The Organization of Chaos:
The Structure of Disaster Management

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Abstract

A radical change in the evolutionary process of dealing with disasters has occurred, replacing organic community adaptation with public administration disaster management systems. In consequence, technology has supplanted grass-roots community policy, data collection replaced historical knowledge and specialized emergency managers have displaced community leaders. I argue that these outcomes, based solely on the rationality of action within highly bureaucratic organizations, are detrimental to preventing or mitigating disasters. A review of relevant literature shows that public sector administrations are plagued by both internal built-in organizational conflicts as well as self-effacing goals that not only hamper effective disaster management but also inflate them. Comparing the consensus-based community with conflict based bureaucratic models of disaster management highlights these differences. Using historical global disaster data provided an insight into how public sector disaster management units have made little contribution in mitigating disasters. These results raised serious doubts as to the effectiveness of public administrations ability at disaster management and strongly urged a reintroduction of the community model.
Introduction

Disasters and emergencies appear to be as inevitable as taxes. So to is our ongoing effort to cope with them. This ability to cope lies deep in our primordial past which has taught us that ‘organizing’ is the most efficient and effective means to survive (Kauffman, 1994). The apparent chaos and threatening nature of disasters – as unusual, uncontrollable and many times unpredictable events – facilitated the development of organizational means to restore order and normalcy. In most cases, the latent organizational structure that evolved to mitigate disasters lay dormant and was only activated when needed. Yet, these same latent organizing behaviors have embedded themselves in all other forms of social activity. This is because, first and foremost, societies are in the business of surviving. When its members are killed or injured, when its economic viability is thwarted, or when the fabric of everyday life is tattered, survival becomes problematic (Miller et al, 1999; Janney et al, 1977). The activation of the latent ‘disaster oriented’ organization was essential to increase the survival function of the group or community (Paton, 2000). In most cases this meant the participation of the entire group or community so as to reaffirm and strengthen social bonds, clarify the division of labor and most importantly, set in motion practical means to overcome the disaster (Dynes, 1998).

These forms of disaster organizing have for centuries been an inherent part of a community’s social structure. Today, most of these social functions have been excised and replaced by public sector agencies dominated by external non-community public administrations. I will argue that the consequences of this change have increased the vulnerability of communities to the vagaries of disasters.

Historical Organizing Forms

The historical forms of organizations dealing with disaster events (before, during and after) reflect how well we have adapted to both the sources of disasters (from natural to man-made) as well as how we utilized societal social capital in minimizing disruption. It is easy to imagine how our ancestors, living in caves or wandering the plains, developed means to cope with and survive what was then considered natural events – even those which we today consider disasters (such as floods, fires, extreme weather
The process of adaptation, migration and inventiveness were all used in conjunction with adaptive forms of organization to maximize survival. The result has been a type of an organizational disaster subculture which emerged when disaster threats were perceived to be eminent (Granot, 1996). This pattern of community participation in the development and activation of organized behavior to face disasters remained in place over thousands of years (Oliver-Smith, 1986). Its remnant remains a benchmark for survival in grass root behavior and the overriding goal of societal maintenance.

The institutionalization of organized behavior in the face of disasters must be seen in light of extended time-span over which it occurred. This time-span reinforced, refined and culturally embedded such behavior into our psychics. As time went on, however, small groups and communities grew, dispersion led to cultural differences, and technological advances were made. Both population growth and domesticated agriculture led to newer organizational forms. These forms accommodated to the culture that generated them (Roth, 1970). Nation states evolved from tribes, urban centers from rural villages, commercial trade overpowered barter or subsidence markets. What did not change was the occurrence of disasters. What did change was the frequency and severity of disasters, especially with the urbanization of populations (Quarantelli, 1999; Institution of Civil Engineers, 1995). Individuals, groups and communities not only faced the fortuitous wrath of nature but unknown types of disasters fashioned by their changing social, political and economic environment (Blaikie et al, 1994). This historical change forced people to face disasters of their own making (Quarantelli, 1993; Cuthbertson, 1987). In particular, there arose the potential risks associated with technological disasters (Perrow, 1984). With most societies rapidly undergoing modernization came the first faltering but consistent steps at alternative organizational forms to specifically deal with disasters. Such socially designed steps remained at the community level (Quarantelli, 1985). However, the underlying theme in this reorganization shifted emphasis in increasing the effectiveness community survival by refining its generic primordial origins into artificially designed organizations.
From Community to Bureaucracy

Modernization, it seems, was the proverbial straw that broke the camels back by transferring community based ‘disaster organizing’ into the hands of the nation state. And this process started fairly late in human history – less than 300 years ago - just before the industrial revolution and global population explosion. Yet, it marked a watershed in the organizational forms of survival with the appearance of specialized sub-organizations whose objectives were primarily focused on mitigating, coping and resolving the emergence of natural and man-made disasters.

This type of specialization reflected the general trend toward adaptive reorganization to modernization. It also fostered the emergence of new definitions of disasters (Gilbert, 1998). One result was that after thousands of years of trial and error, bureaucratic organizations replaced traditional groups and small communities as the main source of disaster organizing. This displacement had a significant impact on what was defined as a disaster. All at once, a combination of organizational, social and physical qualities associated with the collapse of cultural protection became the key components for disaster definitions (Dombrowsky, 1998). For example, forest fires or floods – once considered natural events - were socially redefined as disasters. Industrial output, once a key in measuring progress, was now redefined as Hazmat disasters for producing potential toxic wastes (Edelstein, 1988). The natural cycle of hurricanes, tornados and floods became “disasters” as people defied nature and migrate to those areas associated with this phenomenon. Numbers dead or injured, amount of property destroyed or damaged, determined if a disaster occurred or did not (Gordon, 1982). In most cases, these redefinitions reflect a transition in the belief that man had the ability to more rationally assess risk associated with control of the environment and the future (Rogers, 1997).

Organizational Forms

To better understand how the traditional organizational adaptive mechanisms that were operative over thousands of years evolved, we must make several assumptions. First, we start off by assuming that the primordial group survival behavior remains intact as a viable collective force countering threats against societal continuance (Tory, 1979). This means that it is latent behavior embedded in most types of social groups. These groups may be organic in nature, emerging during times of need (e.g., taking in
displaced families or helping after a disaster) or groups already in place in the community under the rubric of general welfare groups (e.g., voluntary ambulance driver, firefighters, search and rescue teams). The key here is a flexible social network interwoven into the community which emerges as an organized group in cases of disasters. Second, that such organizational behavior would be honed over time to maximize efficiency and effectiveness. The time-honored learning curve of experience should, according to this assumption, winnow out what not to do and select behavior crucial for survival. Resident farmers of Iceland know where not to build on the basis of past stories of avalanches passed down through generations. Residents of Tiberias Israel have learned to plant shade trees on the side of their homes which maximizes shade. Builders have learned to design earthquake resistant homes, shipbuilders more stable and safer ships, and so on. Trial and error over centuries, along with modern technology and information systems, have all been integrated into these social networks. What we do not assume is that the implementation of these organizational forms and complimentary behaviors to cope and manage disasters will be consistently rational (Fisher, 1998).

This last point is poignant for organizations are devises that, because of their human content, contain both rational and non-rational behaviors (Daft, 1998). In order to understand the implications and relevance of this duality for disaster management, the impediments on organizational behavior will need to be examined. To do so, I will first contrast community models of disaster management to those prevalent in complex organizations. Both will be reviewed in terms of organization behavior employed to adapt to social disruptions created by the physical environment. This means looking at both “natural” organizational social adaptations found in community settings along with “artificial” purposeful organizing devises associated with bureaucratic structures.

**Community Models**

Communities are organized social units. As an organic social unit, communities have the flexibility to adapt, change and accommodate to their physical and social environment. They represent the cumulative social assets of small group interdependent relations built on family-clan, friendship and economic networks. Commonality is based on being ecologically distinct into natural and/or social areas (Hawley, 1950). On this basis, they represent one of the major mechanisms for societal survival,
development and growth. In such communities, disasters are socially constructed normative situations when efforts are made “to protect and benefit some social resource whose existence is perceived to be threatened” (Dynes, 1998). The uncanny way in which collective community action occur prior to, during or after a disaster demonstrates the power of organic indigenous organizing (Comfort, 1994; Oliver-Smith, 1986; Schware, 1982). Studies of disasters involving communities’ point out the varied ways local populations organize to not only help their neighbors, but also revitalize and reconstruct the social basis of their communities (Drabek, 1986). One such recent study in Japan focused on the emergence of such self-organizing groups in the midst of a technically advanced, densely populated metropolitan region (Comfort, 1996). This occurred even when “disaster authorities” were mandated to do this job.

The key to understanding this type of organizing rests at the very heart of basic social processes during which simple interactions lead to normative behavior. These behaviors form repetitive patterns which, over time, are institutionalized. From here, the force of tradition takes over and with it the inherent capability for what has been recently called self-organization. One part of this process, as I have argued, involves survival. Survival behaviors developed over long periods have also become institutionalized, emerging as organized community group behavior during crises (Dynes et al, 1990; Parr, 1970; Quarantelli & Dynes, 1970). Such self-organizing behaviors in the face of disaster represent one type of emergent community response. As the term “community” is universal, being ubiquitous in highly urbanized as well as rural dominated societies, disaster behavior depends on the dynamic social structure of the community. To view community in this context is to tease out those long dormant survival behaviors which increase survival chances. More importantly, as these survival behaviors are indigenous and organic to communities, in contrast to artificial or exogenous organizational implants, expected chances for survival and reconstruction of the community’s social fabric should be greater when undisturbed. In addition, case studies of how communities utilize their social assets during and after a disaster demonstrate the strength of social groups within communities. A large and varied number of disasters case studies support this viewpoint (Center for Hazards Research, 2000).

Organizational Models
If this is the case, then why has there emerged an alternative disaster management system associated with public administration? To begin to answer this question
requires examining the basis for such an alternative organization. As I argued, the shift from community to state brought with it a similar shift of disaster management from the community into complex bureaucratic public sector organizations. The most palatable reason appears to be that such an organizational framework seemed the natural outgrowth of the modernization process. It reflected the philosophy embedded in science, namely controlled change, and afforded a rational approach to disaster management. Such an approach found its way into public administration disaster management as a curious combination of styles. By examining them, we will not only learn how disaster organizing is structured, but the mechanisms, flaws and constraints built into them.

Rational System Approach

One of the most pervasive explanations for the basis of organizing behavior has emerged from the rational system approach. This approach assumes a high degree of rationality in human behavior that is directed toward purposeful goal seeking. Given this approach, the organizing ability of modern man to deal with disasters should generate a foolproof disaster management organization, capable of dealing with every imaginable type of disaster. The emergent structure that would evolve is likely to have classic characteristics of what we call today a bureaucracy: a hierarchical structure, authority associated with the office, defined power relationships and a top down chain of command. This approach toward organizing has several variants. One focuses on the scientific rational utilization of the individual who is seen as a cog in a well-oiled machine. Frederick Taylor’s classical “scientific management” approach represents this viewpoint. Another approach sees various types of generic societal authority as the basis for goal attainment in bureaucratic structures (See Weber’s study of bureaucracy). A third emphasis the rational use of administrative directives. Henry Fayol’s 14 principles of administrative management exemplify this perspective. In addition, a forth approach by Robert Marsh and Herbert Simon claim that it is a highly formalistic framework with rational options for decision-makers that forms the basis for organizational success. The underlying theme of all these organization forms is that rational behavior determines the best structure, means and processes through which the organization attains the groups' goals. Within this ideal structure, rational decisions take place that expedite performance.
Natural Systems Approach

Yet, the rational approach in organizing behavior disregarded many non-rational characteristics of people. In a sense the "ideal" rational man faced the reality of human social life. Taking this cue, organizational researchers forcefully argued that organizations mirrored the social dynamics inherent in societies. The champions of this perspective developed what is now called the "natural systems" approach. These included proponents such as Elton Mayo (human relations), Chester Barnard (cooperative systems), Philip Selznick (institutional) and Talcot Parsons (social systems) (Scott, 1995). Their arguments were simple. The artificial rational system of organizations was contingent upon (but not entirely replaced) by the foibles and frailty of human social relationships. Organizational relationships developed according to the rules imposed by societies and went beyond strict rationality. Loves, preferences, hatred and jealousy were all part of the formula in social relationships. Informal social structures could comfortably live alongside formal bureaucratic hierarchies; informal leaders alongside formal officers. Departmental/personal conflict of interests could undermine rationally constructed chains of command and authority. In short, the ability to rationally organize did not always guarantee that success was inevitable, or that goal attainment would be efficient and effective. Proponents of human resource management considerably enhanced this theme to the point where employee's non-rational "needs" overwhelmed organizational goals. The bottom line was that understanding organizations required unraveling the mechanisms by which social behavior becomes organized. In a large sense, the natural systems approach revived the idea that organizing behavior was a "natural" component of society and certainly an inherent means to enhance survival in the face of disasters.

Open System

An extension of the "natural system" was appropriately designated the "open system" approach. This is because it became increasingly clear to organizational theorists that viewing organizations as closed independent systems did not match reality. If organizations mirrored the culture in which they arose, this had to include cross-organizational relationships. What evolved was an approach which viewed organizations as sub-systems within systems, promoted the importance of the external environment and the interdependence among and between organizations. This perspective found strong support in the writings of Norbert Weiner (cybernetics) and
Walter Buckley (modern systems theory). In its large sweep, this approach forced many to see the social and structural dynamics of organizations to be part of a larger set of organized social relationships. All at once, organizational systems arose with interlocking, subordinate and competitive parts. Cross-organizational relationships appeared in the exchange of goods and services; changes in one subordinate system affected other systems; internal structure depended on supply and demand made by other organizations. What this meant was that no longer could organizations, whose goals are to confront disasters or emergencies, be seen as independent of their social, organizational or environmental roots. This meant the possibility of a window of opportunity to reintroduce the community, as a subset of the larger disaster management organization system. However, the social system approach also highlighted the realistic possibility of inter-organizational dissonance (and not only cooperation), which as we will see, has become a key operative elements in the way public administration manage disasters (Kouzmin et al, 1995).

**Figure 1 About Here**

**Organizing Chaos**

Taking these divergent approaches toward disaster organizing and applying to them the proposed alternative disaster management models – community versus public administration - we can gain some notion how chaos is organized and then managed. Ideally, the community model represents the historic primordial-disaster organizing mechanisms for survival. Community based disaster management would, in this model organize chaos by involving organic, flexible and consensual social subsystems. In contrast, disaster management influenced by rational, natural and open systems would be more characteristic of the bureaucratic public administration system prevalent today (Public Administration Review, 1985). Disaster related chaos, from this perspective, would be quantified and pigeonholed.

The fact is that public administrations overwhelming predominate disaster management in both developed and developing nations (WHO, 1994). The appeal of public administration to manage disasters is, in addition, supported by a rational new-science philosophy which claims the ability to control, predict and manage our material, social and even religious lives. To this end, the institutional organization of chaos has become
identified with public administration (WHO, 1994). Under the rubric of modern science and rationalizing organizations, the natural content and social meaning of disasters was abandoned. What resulted were their artificial classification and conceptual description based on statistical estimates and probabilities (Gordon, 1982). By fitting disasters into the framework of science, by making order of chaotic but reoccurring natural phenomenon, public policy administrators created an artificial but systematic means of controlling, predicting and managing disasters (US General Accounting Office, 1991). Simultaneously, this perspective also influenced how the potential and actual victims of disasters would be viewed (Quarantelli, 1998). They too could be classified scientifically. They too could be managed. Now damage control could be objectively evaluated and recovery policies dehumanized (Gunn, 1992).

Yet, there are advantages in the way public administrations organize chaos. From an academic perspective, such organizing provides the building blocks for empirically testing theoretical propositions. This process sets in motion a means to objectify and collect quantitative data alongside qualitative anthropological material. The results have been fairly impressive based on the recent increase in serious academic and practitioner publications in the area of disaster management. Of equal importance has been the creation of national and global data banks (Red Cross, 1997), centers focusing on disaster studies, information clearing houses, in-depth studies of specific disasters and laboratory experiments (Anderson & Woodrow, 1989). The great advantage of trying to make sense out of disasters from a physical and social perspective is that it allows us to view disasters from a broad perspective (Kent, 1987). But, as I will point out, these advantages in data and information generation, created within the walls of public administrations, can easily go awry within the very auspices of these same public agencies (McEntire, 1997).

**Information and Disaster Management**

In general, the expansion of traditional forms of public administration has gone hand-in-hand with the demand for more and better information. Such information seeking has several advantages. Not only does it provide a justification for providing public sector jobs but also creates information pools that offer a legitimate basis for policy development and operational decisions. Judgements backed up by numbers are, for both politicians and bureaucrats, a more legitimate means to make decisions than ‘political’
opinions. In the case of the early development of disaster management as a single issue at federal levels, data collection became a paramount organizational goal. Scientifically dedicated data collection increasingly replaced generic community sources of information. The dedications for quantitative information was accelerated by the fact that disasters are highly visible, require immediate solutions and do not go away. A major consequence is the immediate and long-term affect on public trust (or disdain) and votes. The result was a feedback loop which led to a need for more, better and accurate data (Kelly, 1995). Creating information pools formed primary organizational goals. Some research was even initiated. The assumption was that disasters could be avoided, mitigated, and dealt with more efficiently and effectively when more information was available (Neal, 1993).

One result of these data collection efforts has been the creation of global data banks, centralized electronic library collections, research and training centers and local information centers. I will now take advantage of these data pools to explore if these efforts have indeed affected how we deal with disasters.

Disaster Management Organizations
While disasters have been coterminous with humankind over the millennia, non-community based disaster organization are relatively new. At mid twentieth century, it was nearly impossible to point to specific organizations (or job positions) whose task was to manage disasters (except those that were war/conflict related). The only notable exceptions have been local community based fire and police (and of course militia) organizations throughout the world. Disaster prevention and mitigation remained in the hands of local communities. In the United States, this appears to have remained mainly intact (Rubin, 1981; Miletii & Sorensen, 1987; Stallings & Schepart, 1987). In less urbanized and industrial nations, this pattern continued even into the later part of the 20th century. With the Second World War came a surge of interest in both disaster research and prevention (Form & Nosow, 1958; Fritz, 1957). This interest emerged primarily in developed Western urban industrialized nations and was ‘imposed’ through dominance of training programs on less developed countries (Quarantelli, 1986). It seems reasonable to conjecture that the vast organizational experience gained during the war and the threat of nuclear destruction upon the civilian population engendered this thrust of interest. Natural and technological disasters continued to occur and were
sporadically studied (Charles & Kim, 1988). For the most part, disasters were seen as the problem of local communities. However, within a short period of time, the intervention of public authorities at the federal level or by central governments (e.g., military) became predominant. It was at this point that even local community organizations started to take on the formal bureaucratic characteristics of their larger federal big brother. In the United States, this metamorphous was even mandated in law (FEMA, 1999).

Until this point, most disasters were seen as a scientific challenge. Technical solutions were the way disasters were defined. Dams could control floods. Fires by water distribution points, building materials and sprinkler systems. Earthquakes by building codes. Tornadoes and Hurricanes by weather warning systems. As it started to become clear that technical solutions were not enough, and that disasters involved complex social, psychological components, the search for socially based information became paramount (Quarantelli, 1988). Public administrators who had to deal with disasters sought “cook-book” solutions (Charles & Kim, 1988; Quarantelli 1997) but typically relied on the existing organizational structure and inter-organizational relationships to deal with these problems. The results were, to say the least, mediocre (Granot, 1999; Tierney, 1985; US General Accounting Office, 1991). Falling back to an organizational solution, public sector disaster managers again sought salvation through better-organized information systems at both a national and international level. Embedded in the heart of public administrations was the belief that access to better, more up-to-date and reliable data would – through their rational organizational structure – provide the answers to preventing and mitigating disasters. When all else failed, compensation became the most often tool used to disguise failures at prevention.

In a short time, it became apparent that the ability of government-sponsored organizations to deal with disasters did not live up to this rational scientific promise (Platt & McMullen, 1979). A dearth of studies began to show the downside of public administrative intervention into local disasters (McLuckie, 1975; Hirose, 1979; Heathcote, 1980; Sylves, 1991; Olson et al, 2000). More concern was now put on approaches that favored natural and open system approaches; factors that put an emphasis on the social sciences. It was at this point that social science research (primarily sociology) in the area of disasters began to develop and increasingly affect
public sector public disaster managers in public administrations (Dabeck, 1986). Journals, research groups, and professional specialization began to appear so that by the turn of this present century saw the creation of a new professional group called “disaster managers”. This group received professional certification, could attain a specialized college degree and most importantly find employment. However, the criteria for such certification was initiated and to a large degree controlled by the bureaucratic public administrators who dealt with disaster management (FEMA, 1999).

It can be assumed that the increase of disaster management professionals was driven by market forces; primarily the availability of jobs. These job slots were more often than not created and supported by public sector funding. Most local authorities have (or need) a position for such professionals (LACDE, 2000). The expectation was that these professionals would simply be clones of their big brothers in federal level positions. However, the certification program was to a great extent influenced by social scientists who dominated the disaster research field and control over academic certification. Disasters were now seen not only through the eyes of the (potential) victims but also within the context of the community’s social organization. Disasters were being moved out of the technical sphere and being redefined as the product of the community and its social organization (Quarantelli, 1998). Such a perspective went counter to the organizational Standard Operating Procedure of public administrators, i.e., centralized formalistic decision making on the basis of bureaucratic criteria. In fact, this process exacerbated the already built-in structural friction inherent in public administrations by trying to move the focus of attention to the victims rather than the organizations’ needs. This trend in humanizing disasters was supported by the mass media which emphasized “human interest” stories as well as portrayals of the bureaucratic nature of the disaster management agencies (Fisher, 1998).

Global Disaster Management

One of the major symbolic acts removing disaster management from the community to large public administration organizations was the declaration by the United Nations at the end of the 20th century of the “Decade of the Disaster”. Disaster management became global; financial resources along with the establishment of numerous associate and consortium organizations sprang up. Mass media took up the cause with every major and minor “disaster” reported worldwide. Disaster myths were created and
perpetuated by the mass media (Fischer, 1998). Until this global agenda was declared, environmental issues were still in their infancy and the number of research or consulting organizations focused on disasters were extremely small (Myers, 1993). The establishment of disaster research units (mainly university affiliated) and disaster management units in public administrations only became visible in the 2nd half of this century (late 1950’s). By 2000, the number of disaster related organizations had grown exponentially. The US Government alone has no less than 26 major agencies and dozens of regional offices dealing with disasters. There are additional 95 specialized units established for differing disaster situations. To this can be added 80 US domestic non-governmental organizations (NGO’s).

The distribution of disaster related global based agencies (NGO’s and Public) likewise grew, composing over 90 major public agencies with offices throughout the world. This pattern of the globalization of disaster management also strengthened the hold of public administration on the area of disasters. It has also led to typical inter-agency conflicts (Granot, 1999), problems of coordination (McEntire, 1997) as well as territorial imperatives, turf wars (Red Cross, 1997) and competition (Kent, 1987). What was apparent at the nation state level where public administrations dominated the definition of disaster, who was qualified to be a disaster victim, what help would be afforded and so on, was now extended at the global level by other forms of public administration in different guises. As several critical reports have noted, the results have been at the same mediocre levels of disaster management (on a larger scale) where, in some cases, such “assistance” was more detrimental than helpful! (Kent, 1987).

**Conflict vs Consensus**

The question that I raise here is why have public administration organizations fared so poorly in the field of disaster management? The fundamental answer lies in the built-in conflicts inherent in such organizations. These conflicts have plagued formal complex organizations throughout the ages and have become more acute today with their greater transparency. This built-in conflict stems from the nature of artificially created structures, based on rational systems, when confronted by informal structures that
pervade them. On the one hand, the formal structure is bureaucratic, rule oriented; where centralized decisions based on rational mechanical authority are prevalent. Such a structure demands organizational behavior which is organization oriented rather than client oriented, where bureaucratic structure form a distinct internal labor market independent of outside competitors and internally rewarded (DePrete, 1989). In addition, as disaster management agencies are only one (small) but bifurcated unit within a larger bureaucratic public administration, they face a multitude of intra and inter-organizational conflicts: to co-ordinate or seek co-operation (Hills, 1994); confusion over their role and function by other administrators (Perry, 1995); disparate and conflicting management practices (Sylves, 1991; Cosgrave, 1997) and legal problems of authority (Drabek et al, 1981; Adams, 1981). The most damaging – for the potential disaster victims - is that within such formal bureaucratic structures, effectiveness may come to be measured in terms of inter-departmental power relationships and not services rendered.

This built-in conflict between the formal and informal social structures within bureaucratic public administrations has a number of negative consequences on the effectiveness of disaster management. Placing these conflicting factors within the organizational framework of disaster management’s goals creates many of the non-rational behaviors so often associated with organizations (Gordon, 1996). Some of the more distinctive types of conflicts involve disputes concerning means and ends, individual versus organizational goals, territorial (and/or departmental) imperatives, cooperation in contrast to competition, the selective flow of information, and even personal interests vs administrative directives (Daft, 1998). These built-in conflicts have become increasing more visible and detrimental to disaster management as expectations from the “victims” and dependence on such organizations grows.

On the other hand, communities are the natural outcome of human organizing. They are pervasive throughout the world, organic in nature, composed of indigenous populations and structured on the basis of family and economic strata (Quarantelli, 1998). Communities are not only found in rural areas but can exist within the midst of large urban centers. Unlike bureaucratic structures that exemplify public administrations, however, a community’s structure is kept intact mainly through a social process of consensus building (Ross, 1967). This process is continually renewed through basic
social interactions which foster symbolic identification and attachment to the community. Some of these encompass family and friendship networks, social and voluntary group formation and economic investment and interdependencies. This consensus lays the basic foundation for cooperative action on part of its members. Embedding into this process the time honed disaster survival experiences gained from the past (as they are socially defined by the community), we find an organizational framework on instant alert and well prepared for dealing with and coping after a disaster. This has been most poignant in the generation of emergent norms which have laid dormant during disasters (Neal & Phillips, 1995). Some recent researches on how disaster related decisions are made clearly point out how neighbors and neighborhood institutions affect behavior (Kirschenbaum, 1996). In fact, there has been a recent dirge of papers, books and even U.S. Federal programs which have renewed the efforts to bring disaster management down to the community level (Dabeck, 1986; FEMA, 2000; LACDE, 2000). These efforts have built their assumptions on the fact that at the community level, policy decisions are already built-into the social structure.

However, the other side of the coin is that certain types of community-based disasters require external intervention that is only available through public sector or NGO support (Haider et al, 1991; Haas et al, 1977). Most of these situations are truly mass disasters that affect an entire community and lay waste the social (and economic) basis for coping. It is at this point that outside help is necessary but, as many a case study has shown, external help can create a dependency on the giving organization and may stifle the long-term recovery process. In some cases, the help actually exasperates the situation, especially in cases of draught and flooding. In others, it prolongs the recovery stage by intervening in the social reconstruction of the community (Britton, 1989).

Thus, if we now compare the community and public administration models of disaster management, it is possible to discern that no one model is truly ideal. Both are needed in certain circumstances to deal and cope with disasters. Yet, the overwhelming evidence points toward the community model as being best and better equipped to socially, psychologically and economically manage disasters. The major reason for this is that disaster management agencies located within public administrations suffer from all the inadequacies inherent in formal structured bureaucracies. This being the case,
why do such disaster management units persist in dominating the field of disaster management? What is even more perplexing is, as I will now demonstrate that such public sector units have not led to a reduction of disasters or reduced their impact.

**More Agencies, More Disasters**

To put my argument more sharply, the growth and expansion of disaster management in public administrations has not prevented nor ameliorated disasters but may have actually exacerbated them. I have reasoned that the built-in conflict inherent in bureaucratic disaster agencies make such disaster goal effectiveness both a low priority and difficult to attain. And, with the dominance of such public agencies in the field of disaster management, organizational behaviors reflected concern for bureaucratic rather then the victims’ (and community) concerns. The results could be simplistically described as “the greater the number of disaster agencies, the more the number and severity of disasters”. To support my contention, I will make use of data collected since the turn of the century (1900-2000). This data of recorded disasters, along with the growth of disaster management agencies over the past century, should clarify this proposition. The source of these disaster data were collected by an international disaster database agency (Centre for Research, 2000) and have already been utilized by various researchers to analyze disasters in Africa (Elberier et al, 1998) and the Arab world ((Al-Madhari & Elberier, 1996). In our case, the focus will be on long term trends so as to reflect the basic changes in the structure of disaster management since the 20th century and see how they associate with actual disasters.

**Figures 2-6**

As we can see in Figure 2, recordings of *natural* disasters\(^1\) over the last 100 years shows them to be a continuously increasing. Until the 1960’s, the number recorded has more or less remained stable, between 10-50 annually. The greatest surge in the number of recorded natural disasters appears after 1960 raising six folds from less than 50 to 300-350 annually by 1999. This pattern fits neatly with the growth of disaster

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\(^1\) Natural disasters include avalanches, landslides, droughts/famines/food shortages, earthquakes, epidemics/floods, scrub fires, tropical cyclones/hurricanes/typhoons/storms/volcanoes as well as cold waves/tsunami/insect infestations.
management agencies which occurred after the 1960’s. Does this mean that we are experiencing greater numbers of natural disasters? Or that disaster management units actually contributed to increased numbers of disasters? The answer to these questions seems to be positive. On the one hand, the definitions (and increased number) of disasters may be the result of a bureaucratic ‘make-work’ justification to transform what were once considered “natural events” into disasters. With post 1960 technology, particularly mass (media) communications, locating such “disasters” also became more readily accessible. On the other hand, the demand for such data could very well have been the result of demand made by increasing numbers of disaster management units established in public administrations after the 1960’s. In both cases, this watershed period— the 1960’s - seems to mark a point when the full force of bureaucratic public administration overwhelmed community based disaster management. As a result, definitions of a disaster developed from within these bureaucratic structures rather than organically from the communities affected. The result, as the data demonstrate, has been an increase in the number of disasters. And, as I have pointed out, the number of disasters grew along with the number of such disaster management units created.

**Severity and Distribution**

To say that this match between increased numbers of reported natural disasters and disaster management units was coincidental or artificially created faces another daunting fact. Not only have the number of natural disasters increased but also the number which are classified as significant. In this case, disasters were measured in terms of their severity by using such factors as people killed, numbers affected or their (nations) economy dislocated. On the basis of these figures, the number of significant disasters has steadily grown over the last century (See Figure 3). It is clear that on the basis of all three measures of disaster severity, the numbers follow a similar upward pattern over time. More specifically, the number of disasters in which at least 100 people were killed, 1% of the population affected and 1% of the nations GDP lost remained stable until after WWII and then began to steadily increase from 5-10 to approximately 60 annual disaster events. This same pattern holds true when examining disaster severity in terms of estimated damage in terms of millions of US dollars (See Figure 4). Ignoring the exceptions (such as the Kobe earthquake in Japan), dollar loss damages ranged in the few millions in the 1960’s and have climbed to the billions by the end of the century. If we add to these data technological disasters (Table 1), we see
that, here to, the number of technological disasters has increased 200% from 1970 to 1999 and seems to be hovering at over 200 per year for the last ten years.

Table 1 About Here

Disasters, as can be expected are not distributed evenly. Nor are public sector disaster management units. On the one hand, disaster have affected all major regions of the world but with Asia facing the brunt of such disasters followed in intensity by the Americas, Africa and Europe (See Figure 5). But the concentration of public sector disaster management organizations does not seem to be related to the actual distribution of disasters. Europe tops the list having over a third of these global agencies. North America (USA & Canada) houses 20%, Asia 15%, South America 9%, Australia 8% with India (5%), Africa (3%) and Middle East (3%) contributing to the total. Thus, what appears is an inverse relationship between the frequency of reported disasters and the number of disaster management units located in these areas.

Thus, we see two distinct patterns which help clarify the proposition that “the greater the number of disaster agencies, the more the number and severity of disasters”. For one, this proposition generally holds on a global but not regional basis. As we have seen, where disasters are more frequent, the number of public sector agencies to prevent, mitigate and help in recovery is least. However, in terms of the severity of disasters, there seems to be support for the notion that despite increases in the number of public sector disaster management units since the 1960’s, they have not either reduced the number nor the severity of disasters.

Conclusions
The overall objective of this chapter has been to critically evaluate how public administration disaster management agencies have fared in preventing, mitigating and coping with disasters. The recent historical maturity of such public administrative apparatuses in the field of disaster management, however, belies the century old disaster survival skills that have been embedded in community social structures. These time-honored abilities to organize and hone community-based skills have, as a result, been severely disrupted. Partly due to the process of modernization, community based
survival skills have been transferred out of the community into public sector bureaucratic organizations. This process, based on 20th century organizational theories, advocated a rational approach to creating and managing service organizations. This, the argument goes, would provide the most effective and efficient means to deal with such phenomenon as disasters. However, if this were the case, we would expect a decrease in the number and severity of disasters with increased numbers of such disaster management units.

Yet, due to a built-in conflict between the formal and informal structures in complex organizations, such lofty goals are nearly impossible to reach. This is even more so in bureaucratic type organizations typified by public administrations. If we dismantle the generic term administration, such built-in conflicts include inter-agency/department rivalries; endemic problems of coordination and cooperation, means-ends reversals, distorted communications networks and of course power politics. Thus, public sector disaster management units may not fit the ideal picture that was proposed by their rational approach founders. The opposite may actually be the case, which led me to reconsider the community model as an alternative approach.

The advantages of the community model for disaster management are first and foremost their pervasiveness throughout the world. They are naturally organized, mainly based on on-going social networks of individuals, families and businesses. And they embody a vast historical knowledge of survival skills which becomes emergent in times of disasters. In most cases, communities are resilient and able to accommodate themselves to disasters. It is only when such disasters are devastating, when all sources of internal help dissipate, that it becomes necessary to ask for external help. But, here again, does this mean obtaining help from public sector disaster management units? I (and others) would argue that community-to-community help would be better.

Yet, the dominance of public sector administrations, which control disaster management units, makes this argument a mode point. Rarely do communities control their own destinies. With this in mind, I reviewed the growth of and role of disaster management units in public administrations (both globally and national). These units, on the one hand, represented a way of organizing chaos with the goal of control and prevention. On the other, they provided job slots for professionals whose background
was primarily in the social sciences. Thus, in addition to the built-in conflicts within public administrations, disaster management agencies had their own special types of conflict; advocates of the victims versus concerns of the organization. To some degree the “victims” in this conflict have made a comeback. Once again, emphasis was put on the community but not as the generic source of disaster survival. The public sector organization was simply decentralized, downgraded and renamed as community disaster management.

Thus, we come back to the basic question and proposition I raised. Given all the inherent conflicts in public sector disaster management units, have they helped prevent or at least mitigate disasters? Employing a historic disaster data bank, I investigated this question. My basic proposition was that despite the growth in the number of public sector disaster management units, both the number and severity of disasters have increased. Using data covering a 100-year period from 1900 to 2000, and based on reported disasters, I found this to be generally true! A curious association matching increased numbers and severity of disasters with increased numbers of disaster management units emerged. Until the 1960’s, the number of both natural and technological disasters remained fairly low and stable. The main point of departure occurred afterward just when disaster management units started flourishing both in the west and as part of global organizations (UN). At this point there was seen a steady strong increase in both the number and severity of disasters.

Can it be said that public sector disaster management units instigate disasters, increase their ferocity, and boost their human and economic costs? Or have these disasters been around all the time and only recently redefined in terms of the public administrations bureaucratic needs? The answer probably lies somewhere in-between. But it is clear that the ‘coincidence’ of increasing numbers of disasters are associated with increased numbers of public sector disaster agencies may not be a sheer coincidence.
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