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INTRODUCTION

The sociological literature now available relating to natural hazards and disasters[1] is reaching a significant qualitative, as well as quantitative, level. Research on disasters extends to all levels of societal interactions and social manifestations; to individuals, groups, communities, societies; to organisations (established, emergent, extending, expanding) and institutions. Empirical data is also available on the differing types of interactional/organizational adaptations developed to counter the effects of the myriad natural hazard agents - fires, earthquakes, floods, hurricanes, cyclones, tornadoes, volcanoes. The data-base has also been augmented by research into man-made and technological disasters.

The focus of this review is confined to research material that falls within the following boundaries:

1) Disasters that are relatively sudden in their onset (that is, precipitate disasters);
2) Disasters that have a limited duration;
3) Disasters that are potentially devasting in their effect.

The review is also confined to the following population within the parameters laid out above:

4) Those in the immediate impact area (that is, Wallace's area of 'total impact' (1956)), and,
5) The behaviour of individuals within the area of total impact.

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[1] Technological disasters have also received considerable attention, although this particular area of study has not accumulated the same number of researchers or related reports as the natural disaster literature. It is interesting, however, to note that one of the earliest major sociological works on disaster (Prince 1920) was concerned with social change induced by a technological disaster-agent. For a recent analysis of these disaster types, refer B.A. Turner: Man-Made Disasters, (Wykeham, London), 1978.

DEFINING DISASTER

The word 'disaster' is one of the many 'sponge' words in the English language which encompasses almost any phenomena. When it is used, it often refers to different things. The sociological perspective of a disaster however, is focused on the social disruption within specific communities that are the consequences of socio-economic damage caused by an external agent. Within this broad area of interest, sociological enquiries extend to personal and group behaviour of 'private' individuals as well as role encumbents, and the effects/consequences of a disaster-agent on social routines, social structures and social functions.

Disasters produce a new and different referential framework within which people perceive and judge their experiences. The recurrent crises and accidents of everday life[2] tend to be isolated, random events that produce human troubles and suffering, but do not induce changes in the organization of society.

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[2]On a continuum of collective stress situations, based on the number of people affected, the degree of involvement of the people within a social system, and the disruption of that social system, 'crisis', 'accident' and 'incident' would be at the extreme polarity from 'disaster'. An 'accident' or 'crisis' has the effect of disrupting only a specific interest group, such as an extended group of significant others, and does not disrupt the larger population of the society, and certainly does not disrupt the social infrastructure of that system.

'Emergencies' can be defined as a focalized disruption that interferes with the ordinary ongoing activities of the people involved, plus a wider number of peripheral persons, either by relationship or by chance. An emergency does not disrupt, nor is destructive to the overall social structure or social system processes. The scope of effect in an emergency is wider than that of an accident, yet is not as encompassing as a 'disaster'. A good example of an emergency type collective stress situation is the November 28, 1979 Air New Zealand DC10-30 aircrash at Antarctica. In this example, no system disruption occurred and social disruption was limited, more or less, to the kin/relatives/friends of the aircraft crash victims and the personnel who were involved in both recovery and rehabilitation of the victims' significant others. Although this particular emergency was widely known and reported throughout the world, and was especially significant for the majority of New Zealanders, routine social processes and functions were not affected (Britton, forthcoming).

CONTINUUM OF COLLECTIVE-STRESS SITUATIONS

ARAMETERS: 1) Number of people affected

2) Degree of involvement of population within the 'affected'social system

3) Disruption by the collective-stress agent on the social system

(MORE)  (LESS)

DISASTER	EMERGENCY	ACCIDENT/INCIDENT/ PERSONAL CRISIS
1) Widespread and complete disruption of ALL social processes, social structure, and primary/secondary interactions.	1) Focalised disruption interfering with ordinary ongoing activities of specific people involved, plus	1) Disruption of specific interest group of significant others.
2) Widespread destruction of functional infrastructure (buildings,communications networks, social support networks).	2) Disruption of a number of peripheral persons, either by relationship or by chance (propinquity, role encumbency)	2) No disruption to larger societal population
3) Affects System of biological survival " order " meaning " motivation " crisis management capabilities	3) No disruption/destruction to overall social structure or social system processes.	3) No disruption of social infrastructure
Example: 1931 Hawkes Bay earthquake, 1968 Inangahua Earthquake; 1979 Abbotsford, Dunedin Landslip (?)	Example: 28 November, 1979 Air New Zealand DC10-30 aircrash, Mt. Erebus; 1977 Granville (Sydney, Aust.), train crash.	Example: Car accident; unexpected sudden death; suicide.

B RITTON 1980

Accidents, incidents, and emergencies tend to be routinized within the normative structure of routine social living, but disasters are sufficiently concentrated in time and space to pose a clear, easily perceivable threat to social survival in its broadest context. Disasters affect all persons almost indiscriminately, and thereby produce a temporary breakdown in the established social processes, routines and interactions. Disasters thus lead to societal remedy and collective social change, rather than requiring the individual or small group to bear the burden of readjustment to an intact, unchanged society.

A disaster may be defined as

> "...an event, concentrated in time and space, in which a society or a relatively selfsufficient subdivision of a society, undergoes severe danger and incurs such losses to its members and physical appurtanences that the social structure is disrupted and the fulfilment of all or some of the essential functions of society is prevented".
>
> (Fritz 1968:202)

A somewhat less structural definition of disasters, and one which views disaster as an extreme situation which is implicit in the everyday condition of the population's ongoing social processes and which also views disaster as an extension to the everyday situation, is

> "...disaster is a condition in which the established social life (that is, the routines of social living) of a community, or a section of that community, abruptly ceases to operate effectively as perceived by the inhabitants of the affected social system, or by outsiders, and is severely disrupted through an excess of forces external to that system".
>
> (Britton, 1979:13)

Both of these definitions view disaster as an event that disturbs the vital functioning of a social system, or a part thereof. It affects the system of biological survival by upsetting the provisions of subsistence, shelter, health, and reproduction. It also affects the system of order by upsetting and disrupting the division of labour, the

existing authority patterns, the cultural norms and social roles. The system of meaning is also affected - the values, shared definitions of reality, and communication mechanisms can be thrown into disarray. And, the motivation of actors within all of these inter-related systems are affected to the extent that the socio-cultural system cannot function and operate to any level of complete satisfaction. A disaster situation also suggests that the crisis management capabilities of the affected area has been, or may be exceeded with the existence and utilization of emergency plans and resources within the area being temporarily or permanently exhausted (Britton 1980:3-4).

We need to view disaster not just as a tragedy for the individual but as creating a set of problems for various community organisations, institutions, and social processes and indeed, for the established social system itself.

SOME PSYCHOSOCIAL EFFECTS OF DISASTER ON INDIVIDUALS

It is not easy to find out how disasters affect people. In the best of time our observations of human nature are rarely intensive or systematic. In the alarm, disorder, pain and grief created by large-scale collective stress situations, there have been too many more urgent things to do. It is only recently that research teams have been going into the field to interview victims of disaster and to observe some of the consequences of such events. Prior to the advent of intensive sociological interest and concomitant empirical research into the social effects of disaster, psychologists and psychiatrists had investigated (and reported) the reactions of individuals in disaster situations (refer for example Janis, Powell, Wallace, Wolfenstein, Tyhurst). The universal applicability of some of these reports are now

being questioned by current investigators (for example, Perry and Lindell 1978, Bugen 1977). Nevertheless, much of this early work is still of considerable theoretical and practical value. Four of the more important contributions from the earlier researchers will be discussed below. Following this discussion, and for the remainder of this review, the emphasis will centre on the more 'eclectic' contemporary perspective concerning the individual in disaster.

1) THE ILLUSION OF CENTRALITY

> "At the moment of impact of a large-scale disaster, there is a tendency for each individual involved to think that only he or his house was hit. Under some circumstances this is the most likely assumption, until one gets further evidence. In other instances, the interpretation of the event as focussed on oneself appear to be motivated by distorting subjective factors. Whatever the reason for the initial mistaken impression, certain feelings are apt to be stimulated by the image of the event as centred on the self, which give way to other feelings as one becomes aware of the scope of the disaster. This interpretation of the situation that only the particular individual or his house is the sole target of impact is referred to as the 'illusion of centrality'."
>
> (Wolfenstein 1957:51)

The 'illustion of centrality' applies when the individual mistakenly supposes on subjective grounds that what has struck was more focussed on himself than was actually the case. This type of reaction is frequently reported by tornado victims where their house was imploded due to differential atmospheric pressures. This 'illusion of centrality', however, is not confined to tornado-impacted victims; it is also prevalent in large-scale man-made/technological accidents, and is particularly visible by the relatives of the victims - the Air New Zealand DC10-30 crash of 28 November 1979, is an appropriate example (as are most victims of limited or focalised disasters where there are significant people visible to the victims who have not suffered).

There are several factors that contribute to this illusion. The large-scale event, though nominally recognized, may still be assimilated to the model of more familiar circumscribed accidents. Also, in undergoing a terrifying blow, the individual may tend to withdraw emotional interest from the rest of the world, concentrating it on his own threatened self. The feeling that what has happened is exclusively confined to him may express this constriction of emotional concern, while conversely, the assumption that nothing has happened to anyone else may reflect the temporary lack of interest in others. Idiosyncratic perceptions also contribute to this syndrome: when one suffers a misfortune there is always the possibility that one may take it as a punishment being meted out for sins that were committed prior to the event. Individuals whose locus of control is external are more likely to view the situation in this light.

An impacted victim may undergo a second shock when he discovers that his initial interpretation, based on the 'illusion of centrality' was mistaken. Insofar as the experience of disaster involves a painful sense of abandonment, the discovery that the social environment is in a similar predicament, and is therefore unable to render him immediate assistance, reinforces his feelings of being abandoned.

At the same time, however, the discovery of the extent of the damage may have certain reassuring effects. As one sees others damaged and injured as much, or more than oneself, one may feel a sense of returning or enhanced strength. The discovery that one has not been singled out for misfortune tends to reduce distress.

II) FEELING OF ABANDONMENT

A feeling of abandonment probably plays a major part in the emotional distress of a disastrous experience. The feeling of abandonment, of loss of the protection usually assumed to be present in the persons social environment is likely to be evoked by the impact of a disaster regardless of the specific deprivation which one or another individual suffers. Contact or lack of contact with others, especially significant others, immediately after impact can mitigate or aggravate the feeling of abandonment. The mistaken expectations that others should be immediately available to come to one's aid, based on the 'illusion of centrality', adds to the feeling of abandonment. There has been a tendency by disaster researchers to overlook the feeling of abandonment, stressing rather, the sense of human solidarity following a disaster. While not intimating that solidarity does not become increased, researchers have showed the reluctance of an outsider to put himself in the place of the sufferer. Intolerance and wariness for painful feelings may thus lead researchers and their subjects to collaborate in neglecting certain aspects of a disastrous experience.

III) THE DISASTER SYNDROME

> "Temporary paralysis is one of the modalities of human reaction to disaster. Even in emergency situations other than disaster where damage and casualties are not so complete, a similar temporary paralysis response frequently occurs. Beyond reaction to personal injury and loss, the sudden perception of physical destruction of the natural environment, fellow citizens, and material culture with which one is identified, seems to elicit fundamentally the same paralytic response.
>
> (Wallace 1957:23)

> "It is often reported after a major disaster that many survivors in the impact area are initially found by rescue workers in a state variously described or denoted by such words as 'shock', 'dazed', 'stupor', 'apathy', 'stunned', 'numbed'. In such persons, awareness of the extent and severity of damage to self, family and community, is limited. This perceptual disarray may persist for minutes or hours.
>
> (Wallace 1957:23)

Although rapid recovery from the immediate shock of impact is the rule, a number of survivors manifest what has come to be termed the 'disaster syndrome'. They do not quickly emerge from the stunned condition, but continue to act dazed, withdrawn and relatively immobile; or, if they move about, they do so in an aimless, abstracted way. They are suggestible and passive, and medical workers observe in their docility a striking contrast to the more common querulousness of people who have suffered an ordinary street accident. The syndrome may persist, as Wallace suggests, for hours, not only amongst those who have been physically injured, but also among those who are essentially unharmed. How prevalent this phenomenon is in any disaster remains debatable, since various studies have found this phenomenon to be non-existent in some impacted communities to anything up to one-third of the survivors (Chapman 1962:17). Its cause has been thought to be the sudden, wholesale destruction of the physical and social environment - a conjecture based on the fact that the 'disaster syndrome' has been identified only under conditions of mass disaster and not under conditions of more individualized stress. Whatever its specific cause, and however variable its incidence from one disaster to another, the disaster syndrome is nevertheless a clinical concept with both a 'teasing theoretical interest and some obvious practical implications for managing the care of survivors' (Chapman 1962:17).

Wallace theorises that the characteristics described by the 'disaster syndrome' are the result, partly or wholly of the individual and group perception that 'a part of their culture is ineffective or has been rendered inoperative, and that the person reacts to this perception as if a beloved object were dead' (1957:24). The emotional impact of the perception of cultural damage is as 'shocking' as private loss, according to Wallace.

IV) THE COUNTER-DISASTER SYNDROME

The 'counter-disaster syndrome' on the other hand, is a label that Wallace devised to explain the behaviour and emotional characteristics of those people outside the impact zone, but with close ties to persons in the place of impact. Empirically, this syndrome seems to be particularly applicable to the rescuers who were outside the area of impact, but who have personal connections to the impacted area or its peoples (this behaviour was especially noticeable in the voluntary rescue workers in the Abbotsford landslip incident, Dunedin,August 1979).

The essential characteristics of the 'counter-disaster syndrome' are over-conscientiousness and hyperactivity; the responsible mechanism is a defense against feelings of guilt. According to Wallace, fewer observations have been made of the counter-disaster syndrome partly because many of those who are in a position to describe it are suffering from it, and hence are rather defensive in the presence of interviewers (Wallace 1956:142).

In its initial stages, the 'counter-disaster syndrome' seems to be characterized by extremely vigorous activity oriented towards rescue, first aid, the making of a contribution of some kind. Certainly, there is nothing pathological in activity aimed at helping survivors of a disaster; the quasi-pathological quality appears when this activity is, despite the enthusiasm of the helper, relatively low in efficiency and is unduly 'panicky' (sic), or hyperactive and less rational than normal.

THE CONTEMPORARY PERSPECTIVE

Most disaster researchers in the early years of the study had based their investigations on the proposition that any psychological disorder is the outcome of stress caused by disaster. Although stress is an important integrating concept, the study of stress crosses the boundaries of many disciplines and may flow on different levels of analysis. For the most

part, however, researchers have not given much explicit attention to integrating other disciplinary perspectives which has made it difficult to draw upon the results of related stress research. In turn, this situation has produced the problem that natural disaster and long-term stress have unjustifiably been coupled in a causal sequence. The new focus on disaster research does not adhere to the 'natural disaster = stress' with such determinism. Natural disasters cause alterations in the impacted social system which in turn require elements within that system to adapt to different demands (see Wenger et al, 1978). In this context, stress can be understood in terms of the interactions which occur between the altered social system and its adjusting components (Perry and Lindell 1978:102). Thus there is an intermediary sequence in the consequences between disaster and psychological consequences. This perspective sees disaster as a contributory cause to psychological stress, as one of a number of factors which together determine psychological consequences.

This disparate position is gaining widespread acceptance among social scientists engaged in disaster and hazard research. The new orientation has swung away from the previously accepted perspective that is still held by psychiatrists (Perry 1979:173) who regard that natural disaster constitutes catastrophic life events which produce adverse psychological reactions amongst victims. These reactions are seen as problematic both immediately post-impact and throughout the long-range, possibly encompassing a period of several years or perhaps the victims entire remaining life span. What empirical support available for this perspective came initially from psychiatric interpretations of natural disasters (e.g. Powell 1954, Tyhurst 1952, Janis, 1954, Menninger 1952).

The alternative position which is supported by sociologists and psychologists (Perry 1979:173) suggests that although some individuals experience adverse reactions to natural disasters, the extent of negative consequences has been greatly overstated. It is acknowledged that psychological reactions frequently occur in the short-run (to a maximum of a few weeks post-impact), but these researchers argue that apparent long-run reactions are infrequent and probably a function of a variety of factors among which disaster impact is only one. This position is based on more empirically-substantive findings than the former position.

There is fairly solid evidence that there is almost no likelihood of mental illness in the wake of the typical disaster in the western world. However, there is some scattered work suggesting that the truly massive catastrophe may have somewhat different consequences on mental health than the typically moderately-sized disaster. Erikson's study of the total annihiliation of the towns at Buffalo Creek, West Virginia, 1972, after 132 million gallons of debris-filled mud burst through a 'dam' destroying every house and killing at least one member from each family, literally stamping out the established social fabric and the interpersonal networks, suggests that a qualification must be added to the increasingly accepted generalization that mental health does not automatically eventuate from disaster. It must be stated, however, that the Buffalo Creek disaster is atypical in the magnitude of devastation and social disruption (see Erikson 1979).

The high degree of individual variability in behaviour during a disaster makes it very difficult to distinguish between reaction stemming from factors common to an entire population (such as the nature of the disaster, social composition of the community), and highly individualised factors (such as previous disaster experience, personal psychological

stability, the social situation at the time of the disaster). While reactions to a disaster vary considerably from individual to individual and from one type of disaster to another, certain 'modes' of reaction can be distinguished.

Two factors which are characteristic of individuals are particularly important in understanding the psychological consequence of natural disasters. These are (1) pre-impact psychological stability and (2) grief reactions.

In general, if an individual is psychologically unstable BEFORE disaster impact, he will remain so AFTER impact. Thus we arrive at the situation in relation to the Air New Zealand DC10-30 aircrash whereupon the victims significant others who required psychiatric intervention (and some still are, A. Muir, personal communication 29.09.80) are those with a history of psychological instability (refer also V. Taylor, 1977).

Perhaps one of the most prominent sources of psychological disorder is the death or severe injury of a significant other. In the case of natural disaster where death/injury can occur during a very short time-span and may be witnessed by significant others, the psychological consequences for survivors and significant others may be tremendous. One of the few psychiatrists who has developed a theoretical model for understanding human grief reactions, Bugen (1977), contents that the intensity and time duration are important components in understanding individual grief reactions. In this model (refer Diagram #I), the closeness of the survivor's relationship to the deceased, and the survivor's perception of the preventability of death are important determinants of grief reaction. Accordingly, if the relationship is central, or is perceived by the actors as essential, and the death was unpreventable, as may well be the case in natural disasters, the grief reaction may be intense but brief in duration. On the other hand, if the relationship was central and the

DIAGRAM #I

TYPOLOGY OF GRIEF REACTIONS BY CLOSENESS OF RELATIONSHIP AND PREVENTABILITY OF DEATH

CLOSENESS OF RELATIONSHIP	CLOSENESS OF RELATIONSHIP	
	PREVENTABLE	UNPREVENTABLE
Central Relationship	Intense and prolonged reaction	Intense and brief reaction
Peripheral Relationship	Mild and prolonged reaction	Mild and brief reaction

(adopted from Bugen, 1977)

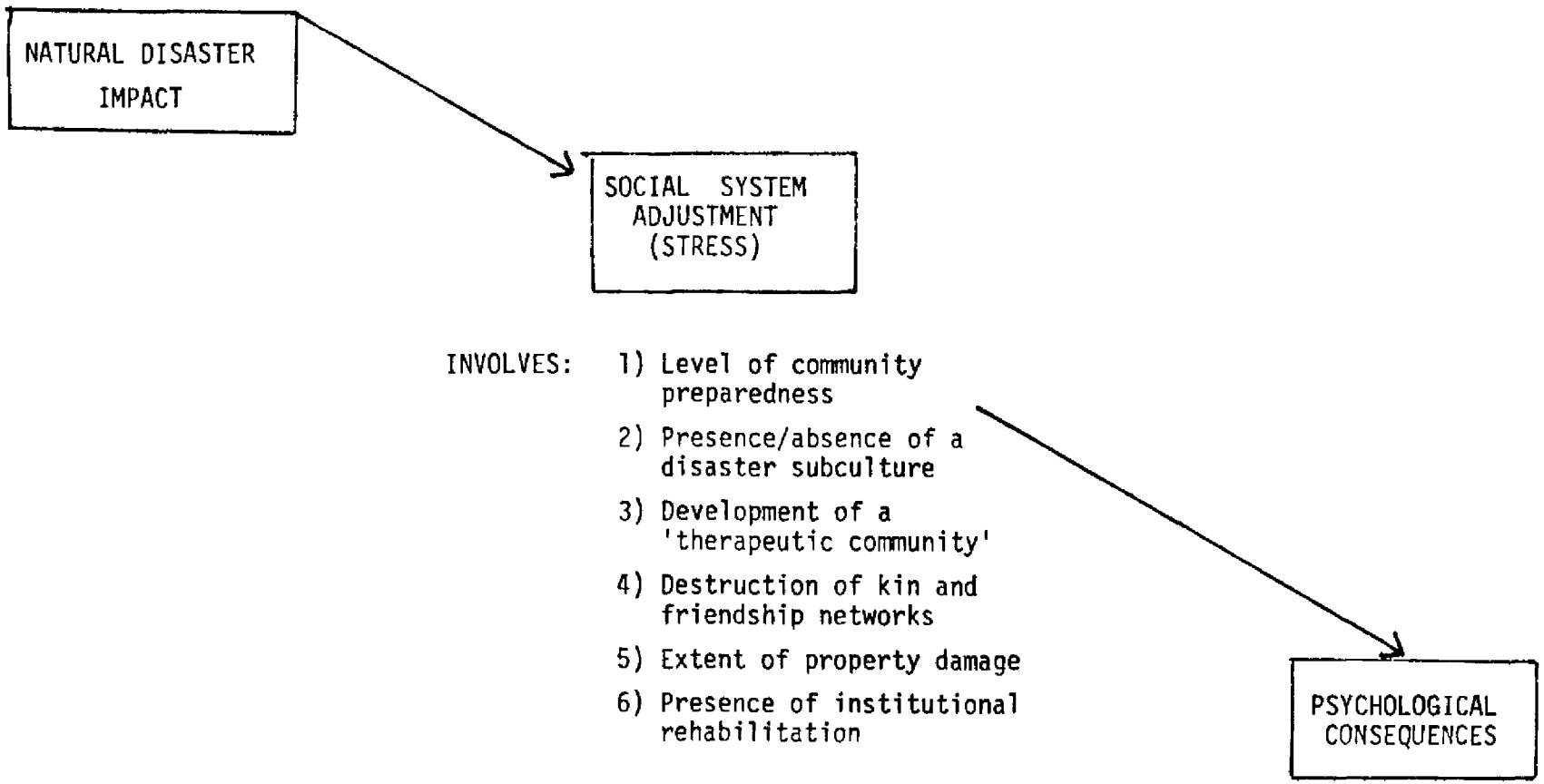
death was seen as preventable, as may be the case in man-made/ technological disasters/accidents, the grief reaction will probably also be intense but be more prolonged in duration. Peripheral relationships, on the other hand, are more likely to exhibit milder grief reactions, although the prolongation of grief will vary according to whether the death was viewed as preventable or not.

What this model suggests for disaster research is that one must assess the nature of the relationship and perceptions of preventability to understand a survivor or a significant other's psychological reaction. The concept of grief reactions to different intensity and duration begins to offer some light on psychiatric studies which offer conflicting claims about the longer-term psychological consequences of exposure to disaster deaths. When one takes Bugen's model into account, the fact that some survivors suffer longer-term disturbances than others becomes more explainable (see Perry and Lindell, 1978:111).

On a broader level, a natural disaster impact alters the nature and quantity of 'inputs' to a social system, thereby producing changes in the nature of the 'demands' made upon the constituent elements of the system. The 'demand-adaption model' (Barton 1969) has been widely used in studies of natural disaster and appears to be effective whether the focal system elements are individuals, families, established organisations, emergent organisations, communities, or total societies. This perspective does not equate natural disaster with stress, but suggests that natural disasters cause changes in the social system which, in turn, require system elements to adapt to different demands. In this context, stress can be understood in terms of the exchanges which occur between the altered social system and its adjusting components (refer diagram # II). This also introduces a time factor as a further variable in the equation

DIAGRAM # II

RELATIONSHIP BETWEEN DISASTER IMPACT, STRESS AND PSYCHOLOGICAL CONSEQUENCES



(Adapted from Perry and Lindell, 1978)

necessary to understand behaviour in a disaster situation. What makes time a factor in postdisaster individual behaviour, and probably accounts for the variability of 'stages' of disaster reaction, is the social availability of, and the psychological capacity for restructuring activity. Apart from creating individual disorientation and disruption, a disaster also disrupts the existing social processes, routines, and networks that have been established, and internalized by societal members as being available in time of need. In a situation of system overload, as in the case in a disaster, the established social support networks are likely to break down because of the disruption to facilities, role encumbents, and communication facilities, thus causing the efficiency of these support systems to be less than optimally effective (refer Diagram #III).

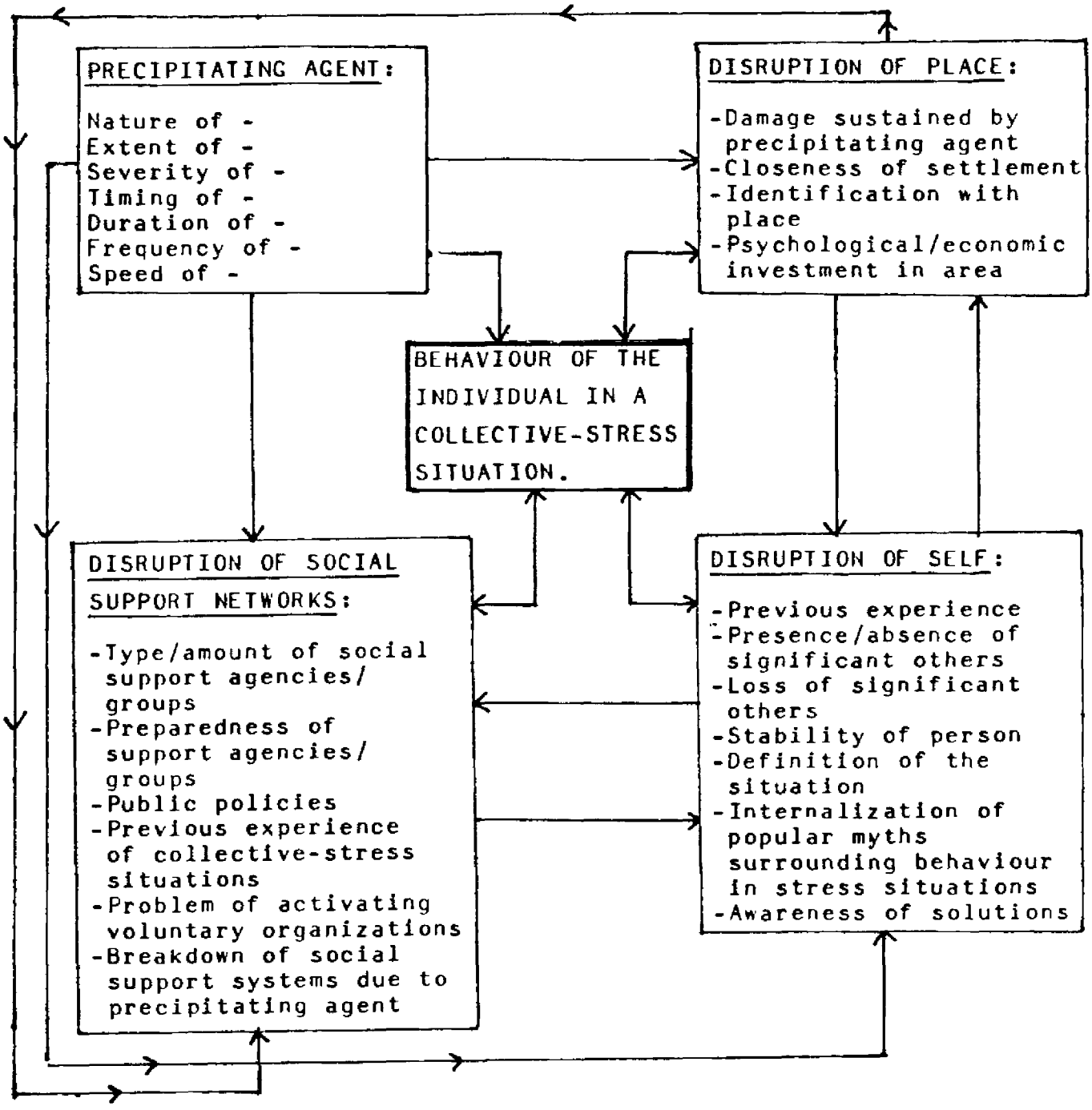
Adding the disruption of the societal support networks to the already disrupted individual within the impact area, who has to try and regain an equilibrium state in a new, unfamiliar, and probably terrifying social environment, individual upheaval is exacerbated. The impairment of self, place and social support systems combine, in some cases, to overburden the individual to a non-coping position. Wilson, however, (1962:131) states that this is not a universal concomitant: there is some evidence that disaster experience constitutes for some people an 'optimal stress' which promotes active mental harmony rather than psychiatric disorder.

THE INDIVIDUAL AND THE DEFINITION OF THE SITUATION

Disaster studies based on social science findings suggest that persons live in a dynamic or active equilibrium with their environment, both in physical and social-psychological contexts. The specific boundaries of each person-environment equilibrium are defined by individual development and experience, by social custom, and by a sustaining network of living

DIAGRAM #III

FACTORS INFLUENCING THE REACTION AND CONSEQUENT BEHAVIOUR OF AN INDIVIDUAL FOLLOWING A COLLECTIVE-STRESS SITUATION



N.R. Britton
1980

relationships. Within this system there is a balance between security and novelty. Too much of the same old thing produces dullness and boredom, causing persons to seek out novelty and new sources of stimulation. Too rapid a discrepant departure from the familiar arouses fear and anxiety which motivates defensive reactions, including a rigid return to early and well-established behavioural patterns, and amy also create confusion to the point of being unable to cope or operate effectively. Disasters are, of course, extreme departures from the familiar. It is their extremity which accounts, in part, for the psychological stress they arouse, as well as for reactions in which persons exacerbate the situation, and/or distort reality as they attempt to assimilate the novel or unknown to familiar and well-established patterns. Stress is also aroused by the obviously threatening nature of the disaster-injury, potential loss of life, harm or loss of significant others, destruction of property, destruction or impairment of psychic investment, and the like. These sources of threat also arouse anxiety and produce defensive reactions of various types.

One important perspective to understanding individual reaction to disaster is to try to understand what the individual is reacting to: that is, how does the individual perceive the disaster event, and what does it mean to him? This orientation leads the researcher to develop an understanding of the individual vis a vis the disaster event as it relates to that individual's past experiences, his purpose, and his experientially-based estimate of his own capacities to act effectively.

The personal and collective definitions of a disaster strongly influence the response to it by the victims as well as by outsiders. The attribution of causality and responsibility which defines the disaster as externally caused rather than the fault of the impact-victims generally leads to a positive coping effort, and to positive welfare-giving and

therapeutic responses from others. The personal reactions are generally constructive, and only temporarily disorganized (Britton 1979).

It is not clear exactly what processes are involved in sustaining and dealing with stress, in 'coping', 'surviving' or 'getting over it', nor what are the mental sequels (Kinston and Rosser, 1974:451-2). What is threatening to a particular person which may cause psychological disruption depends on the amount of psychic pain, and the amount of painful affect that individual can withstand at the moment he is subjected to the threatening situation. The intensity and quality and psychosocial reactions to disaster vary with the individual personality structure, his past experience with disaster, the degree of physical damage to significant persons and property, and his opportunity to define the situation in a way with which he can cope. If a person interprets a disaster situation as one in which he can overcome, 'ride out', or be useful in, the probability seems that he will suffer little, if any, psychosocial impairment. This orientation is furthered if the individual has had previous experience in life-threatening situations, or if he has had prior training or insight into the likely consequences. He is thus better equipped to withstand the trauma of the disaster. If, on the other hand, the individual interprets the situation as being one out of his hands, that there is nothing he can do to mitigate the changed social environment, that the situation is defined as one in which nothing but futility, destruction, and doom is present, psychological impairment may be heightened and/or prolonged.

PHYSIOLOGICAL REACTIONS

Many individuals, after impact, temporarily experience certain acutely unpleasant feelings and disturbances which are generally disabling. These may be manifested by such specific behaviour as:

1) Increased muscular tension - this includes tightness of abdominal muscles, a momentary 'freezing' of all muscular activity, occasional gross shaking or trembling of any or all parts of the body, temporary speech difficulties and inability to sleep soundly.
2) Increased bodily responses - included here are excessive sweating, poor appitite, nausea and vomiting, diarrhoea urinary frequencies, and shortness of breath.
3) Psychological manifestations - this may involve increased sensitivity to noise, apprehensiveness, irritability, transient apathy, temporary feelings of hopelessness, tearfulness, and sometimes moderate euphoria (Goldstein 1960)

These psycho-physiological reactions are all considered to be normal reactions. It is only when they persist that they are considered abnormal.

To summarize the psychological/physiological reactions to a disaster three main points should be kept in mind:

1) Most of the emotional reactions that are displayed by impact-survivors are 'normal' under conditions of acute stress;
2) They are usually temporary and pass off within hours, days or weeks, and,
3) They generally do not lead to chronic mental illness in the form of neurosis or psychosis.

These are essentially the findings from an overwhelming majority of studies conducted on natural disasters, bombings, and atomic explosions. Nevertheless, 'normal' psychological disturbance constitutes a major problem in collective stress situations because they hinder rescue, salvage,

and recovery operations. They may overload the already congested first-aid and medical facilities and the communication-evacuation channels, and they may become more serious and persistent if recovery processes are not set in motion quickly after impact (Beach 1967:32).

THE PERPETUATION OF MYTHS SURROUNDING BEHAVIOUR IN DISASTER

It is evident that a major source of many of the myths that are internalized by people who should know better concerning disaster response is the mass media, and the self-fulfilling diagnoses of some medical/mental health professionals.

Quarantelli and Dynes (1972:70) observe that media accounts are anything but accurate with respect to conveying the extent of physical damage, human loss, social disruption, or individual and group reactions resulting from a collective stress situation. 'Reporters have images of what should happen in a disaster, and in the absence of contrary evidence they report these images' (Quarentelli and Dynes 1972:70). Part of this problem may lie in the fact that news reports focus upon the unique and isolated event of a disaster but present them as if they were typical. In the case of mental health professionals, it is also the case that diagnosis of a person's predicament or situation following disaster is not so much what has happened or what is happening to the survivor, but what the professional expects or anticipates will happen or has happened to that individual. In other words, it is often the case that the professional applies the wrong frame of reference to the situation in which the distraught survivor now finds himself in and in which the mental health professional tries to ameliorate. The question that needs to be asked, but seldom is, is: "Does this particular person need or require professional assistance?" In the early days of psychiatric

intervention relating to collective stress situations, this question was not even asked, let alone answered, partially because the accepted equation went something like 'disaster=psychological disturbance= psychological/psychiatric intervention'. Unfortunately, there are still some who consider this sequence as the only one, and are unfamiliar with the broader context which has to be considered and understood before intensive psychiatric intervention is implemented.

Some examples of the types of presumed behaviour that have been perpetuated by these two groups of role performers, that is, the news media and mental health professionals, are:

1) The widespread belief that the 'disaster syndrome' is a direct concomitant of any disaster situation (refer Raphael, n.d. p. 1).
2) The notion that natural and technological disasters bring not only grief and suffering, which they obviously do, but also more bizzarre and pathological behaviour as 'panic', acute neurosis, tormenting memories and guilt feelings over survival; the expectation that many of the victims can be expected to drink more or increase their intake of drugs.
3) That looting and other criminal deviance will be widespread, and necessitate the utilisation of considerable numbers of security personnel to guard property.

This conventional wisdom about human reactions to natural disaster and man-made/technological disaster has been increasingly challenged by recent research in this area, which negates the veracity of the examples

above being direct concomitants in most natural disaster situations. What research over the past decade suggests is that the widespread belief among people of what a disaster does to the individual psyche is grossly over-estimated, in many cases empirically unfounded, and in almost all cases is widely exaggerated.

THE INDIVIDUAL IN DISASTER: TWENTY CONCLUDING FINDINGS

Several conclusions appear in the literature about victim response to massive collective stress situations (see Mileti et al 1975:57). These will be enumerated below:

1) Most human beings act in quite controlled and adaptive ways in the face of new and extreme stresses which they face during a large scale disaster.

2) Controlled withdrawal - that is, when the withdrawal is not merely escape from the danger but movement toward a goal - is more common than panic.

3) Uncontrolled flight - or panic, as it is referred to in the popular mind - is very rare in disaster situations, but among those who do exhibit this tendency, it is almost exclusively those with no dependants.

4) Those individuals who are in the impact area and who are uninjured or have relatively minor injuries define as their first task helping those who are most important to them.

5) Those who lived in the area and who are not directly in the impact zone at the time of occurrence experience a great deal of conflict as to what courses of action to pursue.

6) People usually underestimate the scope and destructiveness of a disaster.

7) People usually particularize and personalize the disaster to think of it as happening only to oneself and as being confined to one's immediate environment.

8) People usually use 'denial' - they do not admit that they were hit by the disaster-agent too badly.

9) Drastic events seem to have a narcotocizing effect which temporarily prevents the person from comprehending the extent to which his world and his position in it have changed.

10) Severe emotional disturbances are relatively infrequent in disasters, but psychosomatic after-effects are almost universal.

11) Normal disaster reactions (e.g. muscular tension, psychological manifestations) clear up quickly; the more stable and integrated the pre-disaster personality, the more favourable the recovery and the quicker it occurs.

12) The incidence of physical reactions after the emergency period (e.g. upset stomach, headaches etc.) correspond closely to the assumed degree of stress.

13) Impact women with dependents are statistically more likely to show a significant amount of non-adaptive behaviour immediately after impact.

14) Maximum social and psychological disruption will emerge from disaster events characterised by (a) suddenness, (b) high uncertainty, (c) prolonged duration, (d) a broad scope of physical destruction, death and injury, (e) disasters which occur at night, (f) and wherein victims experience much exposure to dead and badly injured individuals.

15) Persons separated from families during a disaster have slightly higher frequencies of emotional difficulty than persons not separated.

16) Older persons are more likely to become physical casualties and experience more intense sense of deprivation than younger ones.

17) Persons who have had past experiences with disasters can better cope mentally and behaviourally with future ones.

18) There appears to be a tendency for individuals involved in disasters to regress towards previously learned skills and become somewhat non-adaptive.

19) Altruism,affection, co-operation and group solidarity are characteristics of persons following a disaster impact.

20) As fear subsides, there is a need for the survivors to discharge anxiety, and it can result in family fights and temporary anti-social behaviour.