University of Delaware
Disaster Research Center

PRELIMINARY PAPER #342a

CONSIDERING CONVERGENCE, COORDINATION, AND SOCIAL CAPITAL IN DISASTERS

Tricia Wachtendorf, Ph.D.
James M. Kendra, Ph.D.

2004

Considering Convergence, Coordination, and Social Capital in Disasters

Presentation to the Canadian Risk and Hazards Network 1st Annual Symposium
Winnipeg, Manitoba, Canada
November 19, 2004

by
Tricia Wachtendorf, Ph.D.
Disaster Research Center
Department of Sociology & Criminal Justice
University of Delaware

and

James M. Kendra, Ph.D.
Department of Public Administration
University of North Texas

Abstract

Following the 2001 World Trade Center disaster, New York City experienced high levels of individual and organizational convergence: volunteers and groups wanting to assist in the response. Since that time, several initiatives across the U.S. have developed to encourage volunteer disaster response integration. Before 9/11, other formal and informal volunteer organizations had worked toward similar goals, and community-based disaster mitigation was touted as a valuable approach in both Canada and the U.S. Drawing upon examples from research conducted after the 2001 World Trade Center disaster response in New York City as well as research on community based mitigation and response programs, this presentation outlines important considerations when planning for volunteer and community wide participation in disaster reduction and response strategies. Findings point to the value of incorporating community-based groups in disaster related issues and decision making, as well as recognizing the social capital, resources, and expertise these groups bring to the table. This presentation also stresses the need to balance the real considerations and challenges that accompany public integration. Establishing and maintaining partnerships, incorporating groups not traditionally involved in disaster response or mitigation decision-making, setting boundaries, credentialing, familiarizing volunteers with existing response systems, and leveraging initiatives to maximize mitigation opportunities are some of the issues discussed.

This research was supported by grants from the Multidisciplinary Center for Earthquake and Engineering Research (MCEER), New Technologies in Emergency Management, No. 00-10-81 and Measure of Resilience, No. 99-32-01; by special supplemental funding provided by the National Science Foundation, by the Public Entity Risk Institute No. 2001-70, and by the Federal Emergency Management Agency EMW-97-CA-0519

In New York after September 11th we witnessed the massive convergence of personnel and materials (Kendra & Wachtendorf, 2003b). This convergence is, of course, consistent with what we have seen in many other disaster events and what has been well documented by the existing research (see, for example: NORC 1954; Clifford 1955; Fritz and Mathewson 1957; Barton 1969; Scanlon, 1992; Neal 1992; Neal 1994). What I would like to focus on today is the convergence of assistance to the disaster site: the bucket brigades of citizens as well as the uniformed personnel involved in search and rescue; the construction and iron workers and the restauranteurs who fed workers at Ground Zero alongside volunteers from the American Red Cross; the college students who became central to the mapping and data center at the EOC as well as the fire fighters from Vancouver and police officers from Florida who took vacation time to come and help in any way they could; and the hundreds of thousands of material items that were donated to the effort. Whether we talk about the massive amounts of assistance-related convergence to New York City after 9/11 or the similar but smaller degree of convergence that we saw here in the Red River Valley after the 1997 flood, the convergence phenomenon is typical to disaster response. Convergence is defined as "movement or inclination and approach toward a particular point" (Fritz & Mathewson, 1957: 3). It introduces needed resources, but it also can generate additional management challenges for public officials already occupied with their emergency duties (Stallings and Quarantelli 1985; Tierney *et al* 2001). Volunteer convergers may, for example, bring certain abilities that do not exist in sufficient quantities in the established response organizations; they may already be close enough to damaged areas to provide immediate assistance; and they may provide for the flexibility that is needed when organizations confront rapidly-changing conditions. At the same time, established organizations

must often invest time distinguishing volunteer convergers who have much needed skills from those well-intentioned convergers without the necessary skills; they must provide credentials to responders who were not previously considered part of a potential response; and they must work to adequately integrate new volunteer convergers into a response system with which those volunteers may be unfamiliar (Kendra & Wachtendorf, 2003b; Wachtendorf, 2004). Material convergence and the convergence of formal, non-volunteer personnel are also accompanied by both benefits and challenges.

In New York City after September 11th, there were many examples of assistance that came from convergers who were outside of the traditional response network. The Department of Design and Construction (DDC) – a relatively unknown city agency when compared with the high profile organizations of the Police (NYPD) and Fire (FDNY) department – was not part of any concerted disaster plan regarding massive debris removal following a New York City disaster. Yet key officials from DDC converged to the makeshift emergency operations center (EOC) and the group emerged as a lead organization that oversaw the removal of debris from Ground Zero. Another example of assistance came from those skilled in GIS. Without a sophisticated mapping and data capacity at the reestablished EOC, a network of government, non-profit, and private sector GIS specialists were brought in by the Department of Information Technology and Telecommunications (DoITT) and spearheaded the rapid onsite development of such capacities. Even students from Hunter College were brought in to staff the mapping area. Equipment was donated by the private sector as well as redirected from other city offices. This convergence filled a void in the response effort and significantly bolstered the city's response capacity. The impressive waterborne evacuation of hundreds of thousands people from Lower Manhattan was

not part of any disaster plan; rather, harbor vessel operators converged to creatively improvise the evacuation and eventual boat lift of supplies and personnel to the impact zone (Kendra, Wachtendorf, and Quarantelli, 2003; Kendra & Wachtendorf, 2003a; Kendra & Wachtendorf, 2003b; Wachtendorf, 2004).

But let's consider just one of the many contentious forms of personal or people convergence. We saw many restaurant owners converge to Ground Zero to offer food to response workers. Some were local businesses within the secured area that were now left without customers; others were local business owners wanting to help. We even saw people drive food trailers from across the country to set up shop. Certainly it can prove helpful when restaurants offer responders food, but when does this interfere with the mandate of agencies like the Salvation Army and the Red Cross? Does their assistance require them to receive credentials for access into restricted zones? Are they taking up space needed by others in the secured area, which in turn hampers the response or generates safety concerns in a dangerous and tightly confined zone? Does their presence foster counter-productive behavior, such as workers leaving the secured area and requiring decontamination? Are they offering appropriate food? Are they meeting health regulations? And can they be relied on consistently?

At the same time, do they meet the needs of some responders or residents whose needs are not met by the non-profits? Do they offer a variety of food choices deemed worthwhile by those confined to work at a site for long periods? Does their participation in a response effort improve morale in an impacted community? When we begin to consider all of these questions together, we begin to see the complexities of convergence and coordination in decision-making.

What about material convergence: The donations that come streaming in after a disaster?

Again, we saw examples during 9/11 of companies donating such items as printers and computers to the newly established EOC; work gloves and work boots to search and recovery workers and the contractors; and cash donations that could be targeted to emergent needs. We also saw the convergence of non-donated, in other words purchased, material resources that routed to the area, such as the huge lights that offered visibility on the first nights of rescue operation and the dust suppression machines that were more routinely used as rain-makers in movie shoots. These were examples of much needed materials, but we also saw donations of unnecessary goods that still required logistical management. Examples include the five tractor-trailer loads of pumpkins donated to Ground Zero around Halloween that needed to be redirected to public schools as well as clothing donated in such amounts that distribution was challenging to an area where relatively few people actually lost their homes and personal processions. We heard of people driving machinery and equipment to the site, leaving it for use, and then becoming upset when it was not returned even though the items were never documented, processed, or requested.

We all remember the saying from the Kevin Costner baseball movie, *Field of Dreams*: "If you build it, they will come." Well, if you have a complex disaster run right through it, they will come as well. Many forms of assistance will be extremely valuable. Other forms will not be needed and instead pose challenges as officials manage, support, and communicate with

volunteers, as well as process, store, transport, distribute, and dispose of material goods. The challenge lies in sorting positive forms of assistance from that which is not needed at that time – with an eye toward galvanizing the convergence of needed assistance while limiting the burden of that which is unnecessary.

As we hear heightened discussions of incident command, as we worry about which one authority is in charge and how to centralize response systems, the focus tends to move away from communication and coordination to command and control. We begin to see government responders as the primary if not the only disaster responders. We begin to see emergence as troublesome, as counter-productive, and as something that gets in the way of a good plan. We begin to lose sight of how decentralized disaster response decision-making really becomes in situations of high uncertainty. We forget that systems we rely on can fail, and we forget that emergence can fill important voids in government response capabilities (Drabek & McEntire, 2002).

That is, we lose sight of not only the human and physical capital in our community, but the social capital as well: The norms and networks that facilitate collective action. Social capital, of course, lies not in the actors – or in this case the convergers – themselves, but in the networks and social structure that can be mobilized by those actors, those decision-makers, and those convergers (Dynes, 2002).

Not only do government departments have critical roles to play in a disaster, but so too do the private sector, non-profits, community-based organizations, and everyday citizens. "Of course,"

you may say. "We know this." But then why is our disaster response planning still so lacking in critical information on the resources available in our communities and on how to best tap them? Why do most planning efforts continue to involve the traditional players?

The inclusion of representatives from community-based organizations is not commonplace in disaster response planning. Let me give you an example closer to home here in Manitoba. About ten years ago, I worked in Winnipeg as an outreach worker for Street Connections, a needle exchange program run in conjunction with Mount Carmel Clinic. Here was an organization that had knowledge of the street population of Winnipeg, that had means to communicate and distribute information, that was a relatively trusted source of information, and that would be able to raise concerns regarding the needs of this segment of the population during an emergency. Yet, at that time at least, it was not involved in the emergency response planning for the City of Winnipeg.

If the Brunkild Dike near Winnipeg had not held in 1997, I would have been surprised if Street Connections would have been accessed as a resource to reach out to this community. But truly they were a potential source of social capital upon which the city could have drawn: a key point to connect one network with another. Homeless shelters? Battered women's shelters? The Women's Institute? Places of worship? The local vocational school? We need to ask if we are effectively including their perspectives, input, and capacities in our disaster planning. We need to identify groups that can effectively serve as links between traditional emergency response organizations and these potential resources.

There are cases where this strategy, this network approach, is being adopted. In San Francisco, there is a group that is establishing a Medical Reserve Corps (MRC) of volunteers, primarily students from local medical schools, who will serve as translators between emergency response personnel and the non-English speaking Chinese population during a disaster, particularly with regards to medical translation. Moreover, this Medical Reserve Corps group will be involved in disaster and public health-related education to this segment of the population during more routine periods.

The organization overseeing the MRC works with this population on other non-disaster-related issues. They know this community well. Moreover, MRC volunteers will routinely work with other volunteers and staff who conduct outreach on non-disaster issues during their routine activities, thereby bridging the disaster network to networks which focus on other social issues. This is an excellent example of how the services one group provides routinely can be leveraged to increase disaster response capacity. By tapping into the network – the community-based organization with ties to the Chinese community, bridging this network with emergency response personnel, and expanding the network itself by forming the MRC within this umbrella community-based group, the community increases its social capital and its response capacity.

In our research, we've learned of neighborhoods that have created inventories of skills and resources and have shared those lists with very local emergency managers. This was not a one time effort but part of an overall community building strategy to build and bridge these networks. While state offices or departments in large cities would likely find inventories of this kind overwhelming, the intention is to provide neighborhood level information to those who would be

able to link it to information in the district and who could link it to information or requests city-wide. The establishment of these social networks – these links – can indeed increase the information a department has access to without necessarily increasing the burden on that department.

Unfortunately, there are some disaster volunteer groups that have developed in a vacuum: a relatively homogenous group of volunteers trained to provide surge capacity on a specific issue with little interaction with the disaster-response community. Not only may integration pose a problem for these groups in an actual emergency – as I'll talk about in a moment – but members of different groups do not have to opportunity to get to know each other, learn about the resources each group has to offer, and do not necessarily build on their social capital.

Research on disasters, including cross-border interaction during the 1997 Flood here in the Red River Basin, has demonstrated the importance of informal interaction and relationships during the response (Auf der Heide, 1989; Gillespie, 1991; Hightower & Coutu, 1996; Nigg, 1997; Wachtendorf, 1999). Not only do flood related-boards address planning and mitigation issues, they foster relationships strengthen networks. Even non-flood related boards and councils served to build relationships between cities and departments in the Basin and were tapped during the disaster response (see Wachtendorf, 1999 for further discussion).

So while the resources are important, the networks will play a large role in facilitating knowledge of those resources, appropriate resource sharing, and targeting resources where they are most needed.

When a disaster strikes, they will come. Some organizers in communities developing disaster-related volunteer groups have indicated that by developing these established cadres of volunteers ahead of time, it will serve to control volunteer convergence during a disaster. It is critical, however, to remember that we will still see convergence in a disaster response even when preexisting organizations or networks have been mobilized. Given the nuances of the disaster, some of these convergers may very well offer benefits to the response. While mutual aid agreements and preexisting relationships may facilitate a streamlining of needed material resources, donations will still come in and some may indeed be of great use. Our work does not end with the establishment and tapping of social networks but we must continue to recognize the likelihood of additional convergence and consider ways we will deal with those issues.

But let's take a few minutes to consider just a few of the ways we can facilitate volunteer assistance coordination as well as tap into the social capital of our communities.

1. Establishing and maintaining partnerships:

Ideally, partnerships – particularly involving organizations not typically involved in disaster planning – should be established prior to a disaster. Now, do you have a meeting with 500 organizations to put together a revised emergency response plan? Of course not. Not if you want to get anything accomplished. But you do begin to form new networks between these organizations or begin to think about how existing networks can be utilized in the disaster context.

The group of GIS students from Hunter College I mentioned were able to contribute to the response effort at the EOC because of their network (or professor's network) of GIS-interested people throughout New York City. As planners, we need to make inroads with organizations that can connect us to their networks and that are able to keep up with the pulse of that network as it changes over time.

The Project Impact (PI) initiative in the US was a good example of this in regards to mitigation. This initiative, introduced by the Federal Emergency Management Agency (FEMA) in the 1990s under the Clinton administration, provided seed money to local communities in the broad area of funding disaster mitigation and building disaster resistance. Although no longer supported at the federal level, some local PI communities made commendable strides in fostering what they called a synergy on mitigation issues. Partnerships were across private and public sectors; they focused on mitigation, risk assessment, education, and building additional partners; and brought to light many new concerns as well as new resources in the community.

2. Incorporating groups not traditionally involved in disaster response or mitigation decision-making:

Again, the activities in some Project Impact communities provide for excellent examples. The most successful Project Impact initiatives at the local level included not only traditional disaster planning partners, but brought to the table leaders of such groups as senior citizen organizations, those organizations that work with people with disabilities or with immigrant communities, and

organizations such as Habitat for Humanity, the Boy Scouts, the Sierra Club, the Humane Society, and Neighborhood Watch. These are just a few examples of the types of groups that provided a clearer understanding of the needs of different segments of the populations but that also had their own resources, skills, and expertise to add to the tool chest of the community's capacity.

Certainly, these groups may be very willing to become involved and help in a disaster response, but putting organizations in touch in the midst of a crisis can prove quite a challenge. It is preferable to know the organizations and the people who work with them beforehand. Indeed, they may have resources and skills to offer that don't immediately come to mind. Knowing each other, keeping organizations informed of emergent needs: these efforts could lead emergency managers to resources they didn't know existed in a timely manner and allow for successful improvisation when established systems are overwhelmed.

3. Setting boundaries:

Groups organizing volunteer corps in the US face challenges when there is a failure to establish boundaries for volunteers. It is crucial that volunteers have a clear idea regarding the types of activities and areas they can be of most help in as well as the types of activities and areas beyond the scope of their assistance efforts. For example, we may not want a long-ago retired health professional treating a seriously injured disaster victim if a practicing official is at hand. We wouldn't want volunteers converging into hot zones or danger areas – particularly without personal protective equipment – unnecessarily putting themselves in harm's way. Clear

communication, therefore, is imperative in keeping resources as human, material, and social capital and preventing them from becoming social liabilities. Still, catastrophic disasters can be dynamic and circumstances can be ambiguous. Volunteers need to understand the reasoning behind the guidelines to facilitate a shared vision of the response even when lines of communication temporarily fail.

4. Credentialing:

Credentialing encompasses a number of tasks, including training, certification, checking into licenses or qualifications, and issuing badges. If we limit our examination of credentialing to issuing badges, the process in New York City was commendable but extremely challenging and not without problems.

As new facilities emerged – such as off site warehouses, the family assistance center, and the debris processing/ remains recovery area at Fresh Kills landfill; as the convergence upon the EOC increased – particularly by people without city agency badges but sometimes with important roles to play; and as the impact site shrunk and demanded shifts in activity over time, officials needed to develop new systems to control access to the site, remove personnel who were no longer needed, and still allow timely access by those with legitimate response roles. Badges changed over time and varied by response site. Some convergers, especially those with the gift of gab and a great deal of local knowledge regarding access points, were able to negotiate their way in, while others who really needed to be near the site or who could provide a service that was

lacking (or simply overlooked) found themselves delayed, in long lines, challenging those at checkpoints, or basically locked out of the network entirely.

Credentialing is such an important part of ensuring vital personnel. Decision-makers need to consider ways to ensure that the valuable assistance providers get in (including those who have unidentified resources or skills to offer) and the well-meaning but less immediately-useful convergers do not.

Volunteer groups who plan to serve as surge capacity in a disaster must not develop their own credentialing system in isolation. Will emerging needs of an unanticipated disaster render the credentialing framework obsolete? Will security checkpoints, including those staffed by personnel from outside the area, be familiar with the credentials? Will they make sense in light of credentials issued through the emergency management system? Consider the colored contractor badges issued by at Ground Zero alongside the badges issued to those at the Emergency Operations Center (EOC). At one point, the white contractor badges were replaced by a different color in order to phase out some workers at Ground Zero. The EOC issued badge, which gave access to Ground Zero for some personnel, was also white even though in other respects it was quite distinct from the contractor badges. I can tell you than more than several people experienced difficulty entering the site with their legitimate white EOC badge because it was confused with white contractor badges. Now imagine a complex disaster where volunteer groups working in relative isolation have their own credentialing system. Integration of badges here is key.

Which brings me to:

5. Familiarizing volunteers with existing response systems:

Familiarizing volunteer corps or newly integrated volunteers with existing response systems is extremely important if we expect them to succeed. Again, the activities of one organization have implication for the activities of others during a disaster, and therefore their approaches should maximize ways to work in concert.

6. And finally leveraging initiatives to maximize opportunities:

Tulsa, Oklahoma is extremely successful in this endeavor. This city built upon its Project Impact mitigation program creating Tulsa Partners. It incorporated its volunteer corps, its community emergency response training, its neighborhood watch programs, its volunteer centers, its local chamber of commerce, its community groups, and many other initiatives. Moreover, the community linked these organizations, thought about their possible roles in disaster response, and used smaller emergencies as recruitment efforts – all to strengthen the community.

When many of our systems are stretched to the limit day to day – whether due to cutbacks, downsizing staff, or higher workloads – being able to mobilize our social capital to best adapt emerging crisis will help our response and recovery efforts.

Are we familiar with the resources in our communities? I would suggest that we need to continue to look for ways to build these networks in our communities. When the unexpected happens (and

it surely will, even if it's one component of a disaster event) our familiarity with the resources in our communities will better enable us to improvise and adapt to emerging needs.

After all, improvisation involves reworking our activities, resources, and organizational structures in novel ways under time constraints (Wachtendorf, 2004; Kendra & Wachtendorf, 2003a; Mendonca, 2001; Weick, 1998; Weick, 1993). To do that effectively, we first need to know what those activities, resources, and organizational structures are.

We need to think about bottom up processes as well as top down planning in order to effectively galvanize community efforts around a variety of partnership-building and partnership-knowing activities that will benefit the community during and outside of disaster episodes.

References

Barton, A. H. (1969). *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*. Garden City NY: Doubleday.

Clifford, R. A. (1955). *Informal Group Actions in the Rio Grande Flood.* A Report to the Committee on Disaster Studies, National Research Council.

Drabek T. E. and McEntire D.A. (2002). Emergent Phenomena and Multi-organizational Coordination in Disasters: Lessons from the Research Literature. *International Journal of Mass Emergencies and Disasters.* August, 22(2), 197-224.

Fritz, C. E. and Mathewson, J.H. (1957). *Convergence Behavior in Disasters: A Problem in Social Control.* Committee on Disaster Studies. Disaster Research Group.

Gillespie, D.F. (1991). Coordinating Community Resources, *Emergency Management: Principles and Practice for Local Government* (eds. Thomas E. Drabek and Gerard J. Hoetmer). Washington, DC: International City Management Association.

Hightower H. C., and Coutu, M. (1996). Coordinating Emergency Management: A Canadian Example, *Disaster Management in the U.S. and Canada: The Politics, Policymaking,*

Administration and Analysis of Emergency Management (eds. Richard T. Sylves & William L. Waugh). Springfield: Charles C. Thomas, 69-98.

Kendra, J.M. and Wachtendorf, T. (2003a). Creativity in Emergency Response after the World Trade Center Attack. In *Impacts of and Human Response to the September 11, 2001 Disasters: What Research Tells Us*. Special Publication #39. Boulder CO: Natural Hazards Research and Applications Information Center, University of Colorado.

Kendra, J.M., and Wachtendorf, T. (2003b). Reconsidering Convergence and Converger Legitimacy in Response to the World Trade Center Disaster. *Terrorism and Disaster: New Threats, New Ideas* (ed. Lee Clarke). Research in Social Problems and Public Policy (11), 97-122.

Kendra, J.M., Wachtendorf T. and Quarantelli, E.L. (2003). The Evacuation of Lower Manhattan by Water Transport on September 11: An Unplanned Success. *Joint Commission Journal on Quality and Safety* 29(6), 316-318.

Mendonca, D. (2001). Improvisation in Emergency Response Organizations: A Cognitive Approach. Dissertation Thesis, Rensselaer Polytechnic Institute, Troy, NY.

National Opinion Research Center. (1954).Summary of Findings of the Arkansas Tornado Study. Chicago, IL: University of Chicago/ National Opinion Research Center.

Neal, D. M. (1994). The Consequences of Excessive Unrequested Donations: The Case of Hurricane Andrew. *Disaster Management* 6, 23-28.

Neal, D. M. (1992). Issues of Donations Following Hurricane Andrew. International Sociological Association's Disaster Research Meeting.

Nigg, J. M. 1997. Emergency Response Following the 1994 Northridge Earthquake: Intergovernmental Coordination Issues. Preliminary Paper. Newark, DE: Disaster Research Center, University of Delaware.

Scanlon, J. (1992). The Man Who Helped Sammy Prince Write: Dwight Johnstone and the Halifax Explosion. *International Journal of Mass Emergencies and Disasters*10 (1), 189-206.

Stallings, R. and Quarantelli, E.L. (1985). Emergent Citizen Groups and Emergency Management. *Public Administration Review* 45, 93-100.

Tierney, K. J., Lindell, M. K., and Perry, R.W. (2001). *Facing the Unexpected: Disaster Preparedness and Response in the United States*. Washington DC: Joseph Henry Press/National Academy Press.

Wachtendorf, T. (2004). Improvising 9/11: Organizational Improvisation in the World Trade Center Disaster, Dissertation #35. Newark, DE: Disaster Research Center, University of Delaware.

Wachtendorf, T. (1999). A River Runs Through It: Cross Border Interaction During the 1997 Red River Flood, Thesis #11. Newark, DE: Disaster Research Center, University of Delaware.

Weick, K.E. (1993). The Collapse of Sensemaking in Organizations: The Mann Gulch Disaster. *Administrative Science Quarterly* 38 (4): 628-652.

Weick, K.E. (1998). Improvisation as a Mindset for Organizational Analysis. *Organization Science*, 9 (5) September – October: 543-554.