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TRANSITION FROM RESPONSE TO RECOVERY: A LOOK AT THE LANCASTER, TEXAS TORNADO

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INTRODUCTION AND REVIEW

This study looks at one incident (i.e., a tornado), and describes transition from response to recovery disaster activities.

Specifically, I look at different activities during and following the disaster, and record when these activities begin and end. For years both disaster researchers and emergency managers have relied successfully upon various but similar categories to describe the phases of disasters (e.g., preparation, response, recovery, mitigation). Early disaster research by Carr (1932), Powell (1954) and Stoddard (1968) all uncovered stages of disaster. By the 1960s, the use of disaster phases became important in codifying research results (e.g., Barton, 1969; Dynes, 1970; Drabek, Mileti, and Haas, 1975; Quarantelli and Dynes, 1977; Kreps, 1984; Drabek, 1986). In addition, work related to disaster recovery (Haas, Kates, and Bowden, 1977), family recovery (Bolin, 1982), and sheltering (Quarantelli, 1982; Phillips, 1991) show specific phases within the recovery phase. Practitioners have also long recognized the importance of disaster phases. Disaster managers have also used some notion of disaster phases. To recognize and standardize the practice, the National Governor's Association (1979) delineated the four phases of disaster activity: mitigation, preparedness, response, and recovery. Thus, these four concepts have become central to the role of disaster managers.

Neal (forthcoming) observes that the use of disaster phases provides a good heuristic device for researchers and practitioners. The field has thrived in part because of the conceptual use of disaster phases. Yet, Neal argues, continued use of the current notion of disaster phases may stifle both the theoretical and applied aspect of the field. Specifically, Neal demonstrates that both researchers and practitioners have observed or experienced problems with the current use of disaster phases. By looking at research from 1932, he finds that many disaster researchers and others have questioned the use of disaster phases. For example, Carr's initial work warns that social change and disaster phases are not discrete events:

This is the first thing that follows from the sequence-pattern concept: social change is not an episode, a protrusion, so to speak; it is a series of cycle of events no one of which is competent to represent the whole. (Carr 1932, pp. 215-216)

Barton recognizes implicit problems in delineating the phases of disaster:

One of the first steps of the early qualitative work in disaster was to distinguish the phases of the process. Sometimes, the division between phases is arbitrary because the variables characterize them change by degrees; sometimes sharp rises and falls define a natural turning point. The phases are not by any means identical for each event of a certain kind; we should need to study many cases carefully to pick out the more frequent sequences. (Barton 1969, pp. 48-49)

Haas, Kates, and Bowden (1977) make a similar observation:

At best, such period divisions are arbitrary, and are only useful in distinguishing the major functional activities of a period. Emergency activities do not cease suddenly, to be replaced by other types of activities. There is a blend of activity, with different groups of people working on different phases of recovery activity at the same time (Haas, Kates, and Bowden 1977, pp. 1-2).

Quarantelli (1982) makes a comparable observation about disaster phases related to their practical use:

Sheltering and housing phases do not usually progress in a neat linear fashion. In a given situation, some disaster victims may be entering the permanent housing phase while others are still in the emergency sheltering phase. Furthermore, there may be several moves as a family goes from one temporary housing situation to another. As a consequence, governmental organizations and relief groups may concurrently be dealing with segments of the populations at different stages in the sheltering and housing activities after a major disaster. (Quarantelli 1982, p. 78)

From a practitioner's viewpoint, the National Governor's Association (1979, p. xiv) report intimates the overlap of the categories: "It is evident that *the four phases of emergency management - mitigation, preparedness, and recovery - are not adequately understood*" (original italics). The authors elaborate upon this point later in the report:

In fact, the Functions and Effects Study generated the notion that the relationship between mitigation, preparedness, response, and recovery is not even linear. Rather, some preparedness activities (like educating government officials) could really have mitigation effects; and some recovery activities mitigate

against future disasters (like using housing loans to relocate residences out of a flood plain). The Functions and Effects experts hypothesized at least a cyclical relationship among these four phases of disaster activity .(National Governor's Association 1979, p. 108)

Most recently, a monograph on disaster response and recovery primarily authored by practitioners made the following observation:

Emergency response and recovery is not a linear process; decisions that are made during the emergency phase will impact the recovery process. In practice, however, recovery often takes place in an ad hoc fashion because key decisions are not part of a strategic program to restore services and rebuild communities. (Durham et al. 1993, pp. 30)

In summary, researchers and practitioners have relied upon various types of schemas to describe phases of disasters. Researchers and practitioners agree that phases exist. Yet, to date, no study has explicitly focused upon disaster phases. Therefore, in this study, I look at the process of response and recovery following a moderate tornado that severely effected a town 10 miles south of Dallas, Texas. Specifically, I look at the type of activities, when they begin and when they end. Based upon this preliminary assessment, I discuss the relationship between response and recovery.

METHODOLOGY

On April 25, 1994, At 9:38 p.m. a tornado cut a six-mile path through Lancaster, Texas heavily damaging the historic town square and an adjacent working class neighborhood located just west of the square. As a result, the impact killed three people, injured at least nine others, destroyed 258 homes, damaged another 130, and damaged or destroyed 58 businesses. Civil defense sirens sounded twice at 9:11 p.m. and 9:16 p.m. before the tornado's touchdown. Approximately a square mile was totally destroyed: trees were stripped, shredded or broken, homes were reduced to splinters (concrete foundation slabs were often the only things left) and buildings turned to piles of rubble).

Within 36 hours after the tornado struck Lancaster, Texas, The Institute of Emergency Administration and Planning had a field team of five members in the city of Lancaster. Two of the field team members are experienced in disaster field work. At least one field team member visited Lancaster on April 27, April 30, May 2, May 5, and July 6. These field visits allowed us to see the transition taking place from response to short term recovery needs. We used a number of related means for data gathering for specific trips related to this project. First, we used numerous observations to record what we (and others) considered either response or recovery activities or indicators. In addition to observations, we took numerous photographs of the community. Second, we obtained numerous documents from various sources that related to the disaster response and recovery. Finally, we interviewed over 20 people representing different organizations about their disaster activities. We interviewed organizational representatives from within the city, and other organizations from local, state, federal, or volunteer levels that also participated with the disaster response and recovery. We used semi- structured, open-ended questions to various organizational representatives to obtain a description of activities undertaken by the organization when dealing with the disaster. In our questions, we specifically avoided using such terms as "response" or "recovery" activities.

Upon the gathering of our data, brief key summaries of key organizations and their activities were compiled. Thus, we would have specific data when specific behaviors began or ended that would indicate events related to the response or the initial recovery of the event. In these brief histories, we noted the day but when possible the general time of day these events began or started.

ANALYSIS AND DISCUSSION

This analysis and discussion is based upon a basic catalogue of response and recovery activities that occurred between April 25th and May 13, 1995 (see [Table I](#)). During the first two days following the tornado, the data show that most activities focused on initial response activities. These activities included general disaster related actions (e.g.,

sheltering, curfews), tending to the infrastructure, and extensive media coverage.

Types of Activity

Disaster Specific Activity

The local government attempted to set up and use a command post the first two days after the disaster. From the command post, they attempted to coordinate the various efforts related to the disaster. Red Cross and Salvation Army did tend to basic food and shelter needs of victims and volunteers. These initial efforts lasted for about three days. However, as seen later, both organizations also initiated efforts at new and different locations to deal with the longer-term needs of the victims. Both emergency response personnel and volunteers undertook search and rescue efforts for about three days. Finally, police from neighboring communities (over 30) assisted for seven of eight days in staffing roadblocks, providing security, and eating free BBQ.

The Media

The tornadoes also became the lead stories in the *Dallas Morning News* and all three of the major local TV news broadcasts. These stories primarily deal with the amount of destruction, and human interest stories of how people managed during the tornado and survived afterwards. Headlines include "Twisters, hailstorms rip area: Injuries, damage reported in Lancaster and DeSoto," "Torn Asunder: Twister damage threatens to split up close-knit Lancaster neighborhood," and "Calming fears: Experts say parents can help lessen trauma for kids frightened by storms." The television focused also upon the images of destruction and the human interest stories of survival and heroism with victims and rescuers. In addition, the media assisted with local pleas for donations from churches, volunteer organizations and others. Food and clothing represented the main type of request at this point.

Infrastructure

After the tornado, the city initiated a number of activities to repair the local infrastructure. Within a day, garbage pickup resumed. Except for totally destroyed homes, phone, electric and gas service basically was restored in about a week. Phone companies arrived within three days after the tornado and provided free service for 12 days at designated booths in the town square. Two waves of debris removal occurred. The first, last three days, focused on clearing highways to allow rescue efforts and electrical or phone repairs. The other efforts started almost a week after the tornado and lasted for weeks. These efforts focused on clearing debris off people's property.

Social Services

From the first evening, the Red Cross and provided food and clothing for victims. Both the Red Cross and Salvation Army had service centers opened two to three days following the disaster. Their initial activities include helping the victims and feeding the volunteers. FEMA also opened its service center adjacent to the Salvation Army. Although massive donations poured into the area within two days after the impact, donations beyond the capabilities of the Red Cross and Salvation Army inundated the city. Almost two weeks after the tornado, at least three other church organizations developed their own system for receiving and distributing donations. The second wave of donations were utilized by the victims who lost their homes, or by others from the extreme lower end of the socioeconomic level. At such facilities as the Salvation Army's center, no questions were asked about victimization or need. They needed to get rid of the stuff!

The above description reveals that an apparent time of overall transition from response to recovery, probably occurred at the end of day three or the beginning of day four. However, no distinct line of response to recovery is apparent. Also, the types of activities suggest that the recovery activities reflect an "initial recovery" phase (1), that many efforts regarding recovery seemed to have little related to permanence or long-term aspects. Rather, people's needs and the local infrastructure was being repaired so longer, broader activities could be undertaken.

Disaster Activity by Time

To further explore the transition process, I next look at the various selected activities by when the event first began. This approach provides a slightly different perspective to the problem. Thus, the presentation of the data (see [Table II](#)) reveals a general transition from response to recovery activities. When the date are presented in this format, the notion of a distinct point where response ends and initial recovery begins becomes blurred. With this specific case, response

oriented activities generally ceased to exist as soon as one to two days following the tornado. Other response activities stopped about five days following the tornado.

This preliminary assessment shows that disaster activities "flow" from response to initial recovery. We cannot draw a line saying that response ended and recovery began on a particular date. Rather, I can suggest the following: On the first two days, most, but not all events focused on response activities. During the next two to four days, both response and initial activities occurred. By the fifth or sixth day following the disaster, most of the activities pertain to initial recovery.

In addition, even the data presented here do not pick up more subtle aspects of the distinct blending of the two periods. For example, when we arrived within 36 hours after the tornado, numerous people were clearing debris from the downtown area. Thus, this activity would seem strictly response in nature. However, this organized effort showed strong ties to recovery actions. Specifically, as volunteers and prisoners, working together, cleared bricks off buildings, sidewalks, or the street. They could have tossed the bricks onto a large pile or in a truck. Rather, they systematically stacked the bricks up against a nearby wall. The reason - to facilitate the reconstruction efforts months later.

Yet, as I suggest elsewhere (Neal, forthcoming), the needs in one "phase" may impact the needs in another. The short time for having a disaster shelter (and the Red Cross' initial location) at a school was due to the superintendent's economic need to get classes started again. Thus, economics related to recovery situations (i.e., get school started) forced both the end to sheltering (a response activity) and a rather quick start back for classes (a response activity).

This preliminary analysis looks only at activities. The data show that disaster phases exist simultaneously, and that the predominance of a phase may slide from one to another. The next part of my analysis, not yet undertaken, will specifically look at key organizations (e.g., city government, FEMA, Red Cross, Salvation Army) and their specific activities. Quite preliminary analysis suggests that organizations are also handling response and recovery activities simultaneously.

CONCLUSION

This reports looks at the transition of response and initial recovery activities following the impact of a tornado on April 25, 1995, in Lancaster, Texas. A long line of previous research shows evidence of disaster phases. Too often, the various schemas suggest that disaster phases operate in a linear, mutually exclusive fashion. For example, after a tornado hits, the response occurs, then the recovery, then mitigation efforts, then preparedness activities. Yet, both researchers and practitioners have suggested problems with assuming that disaster phases are linear a mutually exclusive.

This study looks specifically at the relationship between response and initial recovery activities. My data show that the relationship between response and recovery is not mutually exclusive. In fact, I find recovery activities occurring during times of response, and response activities occurring during times of recovery. I also show that a number of response and recovery activities occur simultaneously. Finally, activities related to one phase may directly affect the activities in another phase.

Although this is only one study looking at the transition from one disaster phase to another, this study highlights that the transition from one disaster phase to another is not a similar, discrete event. I believe that future exploration is needed to understand the complex nature of disaster phases. Such a clearer understanding could ultimately assist in improving the theoretical components of disaster and hazard research, and the applied nature of disaster management. For the field to continue growing, perhaps we should reconsider the whole notion and use of disaster phases.

FOOTNOTES

1. I do not want to suggest formally another disaster phase. Rather, the "fuzziness" of each category suggests subcategories and overlaps.

REFERENCES

Barton, Allen H. 1970. *Communities in Disaster: A Sociological Analysis of Collective Stress Situations*. Garden City, New York: Doubleday Anchor Book.

Bolin, Robert. 1982. *Long-Term Family Recovery from Disaster*. Program on Environment and Behavior, Monograph #36, Institute of Behavioral Science, Boulder, Colorado: University of Colorado.

Carr, Lowell. 1932. "Disaster and the Sequence-Pattern Concept of Social Change," *American Journal of Sociology* 38: 207-218.

Drabek, Thomas E. 1986. *Human Responses to Disaster: An Inventory of Sociological Findings*. New York: Springer-Verlag.

Durham, Tom, Eileen Baumgardner, Will Brothers, Brian Cowan, David M. Neal, Don Setterman, Paula Schultz, and Tom Zimmerman. 1993. *Emergency Response and Recovery*, Monograph #4. Memphis, Tennessee: Central United States Earthquake Consortium.

Dynes, Russell R. 1970. *Organized Behavior in Disaster*. Lexington, Massachusetts: Heath Lexington Books.

Haas, J. Eugene, Robert W. Kates, and Martyn J. Bowden (eds). 1977. *Reconstruction Following Disaster*. Cambridge Massachusetts: MIT Press.

Kreps, Gary A. 1984. "Sociological Inquiry and Disaster Research," *Annual Review of Sociology*, 10: 309-30.

Mileti, Dennis S., Thomas E. Drabek, and J. Eugene Haas. 1975. *Human Systems in Extreme Environments*. Boulder, Colorado: Institute of Behavioral Science, The University of Colorado.

National Governor's Association. 1979. *Emergency Preparedness Project Final Report*. Washington D.C.: Government Printing Office.

Neal, David M., Forthcoming (1996). "Reconsidering the Phases of Disaster," *International Journal of Mass Emergencies and Disasters*.

Phillips, Brenda D. 1991. *Post-Disaster Sheltering and Housing of Hispanics, the Elderly and the Homeless*. Final Project Report to the National Science Foundation. Dallas, Texas: Southern Methodist University, Department of Sociology.

Quarantelli, E.L. 1982. *Sheltering and Housing after Major Community Disasters: Case Studies and General Observations*. Columbus, Ohio: The Ohio State University.

Quarantelli, E.L. and Russell R. Dynes. 1977. "Response to Social Crisis and Disaster," *Annual Review of Sociology* 3: 23-49.

Stoddard, Ellyn R. 1968. *Conceptual Models of Human Behavior in Disaster*. El Paso: Texas Western Press.

TABLE I

DISASTER ACTIVITIES

DISASTER ACTIVITY	April													May																								
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
DISASTER ACTIVITY	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
Command Post	X	X																		X	X																	
Shelter-Victims	X	X	X																	X	X	X																
SAR-Humans	X	X	X																	X	X	X																
SAR-Pets	X	X	X	X																X	X	X	X															
Curfew	X	X	X	X		X	X													X	X	X	X		X	X												
Road Blocks	X	X	X	X		X	X	X												X	X	X	X		X	X	X											
Hotel-Victims			X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X									
INFRASTRUCTURE	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
No Garbage Pick	X																			X																		
Debris Removal	X	X	X																	X	X	X																
School Closed	X	X	X																	X	X	X																
No 100% Phones	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X											
No 100% Electric	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X											
No 100% Gas	X	X	X	X	X	X	X	X	X											X	X	X	X	X	X	X	X											
Free Phones			X	X	X	X	X	X	X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Debris Clearance							X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X
SOCIAL SERVICES	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
ARC Food Coop	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ARC Service Center			X	X	X	X	X	X	X	X	X	X	X									X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
SA Service Center				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
FEMA DAC							X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X
Church of Christ SC										X	X	X	X	X	X	X	X	X	X										X	X	X	X	X	X	X	X	X	X
Methodist SC												X	X	X	X	X	X	X	X											X	X	X	X	X	X	X	X	X
7th Day SC												X	X	X	X	X	X	X	X											X	X	X	X	X	X	X	X	X
MEDIA	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
Lead Local TV (3)	X	X	X	X	X	X														X	X	X	X	X	X													
Front Page DMN	X	X	X	X	X		X													X	X	X	X	X		X												
Donations Request	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
Front Page Local				X							X																		X								X	

TABLE II DISASTER ACTIVITIES BY TIME

	April													May																								
	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13
No Garbage Pick	X																			X																		
Command Post	X	X																		X	X																	
Shelter-Victims	X	X	X																	X	X	X																
Debris Removal	X	X	X																	X	X	X																
School Closed	X	X	X																	X	X	X																
SAR-Humans	X	X	X																	X	X	X																
SAR-Pets	X	X	X	X																X	X	X	X															
Curfew	X	X	X	X		X	X													X	X	X	X		X	X												
Road Blocks	X	X	X	X		X	X	X												X	X	X	X		X	X	X											
Donations Request	X	X	X	X	X					X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X
Front Page DMN	X	X	X	X	X		X													X	X	X	X	X		X												
Lead Local TV (3)	X	X	X	X	X	X														X	X	X	X	X	X													
No 100% Electric	X	X	X	X	X	X	X													X	X	X	X	X	X	X	X											
No 100% Phones	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X											
No 100% Gas	X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X											
ARC Food Coop	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hotel-Victims			X	X	X	X	X	X	X	X												X	X	X	X	X	X	X	X									
ARC Service Center			X	X	X	X	X	X	X	X	X	X										X	X	X	X	X	X	X	X									
Free Phones			X	X	X	X	X	X	X	X	X	X	X	X								X	X	X	X	X	X	X	X	X	X							
Front Page Local				X							X																		X								X	
SA Service Center				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Debris Clearance							X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X
FEMA DAC							X	X	X	X	X	X	X	X	X	X	X	X	X							X	X	X	X	X	X	X	X	X	X	X	X	X
Church of Christ SC										X	X	X	X	X	X	X	X	X	X										X	X	X	X	X	X	X	X	X	X

