Health would be looking for what?

Public Health Rep: Just a general assessment for it to be a shelter.

Red Cross Rep: I’ve been doing this for ten years, and this is the first I’ve ever heard of this.

Public Health Rep: We’re also supposed to do food service assessments, like kitchen inspections.

Red Cross Rep: That part I understand, but at first all we do is purchase food and bring it in.

Public Health Rep: We might also want to do vaccinations at the shelter. Or case management for displaced people with special needs.

Red Cross Rep: Wow, this is the first I’ve heard about all of this.

Public Health Rep: We would just need a call made to us, saying what the shelter will be, then it's our responsibility to make the assessment.

Red Cross Rep: So, you're written into our [emergency] plan?

Public Health Rep: I don't know.

Red Cross Rep: If it's legally mandated, you should be written into our plan. There should be an MOU [memorandum of understanding].

Public Health Rep: I'll have to check with our emergency plan person [who was circulating the room in her role as an evaluator for the exercise].

At this point, one of the Public Health participants pulled out the checklist that they use to evaluate a shelter, and they talked through each of the items on the list. The Red Cross representative asked some questions for clarification. Still surprised, she commented, "Well, we have our own guidelines, because it's a Red Cross shelter, but I've never seen that before." When the evaluator/emergency plan Public Health person came by a few minutes later, she confirmed that inspecting mass care shelters was written into the Public Health emergency plan, and it included things like square footage per person requirements from FEMA and interventions for people who need special care. The group decided that they should schedule a follow-up meeting to compare and refine their two plans. The Red Cross representative commented that clarifying all of this in the emergency plan would help her train her volunteers: "My problem is that I have a lot of volunteers, but many of them are not specialized." Having Public Health representatives come out to shelters would also help her ensure that her volunteers were maintaining health and safety standards; this was a resource that she didn't even know she had. Even though both agencies were a bit surprised by this encounter, stumbling onto the overlap in responsibilities helped them work together to plan for the future. The whole conversation took place in just under fifteen minutes, but it might never have taken place if they hadn't both been waiting around at the exercise.

In other cases, the points of intersection were not addressed directly during the exercise, but a controller pointed them out in the hot wash or an agency lead pointed them out at the AAR. For example, the technical rescue team that participated in day one of the CSE exercise held a hot wash discussion immediately following the end of their shift. This included ten technical rescue technicians, their two controllers, and one evaluator. After discussing a number of technical issues (e.g., regulation and non-regulation shoring structures), one of the controllers raised an interagency issue. He said,

“The scenario was that the house exploded while the police were following up on a search warrant. Did you ever think about evidence? Realistically, if this happened, might we have backed out and called EOD? Before we went in, we had a conversation about what we might see when we got there. If we see a secondary device, that takes precedent: call EOD. They [the EOD players] did their own thing out there [today], but in real life, we wouldn’t be doing anything. We’d be pulled out and staged until they cleared it. We wanted to put something in there for you to discover, but we didn’t get to that today. We wanted to see how well we communicate with other players, especially on the cop side. If we had to test those boundaries, that would have been a good avenue to do that.”

In a follow-up interview, this same individual explained further:

“One of the things that we had in [the exercise plan] was that our guys were going to encounter a pipe bomb, and we’ve never addressed, ‘If you come across a piece of evidence, as a rescue team, what are you supposed to do? Do you back out and not touch it? What do we do?’ So we wanted to create a policy on what we do. And we were going to challenge our people to find out what they would do so that we could build on that. And our goal was for them to encounter an explosive device and then basically back out, call EOD in, those guys would come over – who we’ve never worked with before – they would go disarm the thing, or deem it safe, and we would go back to work. That was our goal. We never got to that goal, and we didn’t get to that goal because we were out of script, on the time.”

It was certainly productive for the technical rescue team to discuss this, but this discussion happened solely within their group, not with the local EOD representatives.

In a similar vein, a dispatch representative brought up an issue relevant to several local agencies during the CSE after-action review meeting. She said she was surprised, as local agencies started assessing the venues and calling for assistance, “that no one ever called a ‘mass casualty incident’; for locals, that’s what really gets you a lot of resources.” Another agency representative asked for clarification on that term: “Is there a trigger for that?” Another answered, “Ten or more injured persons.” An EMA employee added, “That’s in the EOC [emergency operations center] plan.” The dispatch representative further explained,

“Because we [the dispatchers] are located in the EOC, we’re not allowed to call that. It has to be someone on site to do that, like fire, police, or the state EMA. When that’s called, we have a whole checklist, including calling emergency rooms to notify them. At one point [during the exercise], [a controller] asked me, ‘Has anybody called the hospitals yet?’ and I had to say, ‘They haven’t called mass casualty yet.’ He went ahead and had someone call the hospitals to set off their exercise. They had a more realistic scenario in terms of having the timing compressed; [our venue] was not how it would work from an operations standpoint, police and fire. So that’s something that we could have improved upon.”

Unfortunately, not every agency sent a representative to attend the after-action review meeting, so not every agency who needed to hear this information was able to hear it.

Responses to role uncertainty conflicts. As these examples suggest, a case of direct confrontation between the agencies involved was rare in cases of role clarification. In cases of responsibility void, it was unclear who was in a position to fix this or when it should happen. Although these voids were mentioned in after-action review meetings, these discussions did not seem to determine who should do what differently in the future. For CSE, several parties agreed that Unified Command personnel should convene in the mobile command unit, but none of the individuals who served in those roles were in the room to participate in that discussion. Accordingly, there was no clarification about

when such a gathering should take place, what it should accomplish, or what affected parties could do to intervene to make such a thing happen. In the NCD hot wash, the lead facilitator and lead evaluator pointed to the need for Unified Command but did not provide guidance about who should have comprised it or what they should have done differently to make this a reality. In both cases, as with many of the other voids, exercise facilitators and controllers recognized the oversight when it was happening, but they seemed to think that it was not their place to intervene. This attitude seems to reflect a training philosophy that exercise participants learn best from being left alone to make their own mistakes, but the lack of detailed review after the exercise makes me question the effectiveness of this philosophy for role uncertainty issues.

In contrast, the Red Cross – Public Health discovery of complementary responsibilities presents an example of a productive confrontation. The agency representatives had the opportunity to talk through the overlapping portions of their disaster plans; they preliminarily decided when and how they would work together in such a situation, and they agreed to meet again to flesh out the details and document them for their colleagues. Interestingly, this discovery happened more by chance than by design. It was prompted more by proximity and opportunity (a mix, perhaps, of boredom and general friendliness) than by any part of the exercise design.

Procedural Uncertainty

The term procedural uncertainty refers to uncertainty about the ‘rules of engagement’ or which procedures qualify as “rational” in a particular situation or environment (Dosi & Egidi, 1991; Simon, 1957). I observed procedural uncertainty as a source of conflict in two forms. In the planning stage of the CSE exercise, it seemed that the lead facilitator had a system for designing the exercise, and he seemed to think that others understood it better than perhaps they did. In the second form, I observed that the NIMS a.k.a. ICS, the incident command system, was used only selectively and then almost academically. It is supposed to bring order to the chaos of a complex, extended response, but things still seemed chaotic even when it was in full use.

HSEEP as a source procedural un/certainty. The planning of the CSE exercise followed very clear guidelines provided by HSEEP. It also reflected the lead facilitator's experience facilitating the design of other large multiagency exercises and his expertise as a training and development professional. He often sought feedback from the group, asking if there were questions, concerns, or opinions. When I asked him what advice he would give to someone else facilitating the planning of an exercise like CSE, he said:

"If I had to give a piece of advice, I would introduce them to some people that are smart and say, 'Work with them.' [laugh] I'm sure you know that there is a wide range of factors. [State evaluator] comes in here all the time and sits down, and he and I don't see eye to eye on anything. But, you know what? I can sit here and have an intelligent conversation. And we can agree to disagree on a couple of things, and one of us is going to yield on something. Or I'll yield and say, 'We'll try that.' But normally when you have that level of respect and ability to work together, you sit there and say, 'I just don't like that. And this is why.' You have that conversation and meet some type of... what's the word? Not concession, not compromise, but a collaborative decision. Because compromise is not the same as collaboration."

The CTT lead facilitator seemed to share that attitude and employed similar strategies in his meetings; one of his favorite phrases was, "Anybody have any heartburn over that?" While it sounds coy, he seemed genuinely interested in the answer, and he was willing to talk through any concern that was raised.

It seemed strange to me, then, that at some of the large group CSE planning meetings, the CSE lead facilitator got very little feedback from the group. At times, he seemed a bit exacerbated that no one seemed to have anything to say. Others noticed it, too; the then-interim EMA director commented in his interview:

"I think the large meetings where we had the majority of the representatives, if they were paying attention, could get a feel for how the flow of the exercises was supposed to go. And if something caught their attention that wouldn't jive with what their agency would do, there was

some communication there saying, 'Hey, we wouldn't do it this way, or this group's gonna come in or our plan is to...' So that was good. I think there was a lot of note taking during those meetings, which ultimately led to the master inject outline. [...] I think those smaller [sub-committee meetings], if they were with their discipline, such as the hospital and ambulance services, they knew exactly what they needed to work on, and afterwards they knew exactly what their shortfalls were. I'm just saying them, but the smaller groups, to me, people will open up even more. Big groups sometimes people don't ask questions or don't want to say as much because they're in a big group. It's the group-think syndrome I think, you know what I mean? So I think the smaller ones people seem to be a little more open."

While there was some productive discussion in the large group meetings, there seemed to be more, to borrow this participant's description, "getting a feel" for things and taking notes to inform their agency-specific planning.

When I interviewed the CSE lead facilitator, he explained that he expected some initial skepticism from the group, since most of the representatives didn't know him personally, but he didn't expect the lack of familiarity with exercise design that he encountered. Some agencies were well versed, and others were not: "The hospitals, they had that all [figured out]: 'We need this, this, this and this, and here's how we're going to do it.' We said, 'We need your injects' and [immediately] here's the injects. They had it together. And then there were some other people just sitting back saying, 'Lead me to the water, and maybe I'll drink.'" This discrepancy became especially apparent in the writing of injects. The lead facilitator asked each agency representative on the planning committee to write the injects for their agency's portion of the exercise. As it turned out, some were so inappropriate, by his standards, that he had to completely rewrite them. After it was all over, he commented that he wished that he had provided some training on how to do this up front. The conversation went like this:

Lead Facilitator: Probably a lot of it was just assumption on my part that people knew what a good inject would be, what they needed to provided. Some people just gave me a timeline: saying "at this time, this; at this time, this." So there was a lot of tweaking, a lot of massaging. I

think a lot of people don't like writing MSELs; they like planning exercises. And they're hoping that the MSEL injects come together. Some people had too much detail for a full scale exercise. Again, a little bit of a learning point of mine. If this was a functional exercise, and we didn't have EOCs going, we didn't actually have firemen and stuff pushing reports, your injects would have a lot more detail, a lot more vivid... So, in some cases it was a little too much, some cases it wasn't enough.

Interviewer: So, did you go back to those representatives and say, "Here's how I'd like you to redo this?"

Lead Facilitator: Yup. And some people did, and some people didn't. And you get to a point where you've just got to go with what you have. And try to make it work. To fix that, remediate that problem, next time I would like to start a few months earlier and then get into the MSELs a lot sooner. And possibly do some OJT [on the job training] for that training team. Because these people know a little bit about HSEEP, they've done exercises, but they're not professionals at it. And they don't do this every day for a living. And very few agencies have the privilege of having somebody whose job is to just coordinate and design exercises.

Even though it would seem that HSEEP standards would have provided procedural certainty, for this group, they did not. It became clear, instead, that writing the exercise plan was a technical skill that not many exercise participants had had a chance to develop – or perhaps even wanted to.

ICS as a source of procedural un/certainty. During the exercise, the use of ICS was somewhat selective. In CSE, a state level incident management team set up a command post on the evening of the first day of the exercise and spent the second day developing ICS plans for the third and last day of the exercise. This team's sole purpose was to apply ICS to the 'letter of the law.' They filled out every form on a large wipe-off template, then entered the data into electronic versions of the forms on the computers

they brought. Unfortunately, none of the local participants and almost none of the state-level participants saw any of this. In the AAR, someone suggested getting the state IMT involved more in the planning and have them present for the whole exercise. The lead facilitator agreed, and someone reminded them that one person had volunteered to set this up but never followed through.

The IMT did use its materials to brief the incoming National Guard participants on the incident. This raised an important issue of contention. Part of the ICS process is to plan the next operational period: the resources needed, how assets will be organized into task forces, etc. The way that the IMT planned for the National Guard participants to work in task forces was different from the way the National Guard groups had decided to organize themselves, and the commanding officer was upset. She initially thought that the IMT was telling her how to do her job, without the expertise about how she had been trained to do it. Later, one exercise planner from the Guard explained,

“The incident management team giving that briefing to the [Guard’s explosive specialists], I think that was really good, because they had to make some assumptions about what that group did that weren’t necessarily correct, how they were going to task-organize some things. And the commander actually had to have a conversation with them about, ‘Hey, this way, that way’... so there was a little bit of learning there, too. And she [the commander] walked away saying, ‘Alright, I understand that I would bring in this, this and this, and these guys may try to chop me apart, and I’ve got to decide, am I going to let them chop me apart, based on the need, or do I need to kind of keep a little bit more group integrity?’ So that was good, good learning point there, how all of that worked.”

The IMT representatives treated it as a misunderstanding, diffused the situation, and helped to make it a learning opportunity for the future.

The National Guard group also used ICS to manage their incident from a mobile command post during day three of the CSE exercise. While this seemed like it would minimize confusion and frustration, it did not seem to have that effect. When I arrived at about 8:00 a.m., the participants were finishing an elaborate set up of decontamination and medical tents. In the command tent, the incident

commander was shouting orders, frenetically, at a series of people in the tent and on the radio as well. Despite the elaborate ICS insignia all around – forms posted and filled in with the latest information – it was chaos. I later learned that they were about an hour behind schedule because setting up the equipment and inspecting the structural integrity of the collapse pile took longer than expected. At one point, in the command tent, the incident commander turned to me and barked, “Do they shout like this at your university?” “At the sports games, they do,” I replied. His demeanor reminded me of the kind of sideline screaming one sees from the coaching staff at football and basketball games.

At points in the exercises, people talked about using ICS forms to record or share information, but then decided not to. For example, the small group that comprised the logistics section of the CTT exercise at one point asked the incident commander if they should record what they were deciding on a particular ICS form, and the incident commander told them not to bother. In the previously mentioned technical rescue team hot wash for the CSE exercise, the controllers talked with the group about the sketch they made of the incident site (including where they found victims); they asked how they would pass on this information to the next operational period if there were one. They said they could pass on the sketch itself, and the controllers said that would be a good idea – and it would also be a good idea to fill out an ICS 201 form. “We didn’t do that here,” the controllers explained, “because we’re so short-staffed. We were ten people doing what forty people would normally be doing in a real incident.” While I was chatting with the simcell exercise participants over the lunch break at the NCD exercise, I asked why people don’t use ICS to plan and run the exercise itself. The controller explained, “ICS doesn’t really kick in until an incident happens. It is really for an event that is already in progress – to help you plan for the next operational period, and the next one.” Participants seemed to see the application of ICS as fairly limited, even in the exercise context.

Responses to procedural uncertainty conflicts. A consequence of these challenges was that the lead facilitators were overwhelmed with last-minute questions and sometimes did extra work to compensate for others. The Guard incident commander described above seemed to respond by shouting – maybe that was just his style, but no one else seemed to be quite so anxious. I asked the lead facilitator of

the CSE exercise if there are really any common procedural languages – if HSEEP or ICS really worked that way in his experience. He replied that what makes anything a common language is really repetition:

“You talk about the common language, that's the Incident Command System, or they call it NIMS, and really all they say is, ‘Talk plain English so that everybody understands what you're talking about.’ Because a ‘TRT’ to the fire department is not a ‘TRT’ to the police department. One's a tactical response team, one's a technical rescue team. I don't know of any other methods or guidelines out there for designing exercises. I haven't heard of, you know, the ‘Joe Snuffy Method’ [laughs]. I have experienced, with the military, that they go through the regular military planning cycle and they get into the little militant way of how we do things and pushing them and using the HSEEP planning process works out really well because you can translate it over. You can say, ‘We're going to have a planning conference’ [repeats twice]; I don't care what I call it, the right people have to come and these are the things we're going to talk about in this meeting. It works out. As far as a common language for planning, HSEEP says just follow the incident command structure, plan the exercise the way you would normally respond to an event. And as you start making them bigger -- there's no guidelines for saying a 'small full-scale exercise' vs. a 'giant full-scale exercise.' It just says here are the different milestones, the things you need to accomplish in the different meetings. And it's flexible.”

If repetition is indeed the key, it did not seem like exercise participants were practicing with the shared procedures enough to reinforce them.

In general, the structures that some participants treated as the collective's designated ‘common language’ did not seem to be commonly used nor commonly understood. Such structures clearly had the potential to general productive confrontations about coordination – as in the case of the IMT group and the Guard commander – particularly when the parties involved adopted an attitude of learning, rather than dictating, how best to use existing structures to coordinate among agencies. More often, I observed that these existing structures prompted more questions than answers: whether they should be used, who should use them, when they should be used, to what extent they should be used. As such, they seemed to have

more potential to generate conflict than to resolve conflict.

Disparities in Team Member Effort

Another source of conflict came from varying degrees of team member involvement; some agency representatives expended much more effort for the exercise than others. It was also the case that planning teams experienced turnover – some agencies joined in later in the planning process, some dropped out, and others sent different representatives at different times. Some agencies agreed to participate, but their representatives rarely attended planning meetings. In the team literature, these disparity of effort kinds of conflicts sometimes fall under the heading of social loafing, but in this interorganizational setting, the motives and conditions of differential involvement seem more complex. In this section, I will talk about three areas of conflict related to three areas of team member involvement: members missing in action, members not providing requested information, and under-attendance at after action review meetings.

Missing in action. Some agency representatives joined the planning process late through no fault of their own, such as the previously mentioned fire department representative whose bosses sent him to the planning meetings. Others were simply not among the first wave of people invited to participate, and they, too, felt like the exercise was not really for them. For example, the agency representative for one of the hospitals commented, “Well, I will say that I think a major part of this exercise was more driven toward police, fire, and special teams. The hospitals were, kind of, an end result, or an add-on actually.” Other agency representatives did not make it a priority to attend planning meetings. One of the lead evaluators explained her frustration with metro and county SWAT representatives not attending planning meetings:

“That's one of the failures. The actual commanders, during the planning stages, did not attend most of the planning meetings, and that would have been something that, if they had been in on the planning phases, they could have side-barred with each other and worked a lot of things out, but they did not. They knew that they were training in the same location, but they thought they were completely training separately and there would be no cross-communications or anything like

that. County ended up having their own tactical operations with their SWAT commander, and then metro had their own, and it should have been a unified command structure, but the each had their own.”

This also frustrated the state weapons of mass destruction representative, who wanted to plan his portion of the exercise to dovetail with the metro and county SWAT teams, but from his account, not only were they not at the meetings, but they didn’t return his phone calls.

The previous examples relate to the planning process, but several exercise situations reflected the missing-in-action phenomenon as well. In CSE, the local agency participants were all invited to come back and see the National Guard portion of the exercise, but almost none of them did. Only the local coroner came by to meet the National Guard exercise participants and talk with them about how they might work together in a real incident. In contrast, the NCD exercise was not able to get the coroner to come and participate, a point that they mentioned with disappointment in the hot wash at the end of day. The NCD exercise also ran into a snag when a county sheriff decided to spend the morning in the field portion of the exercise, rather than in the EOC, where he would be stationed in a real incident. The EOC group wanted to consult him to make a decision as part of their exercise, but he couldn’t be reached, and the neighboring county sheriff was not willing to speak for him. The lead facilitator of the NCD exercise explained, “The EOC had a key department missing, the [County B] Sheriff’s Office. They needed to make a decision, but there was no one there to make it. It turns out the sheriff was out in the field. So I would recommend putting an alternate in the EOC to represent the [County B] Sheriff’s Office.” Perhaps others’ expectations were not adequately conveyed, but some people failed to meet those expectations regarding their involvement.

Failing to provide timely information. The lead facilitators often relied on agency representatives to supply them with information specific to their agencies, such as target capabilities or exercise objectives, a roster of participants, and, in the case of CSE, the injects for the agency-specific portions of the exercise scenario, and lessons learned for the AAR report. I previously mentioned that some of the injects provided demonstrated a lack of understanding of the format. In addition, the lead

facilitator had a very difficult time getting any injects from some of the participating agencies. One of the controllers explained:

“Now I think [CSE lead facilitator], if you’ve talked to him, would say, ‘I had to pull information from people,’ because they weren’t getting it to him on time. And so with him not getting the information on time, he couldn’t put it into his formatted form. And so he was having to skip around until he got injects from people, and then I think toward the end we were down to crunch time and he was finally getting all the information he needed.”

Some participating agencies also disregarded instructions to check in at a central location before going to the exercise venue, which contributed to confusion for their agencies and for other agencies at the venue. For example, the fire department – technical rescue agency representative told this story from the CSE exercise:

“They had told us through the planning process that they wanted us out there at a certain time. And our involvement was based on the script of, after the hazmat team arrived, and basically, they arrested this guy and he chose to blow up whatever he did. Once the building got blown up, the hazmat team was going to request the need for the TRT team. Well, the adjustment came when the hazmat team never reported to the aircraft hangar for check-in, and the planners had no idea that the hazmat team was even there. So we started on time, like we were supposed to, and we started going through the scripts. They were dispatching people out there, according to the schedule, but the hazmat team wasn't even on the premises. They were on that field to the south, because they never went to the aircraft hangar to check in. And so nobody had any idea that they were there. And how it played into us is, they told us to go ahead and go out there [to the venue]. When we pulled up, the cops thought we were the hazmat team, because we pulled into the parking lot, because they were going off the script. We're like, ‘No, no, no, we're the special ops team,’ and then the hazmat guys were behind the eight ball because they weren't even in position to get in to the facility. They had to come in after we did. And we each have two big sets of trailers and big trucks to pull them. And so we had to make an adjustment of how we were going

to position them in there, and basically we had to ad lib our script as far as, ‘Okay, the buildings have already been detonated and we’ve got people trapped, and we’re going to begin the process,’ even though we weren’t scripted into the process, and adlibbed later on. So a lot of those challenges, through the planning process: ‘There’s the script, that’s what we’re trying to all go for’ -- because we all understood what were to do and that one thing being out of order or not following the check-in process kind of threw everybody for a loop because we didn’t get to come into the event with certain things already having happened.”

These oversights were understandably frustrating to exercise planners and confusing to participants. As the SWMD representative commented, it was particularly disheartening because he didn’t feel like he was asking very much of the other agencies: “And you know what’s funny – and then I’ll get off my soapbox – but it’s not that difficult. We’re talking a five-minute conversation as to what needs to be done for us to be brought in and then where we need to go to pass this off beyond; you know what I mean?” I can’t help but agree; it doesn’t seem that difficult when you put it that way.

Absenteeism at after-action review meetings. Hot wash debriefs that immediately followed the exercise were generally well attended, since participants were already on site. After-action review meetings that occurred on a different date – as they were for NCD and CSE – engendered less engagement. In the case of NCD, the AAR meeting was simply cancelled. The lead facilitator prepared a report and shared it with individual agency representatives, but no “problem-solving” meeting was held to debrief the contents of the report. Even the hot wash at the end of the day at NCD was missing a few agency representatives, and the nature of the discussion was a series of venue-specific report-outs – no collective idea generation or decision-making regarding matters of shared concern. The CSE did not have the luxury of having a hot wash with all participants, given its three-day, piecemeal format. The AAR meeting held several days after the exercise brought only about half of the agency representatives. The discussion that ensued did raise issues of common concern, such as improving radio channel signal power and training together for future exercises, but no one volunteered to follow up on these issues. When I

asked the lead facilitator about his impressions of that meeting, he said, “A lot less people showed up.” I agreed, and he continued,

“Yeah, well, and I knew it was gonna be that way because I’d already talked to some outside that said it’s over with, done, not gonna do it again. And I even told [lead controller], and I think I even said something to [lead facilitator]. I said, ‘Hey, you realize a lot of these people aren’t going to be here.’ That’s just the way it is. The exercise is over. Once the box is checked, that’s it.”

The CSE lead facilitator also expressed that he was “Very disappointed in the amount of participation” in the AAR. I asked if he was surprised, and he replied:

“Very surprised. We always, from the very beginning, were going to do it right away after the exercise, soon. And a little bit out of the norm of people being done with the exercise and the ‘not give a shit’ factor goes up. This one was very high. Very disappointed with who wasn’t there. Not as much so disappointed in some of the quality of what the evaluators had provided to [the lead evaluator] for the report. It is what it is. So I try not to take that personally.”

To me, like to the CSE lead facilitator, this seemed like a missed opportunity. The lack of attendance seemed to suggest a lack of interest in interagency or community-level learning.

Responses to discrepancy in member effort conflicts. Regarding the planning latecomers, the lead facilitator made the effort to talk with each one initially, get them up to speed and make sure they felt comfortable. At the same time, it seems that they still walked away with the impression that it was somebody else’s exercise, and they should just try to fit their piece in where they could. They did not see themselves as equal partners in the exercise. This seemed strange to me, because I observed that the two aforementioned groups were among the most active and appreciative of all of the involved agencies. Perhaps the missed opportunity was more about other agencies not seeing them in action and not knowing more about how to interact with them. Regarding others missing in action, exercise facilitators and planners seemed to feel helpless to prevent that. Like with unified command, leaders would like to tell people that this is their job, but they also can’t promise that the people will follow through. The team

members who did not provide information prompted the individual who needed the information – e.g., the lead facilitator or lead evaluator – to pester them individually; this is a frustration for those individuals, but never reached the level of a group concern. Regarding under-attendance at follow-up meetings, again, leaders seem to accept that this was a matter of personal choice, and the best they could do was ‘live with the living.’

In contrast, there was exceptionally strong group problem solving in the planners’ hot wash for the CTT meeting. It was all operational leaders – no EOC personnel – and the only major party missing was the smaller local college. The group had robust discussions of several issues, such as when to issue alerts to operational and policy personnel and which group had the authority to make certain kinds of decisions. They also talked about how to help the local college representatives get up to speed, and they confirmed their commitment to doing so. Unfortunately, since no representative of the local college stayed for the hot wash, this could not be an instance of confrontation, nor could the local college representatives ensure that their concerns or questions were addressed. Still, this instance provides a contrasting example, in which a small group engaging in confrontive problem-solving discussion examined issues and reached decisions for the future.

Mixed Motives

The term *mixed motives* refers to the combination of group motives and individual motives – in this case, the shared goals of the entire exercise group and the goals of the particular agency that a member represented.

Collective goals: preparedness and safety. There were three very strong shared goals that seemed to unite exercise planners and participants across agency lines. The first was the general desire for preparedness. Many of the comments on the exercise evaluation and in the individual interviews reflected the attitude that, “We don’t do this enough,” and “We need to be ready for anything.” Second, the exercise brought together individuals that were not accustomed to working together, both within agencies and between agencies. This was widely regarded as one of the greatest benefits of the exercise. Lastly, a cause that united participants was safety during the exercise – in other words, avoiding real-

world injury or illness for exercise participants. This included the physical safety of participants, as well as reputational protection through the management of media coverage of the exercise. These three areas of common concern prompted productive discussion in planning meetings and served as points of unity for the agency representatives.

Agency-specific goals. At the same time, each agency brought its own very specific goals for the capabilities that it wanted its people to exercise. Interacting with other agencies was sometimes among these, but not first among these. Despite everyone's best intentions, it was my impression that the work felt 'silo-ed' during the exercise. Even in the microcosm of the CTT exercise, in which the operational participants divided into logistics, operations, and safety sections – as soon as these distinctions were established, they focused on their sub-teams and stopped checking in with the rest of the group. In every case, it was often unclear who was managing the incident, even when there was an explicitly-appointed incident manager. When confusion or deviations from the exercise plan arose, agency participants focused on what they could do within their agency group to make it a useful training day. The “let's make the best of this” attitude, while admirable, turned them inward, rather than outward. Rather than trying to salvage the inter-agency learning opportunity, they worked from the perspective, “How can we salvage this training day for our people?” The SWMD representative described his perspective on making the best of a day with some interagency snafus:

“The takeaway was that our team actually got some very good training out of it. The command post issues were, kind of – I blame it on planners and on some of the evaluators that some of the things that would've driven us to even be there, to show up, and/or to go in and make entry, those driving forces weren't there. And I know [my agency's training specialist] had to step in on some issues where she wasn't supposed to. It wasn't her job to do that, but she had to call a timeout and say, ‘This needs to be straightened out and this needs to be straightened out.’

So that was that and because of that it was described as being a cluster for a while. It just didn't – our aspect didn't go as smooth as possible. I told you two of the major things. One is that the local department that would normally call us in didn't give us a reason why we would get called

in. They didn't give a shit either. That was one of the words that they said – and I'm sorry for my language – but one of the things they told our team is that, 'Hey, we're done. We're going to another building to train. You can do what you want to do.' So that wasn't a great attitude. And then the second was that the other thing we planned on with the local HAZMAT team and going through DECON [decontamination] – that didn't happen either, so two major training objectives of interacting with the other teams didn't exactly work out that well.”

Despite all of these challenges, his team was able to focus on their intra-agency objectives and make it meaningful training day in other respects.

In some cases, this kind of defaulting to a focus on one's own agency happened even in the planning process, such as when the hospitals participating in the CSE exercise decided that it would be best for them to have their own exercise on the second day of the exercise, not on the first day when the other local responders were exercising. Consequently, there was very little interaction between these groups. The hospitals had a productive exercise day among themselves, and that went beyond the single-hospital exercises that they would typically run, but they did not get to educate other agencies about their processes, or vice versa. One could say the same of the National Guard group in the CSE exercise – although they initiated the other portions of the exercise, their specific scheduling and training needs precluded actually training with others. One of the Guard planners that I interviewed kept using the metaphor that planning a multi-agency exercise is like hosting party. Near the end of the interview I asked him, “So if we revisit the party metaphor, who had the best time at this party? Who got the most out of the exercise?” He thought about it for a second, and he answered, “Well, I guess we did.” Similarly, a number of the agency representatives whom I interviewed were extremely pleased with what their agency was able to do during the exercise, even if they were displeased with or simply oblivious to the interagency elements.

Sometimes, even when group goals were discussed, individual agencies decided to do their own thing anyway. For example, in the third planning team meeting, the lead facilitator raised a question about which agency or agencies would provide “simunitions.” Simunitions are realistic-looking, fake

weapons with non-lethal ammunition that are commonly used for military and law enforcement training. Representatives of the state SWAT team conferred privately at their table, and they offered to bring simunitions for their portion of the exercise. Then, one SWAT representative asked whether there would be any “real security” on the scene. He explained that, with so many unarmed police and SWAT officers participating in the exercise, they might be an easy target for a real “bad guy.” The state emergency management agency representative rejoined that, due to the grant specifications, no live weapons were allowed on the exercise site. He warned that they would lose their grant money if they got caught with any live weapons. One state SWAT representative offered that they could post a SWAT squad with live weapons on the perimeter of the exercise site, just to be safe. The facilitator appeared a bit reluctant. He looked to the state emergency management representative, who posed no objection, and he said that would be okay. When I talked to the facilitator afterwards, he expressed frustration with the SWAT representatives, because, in his opinion, they were acting paranoid; they seemed overly worried about not being armed for two hours. During the SWAT period of the exercise, I was chatting with a National Guardsman who was assigned to direct traffic on the street running through the exercise site. A SWAT truck drove by, transporting a group of exercise participants in full gear, and the Guardsman looked surprised. He turned to me and said, ominously, “Those aren’t simunitions.”

Responses to mixed motives conflicts. In the instances described in this section, we see more of the individual motives being prioritized over the group motives. Sometimes this was explicitly addressed – at least decided ahead, if not seeking the group’s input as part of the decision; other times covertly. I did not observe any confrontation in this area; rather, agencies seemed to think that it was not appropriate for them to ask others to adapt with them – instead, they should stay out of each other’s way. In the positive evaluations of the experience, I sometimes detected a note of defeatism, as in this comment from the fire department – technical rescue representative:

“We wanted to [get involved with the CSE exercise] as soon as we heard about it. We thought it would be a great opportunity to do – like I was telling you before, we thought we were going to be more hands on with the National Guard than what we were, but regardless of how it all ended

up, it was an awesome experience for our team. We got really good feedback, we identified some weaknesses, some little things that-- there's no way you can plan for them without something like that. I'm very thankful for that opportunity.”

The gratitude expressed here is certainly genuine, but perhaps so is the note of powerlessness.

These examples demonstrate a general lack of communication across agency lines about the negotiation of individual and collective goals. The establishment of collective and agency-specific exercise objectives was completely mediated by the primary exercise planner, such that this person served as a liaison between agency representatives – even, it seemed, in planning meetings with all of the agency representatives. These examples also seem to suggest that a proportion, perhaps the majority, of exercise participants prioritize their agency objectives over the overall exercise objectives. This calls into question the extent to which exercise planners and participants from different agencies agree on the priorities of the exercise – or even the primary purpose of multi-agency exercises in general.

Task-related Interdependency

Lastly, task-related interdependencies produced some conflict. Sometimes these were built into the master scenario exercise list (MSEL), and sometimes they occurred organically during the exercise. In the best cases, interdependency issues that came up through the injects were discussed in the agency-specific hot wash, even if they weren't carried out during the exercise. This was the case for the TRT group discussed earlier, as well as the group in NCD exercise that asked the mock victims to get up and walk off the bus rather than packaging them for medical triage as if their injuries were real. When they occurred organically during the exercise, sometimes one party was willing to correct the others' mistakes, and sometimes not. A good example of a confrontation was the previously described instance in which the National Guard commander explained to the IMT that the way that they had organized the task forces would not work for her. Although this started as a somewhat heated moment, the IMT representatives were amenable to learning and thanked her for saying something. A less effective example occurred between 9-1-1 dispatch group and several of the local agencies in the CSE exercise. Two pairs of dispatchers were responding to the exercise radio traffic, making records and passing on information as

they would in their real dispatch work. As she described in the after action review meeting, “We need everyone to be giving us location information when they call in. Initially, they didn’t do that, and we didn’t ask because we were trying not to impede the progress of the drill. We normally would have had to ask for that information, and we didn’t do it.” In my observation notes from my time with two of the dispatchers I noted that they seemed to be struggling to figure out what to say, because they knew that things were going wrong, but they seemed to think that they would be contaminating the exercise by correcting people – or even by asking questions that would prompt them. As I mentioned with respect to the “mass casualty” comment, when the dispatch representative did bring up this issue in the AAR meeting, unfortunately, many of the people who would have benefitted from the information weren’t there to hear it. The lead evaluator asked her to write it down and email it to him so that he could be sure to include it in the report, but there is no guarantee that the report would be read, shared, or used as a training tool (although that was certainly its intention).

All that said, there were some points of interagency interdependency that participants counted among the successes of their exercises. Some interactions between just two agencies yielded discoveries of interdependencies and a learning moment for both parties, such as the previously described interaction between Red Cross and Public Health at CTT. Other participants were just glad to have the exposure to faces and names of people from other agencies, even if it was sparse or informal. The CSE lead facilitator described this a point of pride for him, too: “As an organization, we want to go out there and support, we want to build relationships with people that we could be working with in the future.”

Eight Common Tensions in Disaster Response Exercises

Looking more specifically at the uniquely context-specific conflicts in these data, I generated a set of eight tensions that seemed to be present in each of the exercises that I observed. I speculated that they might perhaps be common to all such disaster response exercises. I have alluded to the majority of them in the preceding analysis, so I merely list and describe them here. They are also summarized in Table 17 at the end of this chapter.

Planning versus improvising. In some aspects of an exercise, participants were expected to follow the script or the exercise plan without deviation. To violate it was treated as disrespectful to planners and a form of ‘breaking the rules’ of the exercise. In other aspects of an exercise, participants were expected to choose their own actions and improvise as needed – sometimes even ignoring part of the exercise plan if it was no longer relevant. Sometimes participants were praised for adapting and adlibbing; other times, they were chastised for not following the exercise plan.

Following versus violating standard operating procedure for notional exercise elements. Exercise planners expected participants to dismiss some aspects of an exercise as notional – as in, "We all know that we wouldn't really do it that way, but we're doing it that way for today's exercise." At the same time, exercise planners generally expected participants to apply their knowledge of standard operating procedures to demonstrate their competency during the exercise. Similar to the planning versus improvising tension, it was not always clear when participants were expected or encouraged to violate standard operating procedure, as opposed to when they were supposed to treat standard operating procedure as sacrosanct.

Ignoring missing elements versus addressing missing elements. There were some exercise artificialities that planners intended for participants to ignore (e.g., "we just don't have that information") and others which planners intended for participants to improvise to address (e.g., "pretend that we have that information -- just make something up to keep the exercise moving"). Distinguishing between the two intentions appeared to be confusing to all parties.

Intervening immediately versus giving constructive feedback in the debrief meeting. As a training philosophy, some people – albeit a minority – seemed to think that it was better to intervene immediately when they saw participants making a mistake. Others preferred to let participants play out the whole exercise, believing they would learn best by analyzing the failure and its consequences at the end of the exercise. More broadly, this philosophy was captured in the idea that some people saw exercises more as interactive lessons, to be elaborated on while in process, while others saw exercises

more as tests, in which participants should be given a chance to prove what they know without disruption and should then be evaluated holistically after finishing the exercise.

Arriving simultaneously versus arriving gradually. In a real incident, personnel would arrive at the scene or the Emergency Operations Center incrementally -- not all at once -- and would commandeer as much space as needed to manage the incident. In an exercise, participants all arrived at a pre-determined start time. Consequently, space for parking, equipment, and meetings was sometimes limited.

Operating on a 24-hour operational period versus operating on an 8-hour work day schedule. A real incident would have a 24-hour operational period; in other words, the response would be continuous, and personnel would be rotated in and out to support a continuous response. In exercises, it was more cost-effective to condense the exercise scenario into a 4- or 8-hour work period (i.e., part or all of a normal work day). As the “finite resource” section of the prior analysis illustrated, translating a continuous response into a set of simultaneous 4- or 8-hour segments created a heavy administrative burden for exercise planners and often confused exercise participants. At the same time, it seemed that far fewer agencies could afford to participate if the exercise were conducted on a 24-hour operational schedule. This, too, would create additional administrative challenges.

Pacing the release of information. In a real incident, responders and government officials would not be able to control the pace at which new information about the incident became available. In an exercise, however, exercise planners strove to manage the pace of information in order to keep participants occupied throughout the training period. This sometimes made it difficult to practice how information should flow in a real incident. Exercise participants seemed to resent having to wait on information, even though they understood that, in a real incident, the arrival of new information would be entirely unpredictable.

Enacting special authorities. Certain positions (e.g., city and county leaders, members of Unified Command, etc.) are designed to take on special authorities during a crisis. Because these authorities are rarely activated, the individuals occupying the positions may be unfamiliar with them.

Although exercises typically emphasized practice, some parties did not seem to have enough information about their roles to effectively practice them. Differences in status sometimes prevented both higher and lower status individuals from speaking candidly about what they did and did not know about special authorities and their domains.

As I considered these tensions, I began to wonder whether differing positions on some or all of the tensions might contribute to the dismissiveness that I sometimes observed among exercise planners and participants. At times, in response to tensions, participants were quick to shrug off misunderstandings or frustrations as “exercise world” – but this did not seem to me to be a complete or satisfactory answer to any of the tensions.

Conclusions

Although my analysis focused on conflicts, conflict responses, and confrontation, I found many aspects of the exercises to be very impressive and – as a citizen who might one day experience a disaster – very reassuring. Each exercise had a high degree of complexity, and each showcased successes as well as challenges. As a communication scholar, however, I was surprised by the overall lack of cooperative problem-solving between agencies, whether one-to-one or as a group of agency representatives.

Research question one asked about the kinds of conflicts that arise in a multi-agency disaster response exercise. Many of these conflicts, in my view, all under the auspices of established sources of conflict in group and organizational settings: power differences, finite resources, role uncertainty, procedural uncertainty, disparities in team member effort, mixed motives, and task-related interdependency. Some of the conflicts – or, as I came to see them, tensions – seemed unique to the context of disaster response exercises.

Research question two asked about how exercise planners and participants navigated conflicts, and research question three asked, more specifically, how and when confrontation behaviors emerged. I came to see the question of ‘when’ as increasingly important. Logically, there really only three options for when a party can respond to an instance of competing goals (i.e., a conflict): before it happens, as soon as it happens, or sometime after it happens. My assumption had been that it would be best to

anticipate potential conflicts in the planning stages of the exercise and address them before they might happen. Upon reflection, I think that that approach may put unreasonable demands on the exercise planners and, worse yet, may prohibit the exercise participants from learning more about other agencies' preferences and needs first-hand. From the analysis presented here, it also seemed that waiting for a designated feedback period was not the most effective time to address a conflict, either. Although it would not have to be this way, in practice it seemed that key individuals did not attend hot wash or after-action review meetings, and such meetings produced more superficial than robust discussions of unresolved issues. Particularly in the larger exercises, an attitude of "write it down for next time" seemed to prevail over an attitude of "let's sort this out right now while it's fresh in our minds."

The issue of addressing a conflict as soon as it happened met with mixed results, which is where the topic of conflict management style could perhaps make a contribution. Regarding the question of how parties responded to conflict, the responses did not defy extant thinking about broad categories of conflict management styles, but they did suggest that more nuanced analysis of intentions, behaviors, and conflict cycles would be warranted. The decision to address a conflict later (if ever) matches the concept of conflict avoidance, but conflict avoidance can be manifested in multiple ways and may not, in every instance, be pathological. The decision to let others do what they will seems like accommodation, but I saw several different shades of this phenomenon in these data: let others do what they will so that they can see the consequences for themselves, let others do what they will because you have no formal power to influence them, or let others do what they will because it simply doesn't affect you and your priorities. Compromise only seemed to be mentioned when someone had accepted less than what he or she really wanted, not as a bargaining tool to get another party to acquiesce.

Cooperative or win-win solutions – i.e., the emphasis of the traditional collaborative conflict management style – required a relatively high level of investment from participants. As has been well established in group communication scholarship, reaching consensus takes substantially more time and energy than other forms of decision-making. Accordingly, smaller groups, or even pairs of agencies, seemed the most likely to invest in cooperative problem-solving to reach consensus. To do so,

confrontation was required, and often one party had to initiate it. In agency-to-agency contact, sometimes the party that did not initiate the confrontation rejected the other party's authority to do so. In such cases, ego conflict or avoidance ensued. In other cases, the party that did not initiate the confrontation welcomed the confrontation as a learning opportunity – in other words, an opportunity complementary to their goals and to their purpose for participating in the exercise. This learning frame seemed to me to be a powerful resource – after all, all participants acknowledge that disaster exercises are *training* exercises. The tension that encapsulates the lesson-versus-test metaphor may, however, prevent this frame from being widely adopted. Similarly, tensions related to following procedures rather than adapting may dissuade exercise participants from engaging with one another in these learning moments.

Phase 1 of the study shed light on the types of conflicts that emerge in disaster response exercise, how participants navigate conflicts, and how and when confrontation behaviors may occur. It did little, however, to help me tease out the distinction between collaboration and confrontation – nor how they may relate to one another and to exercise outcomes. Phase 2 of the study (described in the next chapter) uses the vocabulary and key concepts that I drew from Phase 1 to further examine the relationships among motivations, exercise involvement and investment, collaborative interaction behaviors, conflict styles, and participants' evaluations of the success of the exercise.

Table

Table 17

Eight Common Tensions in Disaster Response Exercises

Plan vs. Improve	In some aspects of the exercise, participants should follow the script or exercise plan without deviation. In other aspects, participants are expected to choose their own actions and improvise as needed.
Notional Elements and SOPs	Exercise planners expect participants to dismiss some aspects of the exercise as notional -- in other words, "We all know that we wouldn't really do it that way, but we're doing it that way for today's exercise." At the same time, exercise planners expect participants to apply their knowledge of standard operating procedures to demonstrate their competency during the exercise.

Table 17 (continued)

Ignore vs. Address	There are some exercise artificialities that planners intend for participants to ignore (e.g., "we just don't have that information") and others which planners intend for participants to improvise to address (e.g., "pretend that we have that information -- just make something up to keep the exercise moving").
Intervene vs. Debrief	As a training philosophy, some people think it is better to intervene immediately when you see participants making a mistake. Others prefer to let participants play out the whole exercise and then learn by analyzing the failure and its consequences at the end of the exercise.
Simultaneous vs. Gradual Arrival	In a real incident, personnel would arrive at the scene or the Emergency Operations Center incrementally -- not all at once -- and would commandeer as much space as needed to manage the incident. In an exercise, participants all arrive at a pre-determined start time, and space for parking, equipment, and meetings may be limited.
24-hour Operation vs. 8-hour	A real incident would have a 24-hour operational period. In an exercise, it is more cost-effective to condense the exercise scenario into a 4- or 8-hour work period (i.e., part or all of a normal work day).
Pace of Information	In a real incident, responders and government officials cannot control the pace at which new information about the incident becomes available. In an exercise, exercise planners strive to manage the pace of information in order to keep participants occupied throughout the training period. This sometimes makes it difficult to practice how information should flow in a real incident.
Special Authorities	Certain positions (e.g., city and county leaders, members of Unified Command, etc.) take on special authorities during a crisis. Because these authorities are rarely activated, the individuals occupying the positions may be unfamiliar with them. Although exercises typically emphasize practice, some parties may not have enough information about their roles to effectively practice them. Differences in status may prevent both higher and lower status individuals from speaking candidly about what they do and don't know.

Chapter 6: Phase 2 Design Using Phase 1 Results

Although instrument development is a relatively common purpose for mixing methods, the process that a scholar employs to get from the analysis of qualitative data to the design of a survey instrument is rarely transparent. The goal of this chapter is to describe how the analysis of qualitative data from Phase 1 – in concert with reviews of extant literature – informed the development of the online questionnaire employed in Phase 2 of the study. I entered the qualitative analysis having already identified some key variables in extant literature, such as collaborators' perceptions of the anticipated impact of the cooperative effort and collaborators' level of participation. The results of the qualitative analysis did not persuade me to include any different or additional variables, but they did strongly inform how I measured the variables in the particular context of multi-agency disaster response exercises. The majority of the questionnaire consisted of original items and scales, and it would not have been possible to create context-sensitive items without the knowledge I gained from Phase 1 of the research. This chapter addresses how I used the results of Phase 1 in three aspects of questionnaire design: vocabulary, items, and scales.

Vocabulary

The validity of a survey instrument relies in part on the degree to which its language and terminology make sense to research participants. Survey instruments rely on closed-ended items; this means that both the questions and the answer options must seem relevant and comprehensive to participants. My Phase 1 research provided me with the vocabulary to write closed-ended items in language that was familiar to participants and allowed them to proceed through the questions with relative ease. This was particularly helpful for the variables described below.

Exercise characteristics. My exposure to the context in Phase 1 also allowed me to write concise, closed-ended items about the characteristics of the focal exercise – that is, the exercise in recent experience about which the participant chose to answer the questions provided. I asked about the type of exercise, the types of agencies included, and the type of agency that the participant was representing in

the exercise. Although these variables do not appear in the Phase 2 results, they may prove fruitful for future analyses.

Satisfaction with exercise process and results. For these variables, I adapted a number of items from the HSEEP exercise evaluation question bank, which provided the language used in exercise planners' development of target objectives, as well as in the after action review meeting. These items included, "The participants included the right mix of people in terms of level and mix of disciplines," "After this exercise, I believe that my agency is better prepared to deal successfully with the scenario that was exercised," "Exercise participants met all of the exercise objectives," "The exercise was well organized," and "This exercise allowed my agency to practice and improve priority capabilities." Encountering these kinds of phrases in multiple exercises reassured me that the HSEEP items were true to participants' way of assessing the success of an exercise.

Items

Similarly, my observations and interviews helped me write items appropriate to the proposed variables. For example, the involvement variable consisted of a checklist of exercise-related tasks or activities; the question prompted participants to select all that described something they did as part of the exercise in question. The list for planners included nineteen items (e.g., "I created exercise prompts or 'injects' for my agency's portion of the exercise," "I provided feedback on a draft version of the exercise plan, or 'MSEL', in advance of the exercise," etc.), and the list for non-planners included sixteen items (e.g., "I attended an orientation meeting before the start of the exercise," "I participated in a 'hot wash' discussion immediately after the exercise," etc.). I would not have been able to generate these lists of items without observing several exercises directly and noticing which tasks or behaviors seem to distinguish the more involved participants from the less involved participants. It was also apparent to me that, regarding the resource commitments of participating agencies, that participants would best be able to assess their agency's investment on a relative basis: more than all of the other participating agencies, more than most other participating agencies, about the same as other agencies, not as much as most other

agencies. Accordingly, I created an item to correspond to the agency resource investment variable using these relative terms. I later converted it into an ordinal ‘score.’

Scales

Lastly, the Phase 1 study helped me develop several series of items to comprise original scales for the variables anticipated impact, expertise recognition, informational support, and timeliness. Phase 1 also produced the list of eight common tensions in disaster simulation exercise design, which I then included in the questionnaire to find out whether participants observed any of these tensions in their focal exercises – and, if so, with what degree of severity.

Anticipated impact. Although Keyton, Ford, and Smith (2008) proposed impact as describing the organization’s perception of the value proposition of the collaborative endeavor for their organization alone, my Phase 1 analysis pointed me to the possibility that perceptions of other agencies’ motivations to participate in the collaborative effort might also comprise part of that value proposition. Accordingly, I created items that described positive and (reverse coded) neutral or negative expectations of the exercise for the participant’s own agency, and I created items that described positive and (reverse coded) neutral or negative expectations of other agencies’ attitude toward the exercise. (See Appendix C for examples.)

Expertise recognition, informational support, and timeliness. These variables actually emerged in a more emic fashion. First, I wrote a series of items that described the kinds of interagency interactions that seemed to illustrate collaborative behaviors (e.g., “We prioritized our tasks so that we could provide timely information or updates to other agencies.”), and then I grouped the items by content similarity and applied dimension labels that resonated with organizational concepts (e.g., timeliness). Some of these items reflected behaviors that I did not see, as well as those that I saw, e.g., “No one approached or contacted my agency to talk about how our agencies should be working together.” These scales strongly reflect the kinds of interactions that seemed influential in my Phase 1 data collection and analysis.

Common tensions in disaster simulation exercise design. As described in Chapter 5, the list of eight common tensions emerged from a purely context-specific induction of tension-related themes.

Naturally, I wanted to find out whether these so-called tensions would resonate with practitioners' views of their experiences. Accordingly, I included the eight tensions in the questionnaire, with the following instructions: "If you observed the tension, please select a rating from 0 to 10, with 0 being 'no tension at all,' 5 being 'moderate tension,' and 10 being 'very strong tension.' If you did not observe the tension, please select 'Don't know / Not applicable.'"

Although the tensions themselves do not comprise part of the conceptual model, I decided to explore their relationship to outcome variables in conjunction with Research Question 4.

As the previous paragraphs suggest, the Phase 1 analysis did not overrule my expectations about relevant variables that emerged from the literature review. It did, however, strongly influence the way that I operationalized and measured each variable.

Chapter 7: Phase 2 Results

Following the method described in Chapter 4, this chapter will summarize the results of Phase 2 of the study, which used survey methodology to collect quantitative data pertinent to the study phenomena. The survey asked each participant to think of a one particular multi-agency disaster response exercise in which he or she had participated in the last three years. Questions about that exercise included anticipated impact of the exercise for the participant's agency, the participant's level of involvement in the exercise, the degree to which agencies engaged in collaborative interaction behaviors with one another during the exercise, the conflict management style the participant employed in interagency interactions during the exercise, and the presence and severity of eight common tensions found in disaster response exercises (independent variables), as well as the participant's satisfaction with the exercise process and the exercise outcomes (dependent variables). In addition, the questionnaire asked for background information about the focal exercise (exercise type, number and types of agencies involved, etc.) and demographic information about the research participant (sex, birth year, number of years in field, agency affiliation type, etc.). The sections that follow describe the results of the analyses specific to the revised Hypotheses 1 through 4 (pp. 57-58) and Research Question 4 (p. 43).

Results

Hypothesis 1. Hypothesis 1 stated that, "Motivation to achieve coordination will be positively associated with collaborative interaction." Given the incoherence of motivation to achieve coordination as a latent variable, I investigated this hypothesis by testing a linear regression model with anticipated impact, other agencies' motivation to cooperate, involvement, and agency resource investment as predictors and collaborative interaction as the dependent variable. I found that agency resource investment was not supported as predictor; in other words, it did not appear to have a linear, positive association with collaborative interaction. Agency resource investment was, in fact, a nominal variable with four levels. Although the mean values of collaborative interaction ranged from 3.85 (s.d. = 0.87) at the lowest level of resource investment to 4.24 (s.d. = 0.50) at the highest level of resource investment, an

analysis of variance did not support rejecting the hypothesis that group means in the population were equal ($p = 0.135$). The other three variables did demonstrate a linear, positive association with collaborative interaction, with standardized linear regression coefficients of 0.242 for anticipated impact, 0.347 for other agencies' motivation to cooperate, and 0.188 for involvement ($p < .01$ for all). This model, shown as Model 2 in Table 18, explained approximately 35% of the variance in collaborative interaction.

Hypothesis 2. Hypothesis 2 stated that, "Collaborative interaction will mediate the relationship between motivation to achieve coordination and exercise satisfaction." The "build" half of the data set did not support a full mediation model. Table 19 shows the first four iterations of respecification, none of which supported a full mediation model for any of the input variables. With further respecification, the "build" data seemed to support a partial mediation model. The model that depicted both anticipated impact and other agencies' motivation to exercise satisfaction as partially mediated by collaborative interaction could not be subjected to a chi square test because it was just-identified, but the parameter estimates showed that the link between anticipated impact and exercise satisfaction was not statistically significant and therefore not supported ($p = .188$). Removing this link produced the preliminary model (with standardized regression coefficient estimates) shown in Figure 5 and described in Table 20. This model was not supported, however, in the "test" half of the data set, nor in the full data set. I began an iterative process of respecification on the "test" half of the data set. In these iterations, I returned involvement to the model, treated involvement as a partial mediator for the relationship between anticipated impact and collaborative interaction, and, for empirical reasons, removed the link between collaborative interaction and exercise satisfaction. This model was supported in the test data, but it was not supported in the full data set. I next returned the link from collaborative interaction to exercise satisfaction, and the model was supported by the full data set. I also found that including the involvement variable dramatically improved the model fit. This final model is depicted in Figure 6 and described in Table 21. In the end, the full data set supported a model in which: (a) collaborative interaction partially mediated the relationship between anticipated impact and exercise satisfaction; (b) collaborative

interaction partially mediated the relationship between other agencies' motivation to cooperate and exercise satisfaction; (c) involvement partially mediated the relationship between anticipated impact and collaborative interaction; and (d) the error terms of anticipated impact and other agencies' motivation to cooperate were strongly correlated.

Hypothesis 3. Hypothesis 3 stated, "Collaborative interaction will be positively associated with exercise satisfaction." Two tests support this hypothesis. A simple Pearson bivariate correlation test shows that collaborative interaction and exercise satisfaction are significantly and positively correlated at 0.431 ($p < .01$, $n = 211$). A simple linear regression model with collaborative interaction as the only predictor and exercise satisfaction as the outcome variable shows that collaborative interaction predicts approximately 18% of the variance in exercise satisfaction ($F = 47.695$, $p < .000$), and the estimated regression coefficient for collaborative interaction is 5.221 (s.e. = 0.756, $t = 6.906$, $p < .000$). Recall that exercise satisfaction was scaled like a traditional grading scale; this means that every increase of one unit in the average of ratings on the collaborative interaction items predicts an increase of 5 points in the overall 'grade' of the exercise – in other words, half a grade level.

Hypothesis 4. Hypothesis four stated, "Confrontive conflict management style will moderate the relationship between collaborative interaction and exercise satisfaction." In path analysis, moderation is modeled by creating a product variable and assessing its contribution to the regression equation estimated by the model (Kline, 2011, p. 332). Such models are just-identified, so the chi square test does not apply. Instead, the researcher examines the slopes of regression equations at particular values to assess the possibility of an interaction effect (Kline, pp. 328-332). I estimated the regression coefficients for each path using the maximum likelihood technique, then I examined the unstandardized slopes of the resulting regression equations by inserting tiered values of W , the confrontive style score variable – specifically, from one standard deviation below the mean value of W to one standard deviation above the mean. (Values of $\pm$ two standard deviations from the mean were not possible, given the way that these data were measured.) To identify interaction effects, one would expect to see the equation at one standard deviation above the mean render a slope direction opposite that of the equation at one standard deviation

below the mean. In the “build,” “test,” and full data sets, all slopes were positive. These results do not support the hypothesis that confrontive conflict management style moderates the relationship between collaborative interaction and exercise satisfaction.

Research question 4. RQ4 asked, “What is the relationship between the proposed eight common exercise tensions and participants’ overall satisfaction with the exercise?” Recall that participants were asked to rate the severity of the tension from 0 (“no tension at all”) to 10 (“very strong tension”), with the mid-point, 5, representing “moderate tension.” The mean values of the tension ratings ranged from 4.23 to 5.25, with the “special authorities” tension showing the highest mean rating (see Table 22). It read,

“Certain positions (e.g., city and county leaders, members of Unified Command, etc.) take on special authorities during a crisis. Because these authorities are rarely activated, the individuals occupying the positions may be unfamiliar with them. Although exercises typically emphasize practice, some parties may not have enough information about their roles to effectively practice them. Differences in status may prevent both higher and lower status individuals from speaking candidly about what they do and don't know.”

A test of bivariate correlations showed that all of the tensions were significantly positively correlated with one another, suggesting either that a focal exercise that experienced one tension more strongly was also likely to experience other tensions more strongly – or, alternatively, suggesting that individuals varied in their perceptions of the general severity of tensions in an exercise. The ratings for each tension showed small but consistently negative correlations with the exercise satisfaction outcome variable. Only three of these Pearson correlations with exercise satisfaction were statistically significant ($p < 0.05$): the plan/improvise tension (-0.169), the simultaneous versus gradual arrival tension (-0.160), and the twenty-four hour operational period versus eight-hour operational period tension (-0.201).

Conclusions. In conclusion, the first hypothesis was largely supported: anticipated impact, other agencies’ motivation to cooperate, and involvement were linearly and positively associated with collaborative interaction. Higher levels on each of these variables were associated with higher levels of collaborative interaction. Agency resource investment was not meaningfully associated with

collaborative interaction, which suggests that even agencies that invest few resources in the exercise may engage in a high degree of collaborative interaction.

The second hypothesis was partially supported. In the final model, only the relationship between involvement and exercise satisfaction was fully mediated by collaborative interaction. This suggests that being highly involved is not, in itself predictive of satisfaction with exercise, but being more involved and more collaborative predicts higher levels of satisfaction. For anticipated impact and other agencies' motivation to cooperate, these variables alone helped predict exercise satisfaction, but they predicted much higher levels of exercise satisfaction when mediated by collaborative interaction. Lastly, the final model suggested that anticipated impact helps to predict involvement, and collaborative interaction levels are predicted to be higher when both anticipated impact and involvement are higher.

The third hypothesis was not supported; a more confrontive conflict management style did not appear to moderate the relationship between collaborative interaction and exercise satisfaction. This issue merits further analysis. The fact that confrontive conflict style was, effectively, an ordinal variable seemed to limit the effectiveness of path analysis. Other tests may be more effective for investigating this hypothesis, and other ways of composing the confrontive conflict management style variable are certainly possible.

Lastly, of the eight tensions that I proposed might be common to disaster exercises, I found that three of them were significantly (and negatively) correlated with exercise satisfaction: the plan/improvise tension, the simultaneous versus gradual arrival tension, and the twenty-four hour operational period versus eight-hour operational period tension. These tensions in particular could be further investigated in future research. While this chapter addressed the results of Phase 2, the quantitative study, in isolation, the chapter that follows will draw conclusions and implications from the entire project.

Tables and Figures

Table 18

Linear Regression Models Addressing Hypothesis 1

Variables	Model 1			Model 2		
	B	Std. Error	Beta	B	Std. Error	Beta
Anticipated Impact	0.236	.067	.256**	0.229	.065	.242**
Others' Motivation	0.257	.054	.339***	0.266	.052	.347***
Involvement	.005	.002	.157*	.006	.002	.188**
Agency Contribution	.008	.042	.012			
R ²		0.353			0.360	
Adjusted R ²		0.338			0.350	
F-statistic		24.65***			36.04***	

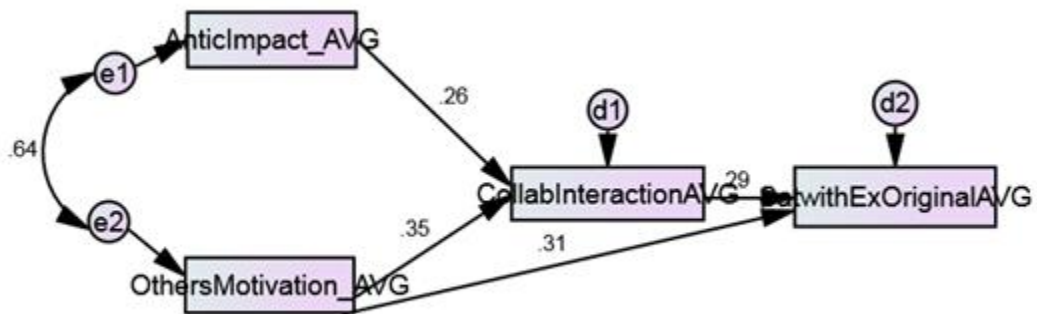


Figure 5. Preliminary Path Analysis Model for Hypothesis 2 (Build Data Only..

Table 19

Model Respecification for Hypothesis 2

Model	Data	χ^2	df	p	Change in χ^2
Full Mediation Model (Anticipated Impact, Other Agencies' Motivation to Cooperate, Involvement, Agency Resource Investment)	"Build" Half of Data Set	102.978	10	.000	n/a
Full Mediation Model (Anticipated Impact, Other Agencies' Motivation to Cooperate, Involvement)	"Build" Half of Data Set	86.424	6	.000	16.554
Full Mediation Model (Anticipated Impact, Other Agencies' Motivation to Cooperate)	"Build" Half of Data Set	75.146	3	.000	27.832
Full Mediation Model with Correlated Error Terms (Anticipated Impact, Other Agencies' Motivation to Cooperate, $e1 \leftarrow \rightarrow e2$)	"Build" Half of Data Set	11.532	2	.003	91.446
Preliminary Model: Partial Mediation (Anticipated Impact, Other Agencies' Motivation to Cooperate)	"Build" Half of Data Set	1.797	1	.180	101.181
Preliminary Model: Partial Mediation (see above)	"Test" Half of Data Set	6.928	1	.008	96.05
Preliminary Model: Partial Mediation (see above)	Full Data Set	6.372	1	.012	96.606
Final Model: Partial Mediation (Anticipated Impact, Other Agencies' Motivation to Cooperate, Involvement, $e1 \leftarrow \rightarrow e2$)	Full Data Set	1.884	2	.390	101.094

Note. Change in χ^2 is change from interim model.

Table 20

Preliminary Partial Mediation Model for Anticipated Impact, Other Agencies' Motivation to Cooperate, Collaborative Interaction, and Exercise Satisfaction

Variable	Standardized Estimated Regression Weight (Build Half of Data Set)
Anticipated Impact $\rightarrow$ Collaborative Interaction	0.26*
Others' Motivation $\rightarrow$ Collaborative Interaction	0.35***
Collaborative Interaction $\rightarrow$ Exercise Satisfaction	0.29**
Others' Motivation $\rightarrow$ Exercise Satisfaction	0.31***
$e1 \leftarrow \rightarrow e2$	0.64***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 21

Final Partial Mediation Model for Anticipated Impact, Other Agencies' Motivation to Cooperate, Involvement, Collaborative Interaction, and Exercise Satisfaction (Hypothesis 2)

Variable	Standardized Estimated Regression Weight (Build Half of Data Set)
Anticipated Impact → Involvement	0.23***
Involvement → Collaborative Interaction	0.17**
Anticipated Impact → Collaborative Interaction	0.27***
Others' Motivation → Collaborative Interaction	0.36***
Collaborative Interaction → Exercise Satisfaction	0.20**
Anticipated Impact → Exercise Satisfaction	0.19**
Others' Motivation → Exercise Satisfaction	0.25**
e1 ↔ e2	0.55***

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

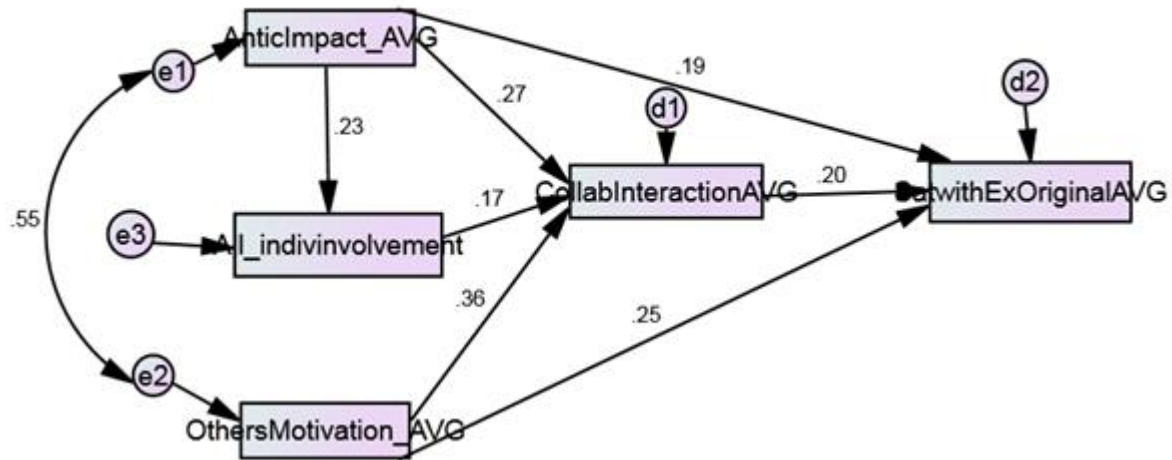


Figure 6. Final Path Analysis Model for Hypothesis 2.

Table 22

Mean Ratings for the Eight Common Exercise Tensions

	Mean	Std. Deviation	N
Plan_Improvise	4.23	1.800	200
Notional_SOP	4.58	2.104	197
Ignore_Address	4.41	1.997	196
Intervene_Debrief	4.26	2.145	207
Simultaneous_GradualArrival	4.33	2.412	184
24HrOp_8Hr	4.42	2.429	175
PaceofInformation	4.61	2.224	224
SpecialAuthorities	5.25	2.372	215

Chapter 8: Implications and Future Directions

Summary of the Study

The dissertation project originated from a desire to better understand how agents engaging in interorganizational coordination operate in the absence of a hierarchical authority that could mandate coordinating structures. In such situations, collaborative approaches are often invoked as normative, but our limited understanding of collaborative interaction as a phenomenon of organizational communication makes it difficult to distinguish between more and less effective ways to apply collaborative approaches in such situations. In particular, collaboration research has often overlooked the important role of conflict management in collaborative work arrangements. Consequently, I built upon Poole's (2013) idea that good collaborations include an element of confrontation; I defined this construct as a sub-set or style of collaborative interaction in which agents (a) initiate contact with collaborators to seek or share feedback, preferences, perspectives, opinions, task information or status information; and, in situations of conflict, (b) asserting their preferences or opinions rather than withholding them; (c) ask the other party/ies to assert their preferences or opinions; and (d) first encourage differentiation, or the expression of differences, and only after that encourage integration, or the pursuit of common interests.

In Phase 1 of the study, I used observational and interview methods to collect qualitative data. The data comprised three cases – each of a different disaster exercise – for which I observed planning meetings and the exercise itself. In each case, I informally interviewed a convenience sample of participants, and for the most complex case, I conducted more formal semi-structured individual interviews with members of the exercise planning committee. (The interview guide appears in Appendix A.) The research questions that guided this phase of the study were:

RQ1: *What kinds of conflicts arise in a multi-agency disaster response exercise?*

RQ2: *What communication practices do exercise planners or participants use to navigate these conflicts?*

RQ3: *How and when do confrontation behaviors emerge?*

With respect to RQ1, I found that the types of conflicts that arose conform to scholarly expectation in that they aligned with categories in extant literature, specifically: power differences, role uncertainty, procedural uncertainty, finite resources, mixed motives, differences in member effort, and task interdependency. At the same time, however, the anecdotes of expressed struggle, response, and counter-response provided insight into the world of disaster response training exercises. I distilled the challenges that seemed to be unique to the exercise context into eight common tensions in disaster response exercises, and I subsequently included these tensions in the Phase 2 questionnaire.

Regarding RQ2, I learned that indirect or avoidant responses to conflict were surprisingly common; these responses seemed to reflect a perception that, because agencies are to regard one another as equals, it would be inappropriate for one agency to make demands of or correct another. The exercises' lead facilitators often became default liaisons between agencies; the larger the group, the less likely the facilitator was to be able to create conditions for productive dialogue and cooperative decision-making.

The third research question, RQ3, asked how and when confrontation behaviors emerged. I found that some exercise participants took an 'interventionist' approach and engaged in confrontation as soon a conflict arose, while others waited for a sanctioned time to raise their concern, primarily in debrief discussions such as a "hot wash" with a sub-set of exercise participants or the formal after-action review meeting. Those who took the latter approach seemed less likely to be heard by those who could do something meaningful about the conflict, while those who took the former approach had mixed results. Sometimes, the other party was receptive, and together they reached a preliminary solution. Sometimes, however, the other party was dismissive, and no further action seemed possible. All of these data point to larger questions about the true purpose of training exercises: Learning or evaluation of prior learning? Building rapport through informal interactions or working separately to maximize each agency's ability to reach its instrumental goals? A version of these questions is likely to apply to many voluntary associations among organizations that prompt a need for coordination – and especially to those that initiate as attempts to collaborate.

In keeping with the mixed-method design of the study, the qualitative results of Phase 1 strongly informed the development of items and scales for the survey instrument used in Phase 2. (The full instrument can be found in Appendix C.) The hypotheses and research question that guided Phase 2 of the study were as follows:

H1: Motivation to achieve coordination will be positively associated with collaborative interaction.

H2: Collaborative interaction will mediate the relationship between motivation to achieve coordination and exercise satisfaction.

H3: Collaborative interaction will be positively associated with exercise satisfaction.

H4: Confrontive conflict management style will moderate the relationship between collaborative interaction and exercise satisfaction.

RQ4: What is the relationship between the proposed eight common exercise tensions and participants' overall satisfaction with the exercise?

I developed the instrument to be distributed as an online questionnaire, and I recruited participants by email from a randomly-selected sample of response professionals who had completed any of six incident management courses at a local fire service institute in the last seven years. The only inclusion criterion for participants was that they had to have participated in a multi-agency disaster response exercise in the past three years. The questionnaire asked them to think of one such exercise and report on their perceptions and behaviors related to this focal exercise. Two-hundred forty-five individuals completed the questionnaire. The largest proportions of participants were firefighters, police, public health officials, or emergency management professionals, but the remaining participants were affiliated with a wide variety of other types of response agencies.

My analysis evaluated a series of original scales and addressed four hypotheses and one research question related to the relationships between key variables. The first hypothesis was largely supported: anticipated impact, other agencies' motivation to cooperate, and involvement were linearly and positively associated with collaborative interaction. Higher levels on each of these variables were associated with

higher levels of collaborative interaction. Agency resource investment was not meaningfully associated with collaborative interaction, which suggests that even agencies that invest few resources in the exercise may engage in a high degree of collaborative interaction.

The second hypothesis was partially supported. In the final model, only the relationship between involvement and exercise satisfaction was fully mediated by collaborative interaction. This suggests that being highly involved is not, in itself predictive of satisfaction with exercise, but being more involved and more collaborative predicts higher levels of satisfaction. For anticipated impact and other agencies' motivation to cooperate, these variables alone helped predict exercise satisfaction, but they predicted much higher levels of exercise satisfaction when mediated by collaborative interaction. Lastly, the final model suggested that anticipated impact helps to predict involvement, and collaborative interaction levels are predicted to be higher when both anticipated impact and involvement are higher.

The third hypothesis was not supported; a more confrontive conflict management style did not appear to moderate the relationship between collaborative interaction and exercise satisfaction. This issue merits further analysis. The fact that confrontive conflict style was, effectively, an ordinal variable seemed to limit the effectiveness of path analysis. Other tests may be more effective for investigating this hypothesis, and other ways of composing the confrontive conflict management style variable are certainly possible.

With respect to the fourth research question, of the eight tensions that I proposed might be common to disaster exercises, I found that three of them were significantly (and negatively) correlated with exercise satisfaction: the plan/improvise tension, the simultaneous versus gradual arrival tension, and the twenty-four hour operational period versus eight-hour operational period tension. These tensions in particular could be further investigated in future research. While this chapter addressed the results of Phase 2, the quantitative study, in isolation, the chapter that follows will draw conclusions and implications from the entire project.

Limitations

A Chinese proverb says that the best time to plant a tree is twenty years ago; the second best time is now. There are several limitations of this study that merit mention, and I may be able to remedy some in future work.

Learning-oriented participants. I gained entry to the field and got access to my survey sample through the local fire service institute. Because many of my key informants and all of my survey participants had affiliations with this fire service institute, my samples may have been biased in their enthusiasm for training and learning in general. It is possible that the people who declined to participate in exercises, declined my requests for interviews, or declined to participate in the survey might be less motivated about training, preparedness, or professional development.

Independent thematic analysis. I got informal confirmation of my themes from a research colleague who had attended the planning meetings for the CSE exercise, but I did ask anyone to formally review or independently analyze my qualitative data or analysis. The matching of themes to conflict categories is a coding exercise for which I could, in the future, recruit additional coders and assess inter-rater reliability. Other coding schemes related to confrontation episodes or conflict responses would also be possible.

Post-exercise “halo effect.” My interviews and survey responses were entirely comprised of retrospective data. Perhaps, after an exercise, participants are inclined to focus on what was positive and disinclined to think about what frustrated them or what didn’t work.

Missing data and survey sample size. In quantitative research, missing data is an unpleasant reality. Even among the responses that I counted as complete, participants often skipped one or two items somewhere in the questionnaire. These skips were not consistent enough for me to decide to exclude a particular item, although more thorough survey testing would help me better identify confusing or irrelevant items. I have not yet explored sophisticated interventions for missing data, such as imputation of missing data, but these might be worthy of consideration. In the end, the sample size was barely

adequate for splitting the data to separate model building from model testing. My more complex models may have struggled due to inadequate sample size for the number of parameters being estimated.

Implications

Interorganizational coordination is difficult. The master concept under investigation in this study was interorganizational coordination, and the simplest thing one can say about these data is that interorganizational coordination is difficult to achieve. In the context of disaster response, responders train to use non-agency-specific standard operating procedures, such as HSEEP exercise planning structures or ICS for incident management, but these structures are unfamiliar enough to most responders that they may not truly provide a common language. This hearkens back to Faraj & Xiao's (2006) conclusion that, when nothing goes wrong, procedures for routinized coordination can work well, but when circumstances are less than perfect, routines break down and conflict ensues. More broadly, the communication and coordination skills that responders need in unusual, high-risk situations seem to be skills that they rarely practice in their day-to-day activities.

The study also confirmed that the kinds of lateral relationships often described in interorganizational collaboration literature are exactly those that strain interorganizational coordination due to the lack of overarching authority. There is no one to demarcate organizations' 'territory' in order to provide role certainty, no one with enough influence to mandate procedures, and no one who sees it as his or her agency's responsibility to make everyone work together for the common good. Who is responsible for collective goal attainment? Everyone and no one at the same time. These challenges echo Taylor's (2005) depiction of post-bureaucratic (i.e., postmodern) organizing. Organizations seem to feel increasing pressure to operate in a more agile, resilient way – to be high-reliability organizations (Weick & Sutcliffe, 2007) – but to partner with other organizations may be more challenging than they first imagine.

Collaborative approaches certainly seem to have the potential to foster cooperative decision-making and attendant coordination of activity among laterally-related organizational partners. Variations in the degree to which organizations and their representatives invest in collaborative arrangements raise,

once again, questions related to group membership (i.e., the bona fide groups concept of Putnam & Stohl, 1990) and group inter-subjectivity (Poole, 1998). My own work in this study, in retrospect, focused heavily on instrumental behaviors and goals, although the qualitative data certainly suggested that the development of trust and collective consciousness as exercise outcomes might be at least as important as satisfaction with the training exercise as a technical learning opportunity. Contestants on reality television shows seem to have an *in situ* value concept called “being here for the right reasons”; how could disaster response professionals and other interorganizational collaborators demonstrate to one another that they are ‘there for the right reasons’?

One success of the present study was the development of a collaborative interaction scale. This begins to address Lewis’s (2006) call for communication scholars to identify what is basic to the phenomenon of collaborative interaction. Like any approach that emphasis behaviors, what it misses is motivations, perceptions, and nuances in the socially-embedded interpretations of those particular behaviors. It seems very possible that one party’s efforts to give and seek feedback, provide status updates, and adhere to a shared timeline might be perceived as incompetent, controlling, or interfering by another party. Under what conditions would these collaborative behaviors be perceived as pro-social or appropriate, rather than anti-social or inappropriate? Another related topic that merits further exploration is that of balancing among mixed motives in interorganizational coordination and collaboration; in the very instrumental terminology of the multi-team system literature, Marks and co-authors call this goal prioritization (2004). My study suggested that agents may be likely to fall back on their home organizations’ goals when they encounter impediments to the interorganizational collective goals. What, if anything, could reverse this reversion and refocus members on the collective goals?

Another success of the present study was the finding that collaborative interaction and conflict management, as concepts, appear to be intimately related but conceptually distinct. I found some evidence to suggest that the study of conflict management styles need not end with the five styles of the Kilman Thomas instrument nor with Putnam and Wilson’s finding that people may not even be able to distinguish between collaboration and compromise (1984). I need to do quite a bit more analysis of the

quantitative data from this study to speak more confidently about this topic. At present, it appears that the collaboration-competition cluster style is linearly associated with greater exercise satisfaction and not strongly correlated with collaborative interaction. I need to do more testing of the relationship between the two – for example, mediation and moderation within regression models – and I would still like to run some analyses using the broader spectrum of conflict ‘styles’ based on the dispersion of conflict style dimension scores. Since counting each participant’s two highest styles created sixteen groups, I would like to try some hierarchical linear modeling with this conflict style variable as a grouping variable.

Even though I attempted to operationalize confrontation, I recognize that this operationalization needs refinement and further testing. One might argue that the questionnaire never really measured it at all. As I continue to work with this concept, it will be important to demonstrate its discriminant validity, particularly with respect to established conflict management styles – unless, of course, I begin to find that it is not truly distinct. The term confrontation itself may need some revision, as it connotes antagonism.

Regarding disaster preparation, the reality is that The Big One – be it a devastating tornado, a massive earthquake, or an act of biological terrorism – will probably never happen here. I become more and more convinced, however, that hundreds of Smallish Ones will, and for the victims, they will feel big enough indeed. Some agencies will need to work together, and these exercises seem to help more than hurt, even if it seems like the “lessons learned” are the same every time (Donahue & Tuohy, 2006). Also, given the overall unlikelihood of a major local catastrophe, I’ve begun to operate from the assumption that the exercise isn’t practice for the collaboration; the exercise *is* the collaboration. The only known quantity is that everyone will get together and practice some more, next year, or the next year. I’ve learned that “exercise world” is a world onto itself, and whether the exercises are ‘lessons’ or ‘tests’ seems to be a matter of some controversy. Some participants seem to get very frustrated by the artificiality of exercise conditions, scenarios, or procedures. I can understand this. They want the highest possible degree of verisimilitude between the ‘dress rehearsal’ and the performance. At the same time, I’m also starting to see it another way: The pace of the exercise – the lack of adrenaline – makes it possible for responders to engage in the luxury of informal conversation. I observed many brief but

relaxed coffee-clutch conversations between people who didn't work together on an everyday basis – or perhaps were meeting for the first time – and, to me, these small conversations seem to build the response community.

One Last Reflection

I have to admit, I expected emergency response culture to be authoritarian, militaristic, and frankly rather unfriendly. Some of those elements have their place, but I also found most responders to be good-humored, humble, and service-oriented. The work of practicing to respond to disaster is important work, and I followed my participants' lead in taking their objectives and efforts very seriously. At the same time, I think that some aspects of the exercise experience related to identity and culture could be powerful tools in achieving effective interorganizational coordination through collaborative interaction. Confrontation is complementary, not contradictory, to this perspective. Group scholarship has long known that more cohesive groups are more receptive to acknowledging and addressing conflict than are less cohesive groups.

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Appendix A: Interview Protocol

Introduction and Consent:

Thank you for taking the time to talk with me today. As you may know, I am a Ph.D. student in the Department of Communication at the University of Illinois at Urbana-Champaign, and I am conducting this research for my dissertation project.

The goal of the project is to better understand how professionals from different agencies collaborate during the planning and performance of disaster response exercises. I believe that these findings will not only be useful to professionals in fields related to emergency management but also to people in many other sectors. The idea of collaboration is very popular, but in practice, it can be challenging to communicate effectively and to reach agreements that benefit everyone.

I would like to ask you some questions about your impressions of [exercise], from the planning meetings to the after-action review. I am interested in your experiences and your opinions; there are no wrong answers. Everything you tell me is confidential; for all my notes, analysis, and reporting, I will replace your name, the name of your agency, and the names of any geographical locations with pseudonyms. I plan to interview at least thirty people, from three different exercises, and write papers based on the aggregate of all of their comments.

I asked for 30 minutes of your time, but you are of course welcome to end the interview at any time. Also, if I ask a question that you would prefer not to answer, just let me know, and I will move on to another topic.

With your permission, I would like to audio-record this interview so that I can focus on listening rather than taking notes. I am the only person who will have access to the audio-recording; I will use it to take notes after we talk, and I'll refer to the notes – which include no real names – from that point forward. Are you comfortable with having me audio-record?

To comply with university research policies, I will need your signature on two consent documents: one saying that you are willing to participate in the research interview and one saying that it is okay for me to record the interview. I have an extra copy of each form for you to keep. [sign consent forms]

Do you have any questions for me before we get started? [if yes, address.] Transition: Let's get started.

[Researcher Notes -- Key Concepts:

- perceptions of incompatible goals/interests/values;
- perceptions of interference;
- consequences of interdependence;
- changes to degree or type of interdependence;
- attributions of intention;
- dis/incentives to cooperate or compete (incl. rules, requirements, public or market pressure, stakeholder influence, etc.)

Probe about specific interactions, communication behaviors or strategies.]

Outline of Topic Areas and Key Questions (Chronological Approach):

[Transitional comment: First, I'd like to ask some general questions about you and your agency's participation in disaster response exercises.]

1. Orienting information:

- a. [Confirm which agency the participant represented in the exercise]
- b. What was your role during the exercise itself?
- c. What was your role during the planning of the exercise? [Get a sense of whether/to what extent participant attended planning meetings.]
- d. How typical was this exercise compared to others in which you've participated? [Get a sense of how many, what kind of exercises agency members participate in in a typical year.]
- e. For exercises like this, where do your agency's exercise objectives come from?
- f. Did your agency have any concerns about participating in this exercise?
- g. From your agency's perspective, what might make an exercise like this one NOT a good use of participants' time?
- h. About how many people from your agency participated in the exercise? In what capacity?
- i. Did anyone else from your agency help plan the exercise? In what capacity?
- j. Did you personally recruit controllers and evaluators? On what basis were these individuals recruited?

[Transitional comment: Now, I'd like to walk back through the process of planning, participating in, and debriefing the exercise, starting with the time when you first became involved with the exercise.]

2. Initial involvement / planning phase:

- a. How did you personally become involved in the planning of the exercise?
- b. How clear were your agency's goals for the exercise from the outset?
- c. Did you have any individual goals – anything that you personally wanted to get out of the exercise? If yes, did you need anyone else's help to meet this/these goal/s?
- d. Think about the first meeting that you attended. As you looked around the room, what proportion of the agencies represented were ones that you work with frequently? Occasionally? Never before?
- e. [Follow up on specific agencies given for each category: How might you expect to work with [other agency] during the exercise? Is it the same for a real event? For the 'frequent' group, what kinds of challenges might you expect to arise? For the 'never' group, what kinds of challenges might you expect to arise?]
- f. During the meeting, did anything that you observed from representatives of other agencies surprise you?

3. Sub-committee meeting/s:

- a. Did you go to any sub-committee meetings?
- b. Who was included / represented in the meeting/s? How familiar were you with the other people around the table? In what context would you normally interact with each of them (outside of planning an exercise)?
- c. From your perspective, was the meeting useful? Why or why not?
- d. Do you remember whether the discussion raised any considerations or information that was new to you?

- e. Do you remember making any adjustments in the plans for your agency as a result of the discussion?
 - f. Do you remember any adjustments that others made?
 - g. Knowing what you know now about how the exercise went, was there anything that the group SHOULD have been talking about or resolving?
4. Final stages of planning phase / MSEL review:
- a. How did your agency develop injects for the MSEL [“master scenario events list”]? When, in the planning process, did this happen?
 - b. Did you make any revisions to these injects before the exercise? If so, why?
 - c. What was your approach to reviewing the full MSEL? Did you look it over? If yes, were you looking for anything specific? Did you provide any feedback about it? Ask for any changes?
 - d. Were you involved with getting participants, controllers, or evaluators from your agency to commit to attending the exercise? If so, how easy was it to persuade them? [Note: This may already have been covered in the orientation section.]
 - e. What questions or concerns did participants from your agency have related to the exercise?
 - f. What questions or concerns did controllers and evaluators from your agency have related to the exercise?
 - g. Before the exercise, what were your predictions about the challenges that participants from your agency would face on the day of exercise? In other words, what did you think might be difficult? Might go wrong?
 - h. Did you have any unresolved questions about the role or involvement of other agencies or representatives?
 - i. In the weeks leading up to the exercise, did anyone from the planning committee ask you or your agency to go ‘above and beyond’ what you had expected to do? If yes, how so?
5. Exercise itself:
- a. From your perspective, how did the exercise go?
 - b. What surprised _____? (you, participants, controllers, evaluators, each in turn if different)
 - c. What frustrated _____? (you, participants, controllers, evaluators, each in turn if different)
 - d. Do you recall any incidents of being ‘stuck’ or waiting on someone or something?
 - e. What did others seem to expect from your agency? Were these expectations reasonable? Where do you think these expectations came from? (for example, is there any precedent for that?)
 - f. Do you recall any misunderstandings that occurred?
 - g. Do you recall any challenges related to missing information or a lack of input from some party?
 - h. If this had been a real incident, rather than an exercise, do you think the response would have been any different? How so?
 - i. Were you a part of a “hot wash” conversation at the exercise itself? If yes, were the things we’ve talked about discussed there? [If yes, probe for specific opinions/perspectives.]
6. After-action review and follow up:
- a. Did you participate in or contribute to the after-action review? How so?
 - b. From your perspective, what were one or two key take-aways from the exercise for your agency?

- c. Did you learn anything about other agencies' procedures or approaches?
- d. Did you learn anything about how other agencies perceive of your agency, rightly or wrongly?
- e. Was your leadership satisfied with the exercise?
- f. If you had it to do over again, is there anything that you would change in order to improve the value of the exercise for members of your agency? For you personally?
- g. Do you have any reservations about getting involved in another exercise of this scope in the future? Why/not?
- h. Has anything changed about the relationships between planning committee members as a result of this exercise?
- i. If you were going to send a brand new employee to serve on the planning committee of the next exercise like this, what advice would you give that person about how to work effectively with a group like this?

[Transitional comment: Ask participant if there is anything else that s/he thinks that I should know about interagency collaboration in the emergency management community. Ask participant if s/he has any questions for me. Thank participant for time, offer to send summary of findings within a year.]

Appendix B: Complete List of Survey Variables

- Independent variables:
 - Anticipated impact of exercise for agency (“Anticipated Impact”)
 - Agency representative’s level of involvement in exercise planning or participation (“Involvement”)
 - Agency’s relative resource investment compared to other agencies in exercise (“Involvement”)
 - Perceived mutual interest of participating agencies in understanding and drawing upon one another’s expertise (“Expertise Recognition”)
 - Degree to which agencies sought information from one another or shared information with one another during exercise process (“Informational Support”)
 - Degree to which agencies conformed to timelines and deadlines meaningful to the collective exercise experience (“Timeliness”)
 - Latent variable: “Confrontation”
 - Conflict management style employed by agency representative during exercise process (“Conflict Management Style Employed”)
 - Presence/severity of eight common tensions in disaster response exercises
 - Open-ended descriptions of tension/s experienced during exercise
 - Breadth/depth/number/types of agencies involved in exercise
 - Type of exercise (full-scale, functional, table-top, other)
 - Whether or not the individual helped to plan the exercise
- Demographic information:
 - Years of field experience
 - Age
 - Amount of past exercise experience
 - Amount of additional training
 - Home agency
 - Military experience
 - FEMA credential status
 - Sex
 - If/how the individual has applied Incident Command System knowledge acquired in the IFSI course that they completed 1 to 8 years ago [as courtesy feedback for fire service institute]
- Dependent variables:
 - Satisfaction with exercise process (“Satisfaction with Process”)
 - Satisfaction with exercise outcome (“Satisfaction with Result”)

Appendix C: Survey Instrument

Multi-Agency Collaboration in Disaster Simulation Exercises

The purpose of this survey is to better understand the communication practices that help or hinder disaster response exercise participants as they practice how they will work together in response to a real incident. **The Incident Command System is one example of a process designed to help response professionals work as a "plug-and-play" team, but what other communication-related practices would help?**

Even if you don't think of yourself as a disaster responder, I am interested in your perspective. Please consider participating if:

- (a) part of your work includes disaster preparedness or planning, and
- (b) you have participated in some kind of drill or training exercise involving multiple agencies in the past three years.

This questionnaire will take 8 to 10 minutes to complete. You will not be asked to give your name or the name of the municipality or organization that you serve. Would you like to continue?

☐ Yes

☐ No

Your Rights as a Research Participant

In cooperation with University of Illinois research policies, I am asking you to read the following information about your rights as a research participant.

Once you have reviewed this information, please click “Next” (at the bottom of this page) to indicate your agreement to participate and to begin the survey.

Your response is confidential:

You will not be asked to give your name or contact information, and your IP address will not be registered. Some questions in the survey ask you to describe your experiences participating in drills or exercises. If you include any potentially identifying information in your responses – such as the names of individuals, agencies, or jurisdictions – the research team will remove that information and replace it with pseudonyms before beginning the data analysis. No potentially identifying information will be shared when the results of the study are reported -- **not even the name of the state in which the research was conducted.** The results of the study will be shared through academic papers, “white papers” for practitioners, academic journal articles, and presentations.

Your response is voluntary:

Your participation in this study is completely voluntary. You may skip any question or end the survey at any point. Your choice to participate or not participate will in no way affect your relationship with the Illinois Fire Service Institute, the University of Illinois, or the Illinois emergency response community.

For questions about participation:

If you have questions about the nature of the project or your rights as a participant, there are several people you can contact: myself, [Elizabeth Carlson](#) (phone: 217-778-9795); my advisor, [Dr. John Lammers](#) (phone: 217-333-8912); and the [University of Illinois Institutional Review Board](#) (phone: 217-333-2670; collect calls will be accepted if you identify yourself as a research participant).

If you wish to save a copy of this informed consent statement or the contact information above for your records, please copy the text on this screen and paste it in a word processing document.

Instructions: To proceed to the first question, please click “Next,” below. If you do not wish to participate, please close this browser tab or window to exit.

Guide to Terminology

Here, the term [disaster](#) refers to any urgent threat to human safety, public or private property, or information security.

Disaster response training exercises vary in format and scope. In this questionnaire, "exercise" refers to any of the following: a simulation, a practice session, a [drill](#), a [tabletop exercise](#), a [functional exercise](#), or a [full-scale exercise](#).

For the purposes of this questionnaire, a **multi-agency exercise** is one that includes people from your home organization as well as people from at least two other organizations, and the people from the other organizations represent different areas of responsibility, authority, and expertise than the members of your home organization.

Sometimes professionals make a distinction between *agency* and *jurisdiction*, but for this project, *agency* will encompass both concepts (i.e., a fire department in a particular jurisdiction would be considered one agency).

If your primary affiliation is military, and you are thinking in terms of military or military-civilian exercises, please regard the term *agency* as a way of distinguishing among different functional areas within your system.

Exercise Participation

Have you participated in at least one multi-agency disaster response exercise in the past three years?

☐ Yes

☐ No

Instructions

For the following questions, think of **one** multi-agency exercise in which you participated. It might be the most recent one or the one that you remember most clearly.

Please provide a nickname for this exercise to use as a reference throughout the questionnaire. You may invent a name (e.g., "Exercise A") or use a real name. Your entry will be imported into questions and other text throughout the rest of the survey.

Note: This is for the clarity of questions only; the name you use will never be reported with survey results.

About [Q3]

Which type of exercise was [Q3]?
☐ Tabletop exercise

☐ Functional exercise

☐ Full-scale exercise

 Other (please specify)
 How many agencies participated in the exercise? (If you aren't sure, please provide an estimate.)**What percentage of participants were active U.S. military personnel?**

Note: This number may include multiple organizations representing the same type of agency but different jurisdictions. For example, if there were three different fire departments, they count as three agencies.

Please use the table below to select the types of agencies (including your own) that participated in [Q3]. Please select all that apply and leave the others blank.

☐ 9-1-1 or Other Emergency Dispatch

☐ Ambulance

☐ City Manager's Office

☐ County Commissioners' Office

☐ Coroner

☐ City or County Emergency Management

☐ EOD or Bomb Squad

☐ Fire

☐ Hazardous Materials (Hazmat)

☐ Hospital

☐ Local Media

☐ Mayor's Office

☐ National Guard - CERFP

☐ National Guard - CST

☐ National Guard - other

☐ Non-Profit Organization/s (e.g., Red Cross)

☐ Police

☐ Private Organization/s (e.g., a local manufacturing plant, energy company, etc.)

☐ Public Health

☐ Public Information Office

☐ Public Works

☐ School Officials (K-12)

☐ School Officials (College or University)

☐ Special Weapons and Tactics (SWAT)

☐ State Emergency Management Agency

☐ Statewide Fire Mutual Aid (e.g., "MABAS")

☐ Statewide Law Enforcement Mutual Aid (e.g., "ILEAS")

☐ Statewide Medical Mutual Aid (e.g., "IMERT")

☐ Technical Rescue (TRT)

☐ Weapons of Mass Destruction (WMD)

 Other (please specify as many as needed)

Which of the agency descriptions from the list above best describes the agency that YOU represented in [Q3]? Please indicate your choice using the drop-down menu below.

Other (please specify)

Did you help to plan [Q3]? (e.g., You represented your agency on the exercise planning committee.)

☐ Yes

☐ No

Other (please specify)

Involvement - Exercise Participants, Controllers and Evaluators

The list below includes tasks that you may or may not have performed as part of your involvement in the exercise. Please check the box next to each task that you performed for [Q3]. Check all that apply, and leave the rest blank.

- ☐ Attended an orientation meeting before the start of exercise
- ☐ Asked questions about exercise procedures before the exercise began
- ☐ Made contact with a representative of another agency ahead of the exercise to clarify how our groups would be working together
- ☐ Committed to perform a special role (e.g., safety officer) in advance of the exercise
- ☐ Transported equipment to the exercise site
- ☐ Recruited colleagues to participate in the exercise
- ☐ Recruited non-participant volunteers to help with the exercise (e.g., to role play as victims)
- ☐ Agreed to perform a special role (e.g., safety officer) after arriving at the exercise
- ☐ Stayed for the full length of the exercise
- ☐ Introduced myself to members of my agency whom I had never worked with before
- ☐ Introduced myself to members of other agencies whom I had not met before
- ☐ Participated in a "hot wash" discussion immediately after the exercise
- ☐ After the exercise, provided written comments for the After Action Review report
- ☐ Asked questions about exercise procedures while the exercise was in progress
- ☐ Circulated among work sites or meeting areas in order to observe what others were doing

Other (please specify)

Think about your agency's investment in the exercise. The resources that your agency provided may have included: staff members' time, the number of personnel supporting and/or participating in the exercise, equipment, meeting space, overtime and backfill, transportation, fuel, water, and other consumables.

How did your agency's investment of resources compare to that of other agencies involved in the exercise?

My agency contributed:

Involvement - Exercise Planners

The list below includes tasks that you may or may not have performed as part of your involvement in the exercise. Please check the box next to each task that you performed for [Q3]. Check all that apply, and leave the rest blank.

- ☐ Decided that my agency would participate in [Q3]
- ☐ Attended 100% of the planning meetings
- ☐ Attended more than 50% of the planning meetings
- ☐ Attended at least one planning meeting

- ☐ Asked questions at planning meetings
- ☐ Raised concerns at planning meetings
- ☐ Committed resources (equipment, personnel, space, or consumables) on behalf of my agency
- ☐ Shared responsibility for planning my agency's involvement in the exercise with one or more colleagues

- ☐ Created exercise prompts or "injects" for my agency's portion of the exercise
- ☐ Reviewed the exercise plan or "MSEL" carefully in advance of the exercise
- ☐ Provided feedback on a draft version of the exercise plan ("MSEL") in advance of the exercise
- ☐ After the exercise, provided written comments for the After Action Review report

- ☐ Recruited controllers and/or evaluators from my agency
- ☐ Recruited non-participant volunteers to help with the exercise (e.g., to role play as victims)
- ☐ Provided a participant roster of my agency's participants
- ☐ Provided information to members of my agency about what to expect on the day of the exercise
- ☐ Provided updates on the developing exercise plan to my supervisor

- ☐ Contacted a representative of another agency ahead of the exercise to discuss how our agencies should work together during the exercise
- ☐ Introduced myself to members of other agencies whom I had not met before

Other (please specify)

Think about your agency's investment in the exercise. The resources that your agency provided may have included: staff members' time, the number of personnel supporting and/or participating in the exercise, equipment, meeting space, overtime and backfill, transportation, fuel, water, and other consumables.

How did your agency's investment of resources compare to that of other agencies involved in the exercise?

My agency contributed:

The following is a list of 8 common tensions in disaster simulation exercise design. Did you observe any of these tensions in [Q3]?

Please use the drop-down menu to the right of each item to rate how severe this tension was in [Q3]. If you observed the tension, please select a rating from 0 to 10, with 0 being "no tension at all," 5 being "moderate tension," and 10 being "very strong tension." If you did not observe the tension, please select "Don't know / Not applicable."

Severity of Tension

1. In some aspects of the exercise, participants should follow the script or exercise plan without deviation. In other aspects, participants are expected to choose their own actions and improvise as needed.

2. Exercise planners expect participants to dismiss some aspects of the exercise as notional -- in other words, "We all know that we wouldn't really do it that way, but we're doing it that way for today's exercise." At the same time, exercise planners expect participants to apply their knowledge of standard operating procedures to demonstrate their competency during the exercise.

3. There are some exercise artificialities that planners intend for participants to ignore (e.g., "we just don't have that information") and others which planners intend for participants to improvise to address (e.g., "pretend that we have that information -- just make something up to keep the exercise moving").

4. As a training philosophy, some people think it is better to intervene immediately when you see participants making a mistake. Others prefer to let participants play out the whole exercise and then learn by analyzing the failure and its consequences at the end of the exercise.

5. In a real incident, personnel would arrive at the scene or the Emergency Operations Center incrementally -- not all at once -- and would commandeer as much space as needed to manage the incident. In an exercise, participants all arrive at a pre-determined start time, and space for parking, equipment, and meetings may be limited.

6. A real incident would have a 24-hour operational period. In an exercise, it is more cost-effective to condense the exercise scenario into a 4- or 8-hour work period (i.e., part or all of a normal work day).

7. In a real incident, responders and government officials cannot control the pace at which new information about the incident becomes available. In an exercise, exercise planners strive to manage the pace of information in order to keep participants occupied throughout the training period. This sometimes makes it difficult to practice how information should flow in a real incident.

8. Certain positions (e.g., city and county leaders, members of Unified Command, etc.) take on special authorities during a crisis. Because these authorities are rarely activated, the individuals occupying the positions may be unfamiliar with them. Although exercises typically emphasize practice, some parties may not have enough information about their roles to effectively practice them. Differences in status may prevent both higher and lower status individuals from speaking candidly about what they do and don't know.

Would you like to share a specific example of how your agency experienced one of these tensions in [Q3]? If yes, please use the comment box below.

Responding to Tensions

For the following items, think about how you, as a representative of your agency, responded to the tensions that you observed in [Q3].

Each pair of statements, labeled "A" and "B", describes behavioral responses. For each pair, please select the one statement that best describes how you behaved in conjunction with the exercise. If neither statement seems accurate, choose the one that seems *closer* to how you responded.

"When tensions arose..."

☐ A. There were times when I let others take responsibility for solving the problem.

☐ B. Rather than negotiating on the things on which we disagreed, I tried to stress those things upon which we all agreed.

☐ A. I consistently sought other parties' help in working out a solution.

☐ B. I tried to do whatever I could to avoid useless controversy.

☐ A. I tried to avoid creating unpleasantness for myself.

☐ B. I tried to persuade others to accept my position.

☐ A. I tried to postpone the issue until I had some time to think it over.

☐ B. I gave up some points in exchange for others.

☐ A. I was firm in pursuing my goals.

☐ B. I tried to find a compromise solution.

☐ A. I proposed a middle ground.

☐ B. I pressed to get my points made.

☐ A. I told the other parties my ideas, and I asked for their ideas.

☐ B. I tried to explain the logic and benefits of my position.

Responding to Tensions -- Continued

"When tensions arose..."

☐ A. If it seemed to smooth things over, I didn't try to persuade someone to change his or her views.

☐ A. I attempted to get all concerns and issues immediately out in the open.

☐ A. I tried to be considerate of the other parties' wishes.

☐ A. When the other person's position seemed very important to him or her, I tried to accommodate his or her preferences.

☐ A. I tried to explain the logic and benefits of my position.

☐ A. I proposed a middle ground.

☐ A. I sometimes avoided taking positions that would create controversy.

☐ A. I was firm in pursuing my goals.

☐ B. I let other people have some of their positions if they let me have some of mine.

☐ B. I tried to postpone the issue until I had some time to think it over.

☐ B. I always preferred a direct discussion of the problem.

☐ B. I tried to get the other person to settle for a compromise.

☐ B. I tried to be considerate of the other person's wishes.

☐ B. I almost always tried to find a solution that would satisfy everyone.

☐ B. If it seemed to smooth things over, I didn't try to persuade someone to change his or her views.

☐ B. I sought the other parties' help in working out a solution.

Interactions During Exercise

For the following items, please select the response option that best matches your perceptions of the exercise process. In these items, "we" refers to your agency.

Overall, how satisfied were you with [Q3]?

Please rate [Q3] according its success on each of the indicators listed below. Use the drop-down menu to give the exercise a grade on each item: "A" for superior, "B" for above average but not superior, "C" for average, "D" for below average, and "F" for failing. You may use also use +/- options (e.g., A+).

	Grade
My agency learned more about other agencies' priorities in a disaster like the one we simulated.	
The participants included the right people in terms of level and mix of disciplines.	
After this exercise, I believe my agency is better prepared to deal successfully with the scenario that was exercised.	
There was a lot of flexibility when decisions were made; people were open to discussing different options.	
Exercise participants met all of the overall exercise objectives.	
Exercise participants were able to adapt to changing conditions.	
The process of working on [Q3] was actually enjoyable.	
The exercise was well organized.	
The exercise produced important lessons learned related to inter-agency coordination.	
Because of this exercise, this group of exercise participants is better prepared to respond to real incidents.	
This exercise allowed my agency to practice and improve priority capabilities.	

Background Information

This is the last page of the questionnaire. These questions about you will help researchers determine whether a broader set of past experiences may relate to your impressions of [Q3].

In how many single agency exercises have you participated in the last three years?

In how many multi-agency exercises have you participated in the last three years?

Approximately how many hours have you invested in professional development activities (training classes, credential-earning activities, etc.) in the last 12 months?

Have you attained a FEMA credential in one or more functional areas?

☐ Yes

☐ No

Within your agency, are you certified in a "special operations" role? (e.g. hazardous materials technician, technical rescue technician, explosive ordnance disposal / bomb squad, weapons of mass destruction team, etc.)

☐ Yes

☐ No

Are you currently or have ever been enlisted in any branch of the U.S. Military?

☐ Yes

☐ No

☐ Prefer not to say

What is your sex?

☐ Female

☐ Male

☐ Prefer not to say

For how many years have you worked in your current field?

What year were you born?

Feedback to Help the IFSI

These last two questions seek your feedback for the benefit of the Illinois Fire Service Institute.

Since completing your last incident management course at the Illinois Fire Service Institute, have you had the opportunity to apply what you learned? Please check all that apply.

- ☐ Yes, in an exercise
- ☐ Yes, in response to a real incident
- ☐ No
- ☐ Don't know / Not applicable

How has the knowledge that you gained in your incident management course impacted your work?

If you would like to say more about this for the benefit of future IFSI trainees, please use the comment box below.