LATENT ASSUMPTIONS IN DISASTER STUDIES:

EMERGENT STRUCTURES AS CONCEPT

by

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ABSTRACT

The concept of emergent structures was traced through six approaches to human behavior in disaster: journalistic, panic theory, developmental sequence, symbolic interaction, traditional culture and pre-disaster continuity approaches. Wide variations in underlying assumptions associated with emergent structures revealed latent ideologies with highly divergent assumptions. For some disaster studies, emergent structures represent a newly formed social system replacing the one which collapsed at the time of disaster impact. For others, emergent structures were the collection of emergency roles contained within the pre-disaster social system and applied during extreme emergencies when appropriate. The theoretical implications of these highly diverse meanings attached to a single concept are briefly discussed as is the need to standardize and make more precise the major concepts within this multi-disciplinary field of scientific endeavor.

LATENT ASSUMPTIONS IN DISASTER STUDIES: <u>EMERGENT STRUCTURES</u> AS CONCEPT[1]

This essay explores how the concept, emergent structures, is employed in disaster research and which are the underlying theoretical assumptions reflected in its use. One salient orientation assumes that existing cultural and social systems are precipitously destroyed during catastrophic events, supplanted by either an instantaneously created emergency system or by a gradually emerging one. An alternate view claims that pre-existent cultural and social systems contain emergency roles and "normal" behavioral alternatives which may be called into play during unusual situations. By sampling research orientations in six major categories of disaster studies, the different usages and implications of the emergent structures concept can be more readily scrutinized. These six orientations or approaches are:

1- Journalistic approach

2- Panic Theory (Equilibrium) or Socio-Cultural Collapse approaches

3- Developmental Sequence approach

4- Symbolic Interaction (Perceptual Distortion) approach

5- Traditional Culture (Blueprint) approach

6- Pre-Disaster Continuity approach

INTRODUCTION

We often wander all over our material in the social sciences, using ad hoc categories to make some meaning from our data. Although some of these constructs are less than perfect, they are useful in helping to give meaning to our efforts and for comparisons and analysis. However, some which are imperfect in their initial formulation become reified as they are repeatedly used over time. The basic assumptions used in developing such a construct may be lost and implicit or latent assumptions made concerning its meaning, validity and utility. From time to time some popular concepts (such as <u>emergent structures</u>) may need to be re-examined and clarified in the light of contemporary research findings.

Disaster studies may focus on systems disrupted by catastrophic events as a static entity in temporary disequilibrium or as a dynamic system in flux. Some conceptual frameworks used to study macro-social change may discuss evolutionary, cyclical, developmental or tansitional models (See Applebaum, 1970; Lauer, 1977). Small scale change models of a micro-order may discuss human adaptations to unusual circumstances within three major perspectives(Broom et al., 1981: 139). First, ecological patterning occurs when a segment of the social order attempts to gain an objective view of its surrounding environment utilizing subjective codes and cues. The second is a blueprint situation which freezes society at a parti-cular point in time to analyze the effects of rapidly changing circumstances and external forces on it. Third, open or fluid situations occur in which people must adapt to changing conditions right while intereaction is underway. By means of cybernetic cues, each defines and redefines his situation and appropriate rolees while simultaneously trying to assess the changing reactions of others to ones own behavior. These three perspectives must be further subdivided as the accumulation of disaster studies increases our sophistication and conceptual precision.

In the more static blueprint perspective, management studies and sociology have created pre-disaster training programs, evacuation models and comprehensive disaster relief plans which, though based on the rationality of man, do not always include man's patterned personal and social priorities which cause massive deviations from such models (See Tweedie et al., 1978 for an example).[2] Some social organization texts focus on the dynamic aspects of "open systems" which more carefully deal with external factors affecting the internal functioning of an organization (Hall, 1982; Daft, 1986). Some deal with power and by locating key decision-makers, devise plans which will enable them to more effectively function in disaster-type situations (Drabek, 1986; Snow, 1986). But when organizations weigh said training against all other demands and skills which must be covered for an effective organization, most crisis-management planning is restricted to the most probable crises which might occur locally, based upon previous experience and trends (Snow, 1986: 10).   -2-

Massive civil defense programs have been designed to minimize 'panic' reactions in case of nuclear threat, an objective that if effectively promoted has the latent consequence of increasing apathy toward warnings in the case of actual disaster. Depending upon the underlying ideology or assumption concerning how humans react to stress and catastrophy, programs to ameliorate or minimize the negative reactions of such events are developed, many of which use identical terms with highly dissimilar connotations. Although the single concept, emergent structures, will be highlighted in this essay, other salient concepts might be examined in a similar way.

IDEOLOGICAL VARIATIONS IN USING THE EMERGENT STRUCTURES CONCEPT

Journalistic Approach

Earliest recorded accounts of human deprivation-- disease, storm, fire, flood, and famine-- were stoic reactions to the inevitable. Events involving huge numbers of human casualties such as the 800,00 flood victims along the Yangtze river at the turn of the century or the 40,000 who perished in the 1902 Martinique disaster were accepted as unpreventable. Sensational and lurid accounts of such events were common as reflected in book titles: The Great Galveston Disaster: A Full and Thrilling Account of the Most Appalling Calamity of Modern Times (Lester, 1900); True Story of the Martinique and St. Vincent Calamities: A Vivid and Authentic Account of the Most Appalling Disaster of Modern Times (Whitney, 1902); or The True Story of Our National Calamity of Flood, Fire, and Tornado (Marshall, 1913). Inevitable casualties of conquest, such as those of the New World suffering the invasions of Europeans, the building of the Great Wall of China or the Cheops of Egypt were explained by "destiny," "God's Will," or a result of the "Divine Right of Kings" doctrine. Leaders often emasculated their own people and, when confronted with disastrous consequences, conveniently shifted the blame to undesirables within their midst. Turkish Sultans kept baroque Jews and Christian palace guards to "blame" when disaster struck. (Coser,1972) Plutarch describes how Romans used the Christians in a similar manner.

They take the Christians to be the cause of every disaster to the state, of every misfortune to the people. If the Tiber reaches the wall, if the Nile does not reach the fields, if the sky does not move or if the Earth does, if there is a famine, or if there is a plague, the cry is at once, "the Christians to the lions." (Allport, 1958: 235).

And today, America explains its current economic downturn by blaming it on illegal Mexican aliens or the maquiladora industry just across our border (Stoddard, 1976,1986,1987). With a shift in our cultural values and technological advances, our society perceived precipitous events as conditions whose impact could be prevented, controlled or ameliorated through adequate training, preparations and planning. Disasters described previously in sensational graphics now saw the pleasure-loving passengers of the Morrow Castle and Titanic or revelers who did not escape Boston's Cocoanut Grove ballroom (Kartman and Brown, 1943; Veltford and Lee, 1954) as victims of a preventable tragedy. But along with this shift is the highly selective schizoid nature of American Society (Bain, 1935; Lynd, 1939: 59-62) which ignores residential encroachment along seacoast and flood plain locations, excuses drunken driving, ignores the intake of drugs and carcinogents, and maintains some insensitivity to chemical waste disposal and nuclear energy problems of the future while seriously making flawed plans for national defense in an all-out nuclear holocaust: words vs deeds (Deutscher,1973).

Contemporary disaster researchers are still affected by residuals of the journalistic approach. With instantaneous mass media coverage of far away events— terrorism, unpopular cults, social movements, natural disasters and accidents— the process of data-gathering has been slightly altered as "reporters and camaramen rush into the ghettos; elected and appointed officials follow behind; sociologists and other scholars arrive shortly after" (Fogelson, 1970: 146). By then, consensus begins to form among participants and victims, organized around the earlier journalistic narratives.

Another legacy from the journalistic era is the uncontested tradition of
classifying natural disasters according to meteorological criteria; i.e. whether
oxygen acted as a swirling gas (winds, tornados, cyclones), as a potent liquid
(poisonings, floods, broken dams, hurricans) or serves as a combustion catalyst
(explosions, fires). Although useful for the chemist or physicist, social
scientists require a classification system with human dimensions and factors.
Thus, an exploding mine is unlike a gradually deteriorating mine safety code,
a dam suddenly bursting unlike a gradual flood level rise at the dam-site. The
factors of precipitous vs gradually forming, localized vs extended coverage,
and recurrency vs unexpected are far more useful for understanding human reactions
in disaster situations (Stoddard, 1966;1968)

This journalistic approach generally avoids analysis; thus, the concept of
emergent structures is not only conspicuously absent but is inimical to the under-
lying premises of inevitability which dominate so many writers of this genre.

Panic Theory (Equilibrum) or Socio-Cultural Collapse Approaches

From LeBon's (1895) seminal work on the psychology of crowds as a collective
response of individual spontaneity, disaster studies have been dominated by
psychology and psychiatry searching for answers to behavior in unusual circumstances.
Within these disciplines, reactions to disasters are often seen as "abnormal
behavior" resulting from not having essential needs met (See Inkeles, 1960;
Reissmann and Miller, 1966). Describing human reactions to disaster in terms
of individualistic personality dynamics prompted early researchers to see
precipitous events as a total collapse of the social structure. Prince, des-
cribing a huge explosion in Nova Scotia, concluded:

> In Halifax there was a disintegration of the home and family and of the
> regulative system... There was a time when the city ceased to be a city,
> its citizens a mass of unorganized units (Prince, 1920: 32-33).

In this same tradition Cantril et al. (1947) explained the 'panic behavior' of
Americans listening to Orson Wells' radio broadcast, the Invasion from Mars.

Victims of the Cocoanut Grove ballroom fire were said to have died as a "mass of unorganized units" seeking to survive (Veltfort and Lee, 1943). Reactions to World War II bombings were explained in a similar manner (Janis, 1951). Wallace (1956a) stressed the collapse of conventional society in the Worchester tornado disaster, while most other studies of that same era reflected this same implicit assumption (See Spiegel, 1955; Drayer, 1957; Raynor et al., 1957; Wolfenstein, 1957). Wallace (1956b: 267) explained disaster reactions as rapid transformations of mental images or 'mazeways', simultaneously repudiating the mechanistic fallacies of behaviorism in favor of psychological perspectives which "correctly explain individual reactions to crisis events." Only by adopting the latter perspective

> can our ability to analyze disaster improve. We will be able to delineate
> how people normally behave in response to the gradual erosion of their
> socio-cultural systems... We will be able to grasp more precisely the
> process of response when socio-cultural systems do not disintegrate or
> change slowly, but collapse precipitously (Demerath and Wallace, 1957: 1,
> italics added)

An even more extreme perspective cites the need for on-site psychoanalytical stations in the event of an A-Bomb attack. As published in the U.S. Armed Forces Medical Journal, it warned:

> "Psychiatric first aid stations will be needed to take care of victims of
> panic and fear in case of A-Bomb attacks" two groups of doctors have de-
> clared. "Panic may take more lives than actual A-Bomb attacks," one group
> pointed out. "Group panic" it was pointed out "involves unreasoning, un-
> critical and unadaptive movement of groups toward escape from danger"
> (Anonymous, 1951: 374).

Perhaps these unreasoning, uncritical and unadaptive reactions are so labeled by external observers who are inferring victim reactions from a "Monday morning quarterback" perspective.

Along this same dimension of panic-reduction programs, soldiers participating in A-Bomb test maneuvers held in Nevada during the 1950s[3] were given lectures and information about atomic energy to reduce stress levels and avert panic (Schwartz and Winograd, 1954) although 'panic is a highly overused and amorphous term.[4] More than three decades have gone by since Fritz and Marks (1954: 29-30) surveyed the NORC disaster studies only to find no central identifiable criterion to delimit 'panic' as a behavioral form or to delimit its application to any central behavior syndrome. Since 'panic' is still widely used, and contains the questionable assumption of the collapse of entire social systems during disaster impact, perhaps we have linked ourself to an outdated and somewhat amorphous ideology surrounding the viability of socio-cultural systems under stress.

Researchers from a sociological perspective, less prone to use the concept of 'panic,' have similarly embraced the assumption of system collapse during crises. Loomis writes:

> In the context of general disaster, within seconds, one social system vanishes and a new one is created, a new social system in which, after a short reconnaissance, a compelling new end or objective suddenly unites the chance members and forces them into action (Loomis, 1960: 129-130, 140, italics added).

Barton (1970: 66-67) sees the time lag of normal processes strained as they attempt to handle the new emergency situation, creating new systems to fill the social vacume. The societal collapse assumption is propagated in Cyclone Tracy's impact on Darwin, Australia (Webber, 1976) and in Kai Erikson's (1976; Landis, 1986: 334-338, 360-364) description of the loss of communality following the Buffalo Creek flood in West Virginia.

A recent modification of the notion of "total system collapse" is advanced by Zurcher (1968: 28) who opines that sets of behaviors and expectations associated with a transitory position (ephemeral role) become linked with an emergency ad hoc structure. When applying it to the impact of a tornado in Topeka -- at the level of the total society, the community, and the individuals-- its disruption to the

social structure occurred in concert with an emergent social system. However, the origin of the emergent system was not altogether precisely given.

> The moratorium on day-to-day roles was strongly motivated. At first the nature of the new role was unclear; it emerged from the circumstances and led to new forms of social organization. As such new forms of social organization became available, the nature of the ephemeral role became more clear. Group norms and values developed as the emergent social systems appeared (Taylor et al., 1970: 66).

Though claiming that empheral roles were not necessarily created de novo but more likely modified out of past experience of those involved in the disaster, their assertion that the "nature of the new role was unclear" leans toward a completely new and previously unknown role prescription being created in the disaster upheaval. In this perspective, the pre-disaster social system's input into disaster reactions and adaptations is either minimized or entirely eliminated. Thus, emergent structures as viewed by 'panic theorists' or others noted are instant creations formed out of necessity when the former socio-cultural system collapses..

Developmental Sequence Approach

From the Nineteenth century evolutionary change models of Herbert Spencer (1974) or the cultural stages schema of Henry Lewis Morgan (1877), the notion of an ever upward unilinear, cyclical or undulating mode of human progress has been a basic creed of Western Civilization and its social scientists. One of the first to apply the social change model to disaster studies was Carr (1932) whose paradigm reflected the nature of the causal agent, the speed, scope and duration of its impact. But little was done with his pioneering efforts and subsequent decades were dominated by psychological explanations of human reactions to crisis. But one useful residue of the sequential model for contemporary disaster researchers is the use of chronological stages and phases, embraced by psycologists and sociologists alike but utilized within different theoretical frameworks. A representative sample of temporal models can be seen in Figure 1.

Figure 1. Comparative Variations of Time Model Usage in Disaster Research

Carr (1932)	Powell et al (1953)	Ellemers (1955)	Wallace (1956a)	Drayer (1957)	Smith (1957)	Williams (1957)	Form-Nosow (1958)	Stoddard (1961)	Wright et al (1979)
Preliminary or Pro-dromal period	Pre-disaster Conditions		Steady State		Preparation and Training	Adjustive Phase	Pre-Disaster Phase	Pre-Disaster Phase	Pre-disaster Planning Period
	Warning	Warning	Warning and Threat	Pre-impact		Protective Phase	Pre-Emergency Phase	Emergency Phase –Warning stage	
	Threat	Threat						–Threat and Evacuation stage	
Dislocation and Disorganization Phase	–Impact– Inventory	–Impact–	–Impact– Personal Isolation	–Impact–	Threat or Impact (Mass Care)	Impact Phase Survival Phase	Emergency Phase –Period I –Period II –Period III	–Dislocation stage –Relocation stage	–Impact– Implementation of Disaster Policies
	Rescue	Rescue	Rescue	Post-impact	Post-impact (Emergency Relief)	Remedial Phase (Recovery period)	Post-Emergency Phase	Post-Emergency Phase	
	Remedy	Evacuation	Evacuation			and		–Short-term Rehabilitation stage	
Readjustment and Reorganization	Recovery	Restoration	Restoration		Temporary Rehabilitation Permanent Rehabilitation	Integrative Phase		–Long-term Rehabilitation stage	Long-range Effects of Disaster Policies

By segmenting the disaster experience into distinct temporal periods, certain features of organizational needs and victim reactions could be distinguished from those occurring in other times. Certain types of leadership were more effective in the 1953 Holland flood at given times than at others (Ellemers, 1955). In the rehabilitation phase, the differences between short-term assistance and permanent long range programs as outlined by Wright et al. (1979) are clearly evident. As one contemporary disaster researcher focuses in on "disaster domains," he finds it useful to arrange them generally by chronological occurrence (Kreps (1985: 58).

The classic six-step model of Smelser (1962) points out the sequential pattern of collective behavior elements which blend theoretical dynamics to mass behavior within a chronological pattern. Similarly, the "emergent norm theory" of Turner and Killian (1972) takes as its point of departure the notion that norms and structures of earlier periods (even pre-impact) are the basis for developmental processes generating new norms and emergent structures.

Since the developmental sequence approach is both a theoretical viewpoint and an unsophisticated analytical tool (chronological arrangement), the use of time sequences is as readily acceptable to those who posit the full destruction of the pre-disaster social structure and those who claim its continuance. Theoretically, the very act of focusing on the process of development rather than treating it as an event, tends to view emergent structures as old structures which have been somewhat redefined and modified rather than a new creation spawned by a disaster event.

Symbolic Interaction (Perceptual Distortion) Approach

Like the developmental sequence approach just discussed, the symbolic interaction viewpoint can be considered as either an ideological concern or a methodological tool. But it differs significantly from perceptual distortions cited in 'panic theory' inasmuch as its focus is seeking to view the disaster as seen by the participant rather than as inferred by external observers and analysts.

Basic to this framework is the work of George Herbert Meade who viewed society as a constantly moving, changing network of personal intereaction.

Persons in the system constantly perceive and evaluate the behavior of others, altering their own behavior to meet the expectations of others (Blumer, 1966). This provides a framework for the insightful work of Davies who suggests that riots occur, not because of hunger, suffering or poverty, but because of the difference between earlier expectations and subsequent reality, and whether the results seem fair (Light and Keller, 1982: 536-537). If, as ethnomethdologists claim, society is merely a composite or collection of perceptions which enables one person to relate to another (Garfinkel, 1967), the reactions of disaster victims to the event can be more easily understood by knowing their perceptions and expectations than by knowing information about the disaster event itself. Research has demonstrated that relief efforts which consider the values and expectations of their clientele will be evaluated more positively than aid supplied by agencies with greater resources and better facilities, but who administer help within the impersonal channels of a rational bureaucratic system (Stoddard, 1969).

The relativistic nature of how perception influences ones evaluations of a disaster was seen in the 1954 Rio Grande flood. Families reported their financial losses according to their own priorities and standards, not by criteria set by the relief organizations or disaster researchers (Clifford, 1955). And even within a relief agency, there are strains between the local volunteers and the agency-trained professionals, both in how they view the disaster victims and how they view their own role in the relief process (See DeHoyos, 1956: 7; Deutscher and New, 1961: 21-36; Stoddard, 1961: 99-109, 121-131). Moreover, local part-time volunteers must solve multi-role conflicts and role ambivalence as they apportion their resources to help themselves and others (Killian, 1952). In both Form and Nosow (1958: 88-100) and Nordlie and Popper (1961: 30-32), the victims of the beecher tornado and other disasters were far more concerned with the problems of others than with their own needs. This shows the limitations of so-called rational models, based upon economic self-interest, in predicting behavior of those who

are unwilling participants in a disaster.

Another aspect of perceptions as reality involves the evaluation of assistance given during an earthquake, fire, tornado or flood. The hero and the fool are identical behavior patterns, differeing only in how they were evaluated at a later date. A person who breaks into a "burning" house to rescue a crying baby is a hero only if the house subsequently burns to the ground; he is a fool if the smoke came from an overheated stew on the stove. In a similar vein, people who accidentally lose their eyesight are coerced to accept "reality" and play the dependent 'blind role' offered to them by the rehabilitation counselor. But someone who was socialized in the "normal" sighted society tries to reestablish his life as closely to his former lifestyle as possible, a pattern labeled "denial of reality" by counselors. For those socialized in the sighted society, mainstreaming back to that society is a return to "normal." For persons blind from birth and socialized as a "blind person," mainstreaming or operating as a sighted person is the ultimate terror. A person's aspirations and reactions to being blind have more to do with his pre-accident socialization than with the accident which caused the blindness (Stoddard and Shanks, 1983). In a similar disaster research finding, the behavior spawned by rumors of a broken dam created the same behavior and precautions as would have the reality of a dam breaking (Danzig et al., 1958). So, inferences about victim reactions by persons who know little of the situation and of the perceptions and expectations toward the event at the time it was being experienced is liable to attribute feelings and motives to those involved which they never felt and did not use to make their behavioral decisions.

Form and Loomis et al. (1956) claim that the pre-disaster context in which diasters occur and to which people respond must be known in order to understand behavior caused by that disaster event. As a theoretical framework, symbolic intereactionism is very much in harmony with this view. But when used as a simple methdological too, gathering the perceptions of victims, workers and/or researchers, almost any of the various approaches to disaster behavior can interpret the findings to correspond to its underlying assumptions.

Traditional Culture (Blueprint) Approach

The major thrust of this approach is similar to that of the symbolic inter-actionist view except that the level of analysis here concerns overall cultural values rather than perceptions of individuals.

From prehistoric times to the present, all cultures survive by requiring conformity from their members toward basic behavior patterns and values which are then labeled "normal." By initiating negative sanctions against deviant or non-normal practices, traditional values are maintained with little or no change. Thus, abnormality is seen as a function of cultural relativity (Herskovits, 1948: 61-79) rather than the result of universal pre-dispositions and needs as in the 'panic theory' approach. For example, Schneider (1957) describes the "normal" reactions to a typhoon by residents of the island of Yap who believe that the cause of these storms is strong sorcery by their enemies. Thus, although Yapanese have known for generations that by tying down the roofs of their huts. most of the destruction can be averted, at the first warning of impending danger they go straight to the heart of the matter by collectively gathering at the prayer rocks where incantations are initiated to counter the sorcery causing the. typhoon. Although such behavior appears to be irrational from the perspective of Western Society, it is very consistent within that cultural configuration.

If someone approaches a catastrophic situation from an ethnocentric "blueprint" of his own society, he would fail to grasp the continuity from pre-disaster beliefs and behavior forms in adaptation and change as the emergency phase begins. Cross-cultural studies support the notion that pre-disaster structures continue over into the emergency phase unless universalistic psychological needs and attributes from the culture of external observers are erroneously attributed to those being studied. Even so, the concept of emergent structures has not been a much used concept in cross-cultural comparisons of reactions to disaster events.

Pre-Disaster Continuity Approach

This approach rejects the assumption that social systems collapse at the onslaught of precipitous events necessitating the creation of a new emergent structure. Rather, it claims that pre-disaster social systems anticipate the necessity for "emergency roles" in their repertoire which are deployed when emergency conditions arise, usually by those trained to handle such events but sometimes by those only marginally familiar with them. Instead of focusing on the personal confusion each individual has when impacted by a disaster agent, this approach deals with the problem of deciding when the circumstances call for assuming emergency roles. Following highly volatile situations, critics are eager to point out that emergency behavior was deployed too early and was inappropriate; they are equally ready to criticize those who failed to take the proper emergency steps early enough (if at all) to prevent harm, loss of life, discomfort etc. This approach has strong support in anthropology and sociology literature on disaster studies, although sometimes the narratives showing the continuity from pre-disaster states are ignored as conventional interpretations are given.

The anthropologist Ralph Linton commented on the limited view of an individual in a given culture compared to the total accumulated knowledge of his collectivity.

> While every situation which can confront the individual is, at one point, novel for him, very few situations can arise which will be novel for his society as well. As a member of this society he has access to a store of developed behavior patterns which are adequate to meet almost every eventuality. Even situations of extreme rarity are remembered together with the behavior appropriate to them (Linton, 1945: 93).

In American frontier society, emergency roles of sheriff, nurse, midwife, firefighter were often assumed by persons with little training for the role. But as our system became more differentiated and specialized, emergency roles were then assigned to specific individuals; ambulance drivers, firemen, surgeons, policeman. Occasionally, precipitous situations arise when specialists are not available and

the only alternative available is for someone less trained to assume these specialty duties. Ordinary citizens break into a "burning" house to rescue occupants; a member of an isolated group performs a tracheotomy (a hole inserted in the lower throat to bypass a closed airpipe). In such cases, some cues are confused and emergency roles may not be performed as well as those trained for it. But such activities are neither irrational nor inconsistent with a person's "normal" values. Much of the spontaneous behavior in emergency situations is merely the implementation of emergency or rarely deployed roles which are known prior to the disaster but rarely practiced until circumstances make them appropriate. Such behavior, thought to be spontaneous, is socially structured to a rather high degree when seen as previously learned emergency roles (Berger, 1963: 86, 121).

During the Rio Grande flood of 1958, residents of Villa refused to leave their aged parents or their belongings when warned of impending disaster by military personnel and disaster relief organizations. In former situations, when residents had taken emergency precautions and the flood did not come, they were ridiculed for assuming "emergency roles" when no emergency ensued (Stoddard, 1961: 98, 106-107). Following a mine disaster, workers continue rescue efforts until live men or dead bodies are retrieved, even though such operations often claim additional lives through accidents occurring during the rescue attempt. Yet, miners know that such behavior is expected inasmuch as if they were the ones trapped below, they would have similar expectations of those fortunate enough to have survived (Beach and Lucas, 1960). In wartime, a military aircraft is commanded by the ranking officer, the pilot, while in the air. But if the aircraft crashes, the pilot is no longer the most capable leader in guiding "foot soldiers," employing skills mostly suitable for   air flight. Often, a non-commissioned officer assumes "emergency command" until the crew is safely inside friendly territory.

In extreme cases, cultural taboos must give way for people in disaster situations to survive. Sixteen survivors of an air crash in the Andes mountains were finally forced to eat human flesh (frozen bodies of crew/passengers) in

order to survive that ordeal (Read, 1975). The situation was so extreme that participants were allowed this temporary departure from "civilized norms."

Through different stages of a community disaster, changing "normal" roles for "emergency" ones may have been misinterpreted as the collapse of the social system. Moore, describing a Texas tornado, mentions that as the relief efforts slowed,

...losses became apparent, and persons begin to seek someone to blame for their losses... Old conflicts are remembered and fanned into new life; new ones are created. Instffitutions, even religious ones active in rescue and temporary relief work, are attacked and accused of being heartless (Moore, 1956: 736).

So, as the newly implemented emergency system, with its corresponding emergency role proscriptions, attempts to revert back to "normalcy," this realignment creates nearly as many dysfunctions in coordination as did the initial change from normal pre-disaster expectations to the more functional "emergency" roles. These problems are insightfully summarized by the chroniclers of the Beecher tornado episode.

There is disjunction between the personal expectations for emergency behavior and the community fulfillment of disaster services. This occurs when individuals do not fulfill their expected emergency roles, when "emergency" organizations fail to perform as expected, and when the expected emergency relationships between individuals and organizations are not reciprocally functioning (Form and Nosow, 1958: 76-78,italics added)

This dimension of confusion is further exacerbated by multiple-role conflicts in which occupational, kinship, and relief roles overwhelm personal energy or time resources forcing prioritizing and non-compliance with some expectations (Killian, 1952). Thus, what is often described as a "new emergent structure" is the implementation of the pre-disaster system of emergency roles newly im-plemented.

Kreps (1984,1985; Bosworth and Kreps, 1986) conceptually integrates the two processes of creation of new systems and the implementation of former roles by assigning role-taking (system continuity) and role-making (creating new roles)

behavior to an appropriate "role enactment" scenerio, although possible discrepancies appear in selecting out behaviors which are role-taking and role-making functions. One activity, making sandwiches for large numbers of disaster victims was considered a role-making activity whereas it could just as well have been an extension of making school lunches for the children magnified over a longer work span. But in spite of some nebulous criteria used, this theoretical framework appears to be one in which those who postulate the total collapse of social systems at disaster impact and those perceiving system continuity can be merged and articulated. Efforts to bring these polar approaches into a common framework would enhance the field of disaster studies and strengthen the analytical investigations of the more extreme and precipitous disaster events.

SUMMARY

Without further evaluating the merits of these various approaches and the ideological assumptions or theoretical postulates advanced by their advocates, it is clear that all disaster researchers do not have the same thing in mind when they speak of emergent structures. If the social system collapses at disaster impact, the emergent structure is a new creation. If the system continues and shifts from normal to emergency role behavior, it is pre-existent and continuous through disaster impact. The acceptance of either viewpoint has serious implications for present and future disaster relief planning and relief agency operations. Also, since sociologists and cultural anthropologists are more apt to see the cultural continuity aspects while psychologists and psychiatrists focus on system disintegration and personal resolution of stress, this theoretical impasse in disaster studies may necessitate an interdisciplinary interface which few have wished to acknowledge. But for disaster studies, a multidisciplinary field of scientific endeavor, such discrepancies in basic assumptions and incompatible frameworks are just par for the course.

FOOTNOTES

1- This essay was presented to the Southwestern Sociological Association at its annual meetings (March/April 1989) in Little Rock, Arkansas.

2- A rational plan for the evacuation of Colorado Springs was "scrapped" when a test showed that men would not leave for safety from the office but insisted on going home, and mothers did not leave *from* their neighborhoods but converged on the schools to pick up their children, which prevented the school buses from leaving and carrying their children to "safety." Only plans which reflect behavior consistent with kinship and relief role responsibilities can be successfully carried out when training is a marginal activity for participants.

3- I was an artillery officer commanding a platoon of soldiers during this test at Yucca Flat, Nevada. Informal conversations among the men revealed that they were "playing the game" and reporting lessened anxieties, though few men actually felt it changed their attitudes one way or another. Most felt it lacked the realism of actual combat and was therefore unimportant anyway.

4- If panic means moving too fast or too slow or remaining immobile, it becomes a "label" rather than a behavioral concept with measureable criteria (See Quarentelli, 1952, 1960. Also, Fritz and Marks, 1954).

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