



## The Initial Human Behavioural Response to Rapid Onset Natural Disaster: Earthquake

\* S.S. Patil \*\* K.L. Karkare \*\*\* I.B. Ghorade

\* Department of Environmental Science Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

### ABSTRACT

*Many groups and agencies have a vital need of accurate information on how people behave during disaster. Among the subject discussed is the problem of how to clearly understand the behaviour during rapid onset disaster-earthquake and the immediate post impact period. Conclusive social and behavioural science research over decades has established that the behaviour of individuals during disaster, is on the whole, controlled, rational and adaptive; despite popular, misperception that people who experienced a disaster are dependent upon and problematic for organized response agencies. This research paper aims at removal of this misconception and discusses that human behavior response during rapid onset natural disaster-earthquake is rational, adaptive and controlled.*

**Keywords : Vital, Sudden onset, peacetime, behavioural, rational, removal, misconception.**

### Introduction

Earthquake is rapid onset natural disaster that strikes a community. How do human being behave in such situation? According to a pervasive popular conception, disaster victims panic, trample each other and loose all sense of concern for their fellow human beings [Clarke, 2002]. After panic has subsided they turn to looting and exploitation, while the community is rent with conflict. Large number of people are left permanently deranged mentally. This grim picture, with its many thematic variation, is continually reinforced by novels, movies, radio and television programs and journalistic accounts of disaster [Keating, 1982].

### Material and Methods

The present research paper is based on the survey of research articles that specifically aimed at initial human behavioural response to rapid onset natural disaster – Earthquake. The material is also collected from the Books, Periodicals, Conference and Seminar reports. The material collected doesn't refer to a specific earthquake disaster of selected geographic area, time period, magnitude and Socio-economic parameters. Conclusion of the paper is generalized in nature and pertains to immediate behaviour response to rapid onset natural disaster namely earthquake.

In 1950, a concerted effort to study human behaviour during disasters in a systematic way began. Since that time, there have been numerous opportunities to test the adequacy of these [panic, trample and loose senses] popular conceptions, as well as the more scientific hypothesis relevant to behaviour under condition of stress and crisis. As a result a large number peace time disaster studies have taken place. There is now emerging a clear, more fundamental understanding of the typical human behaviour response to disaster [Mileti, et.al; 1975].

The article reports and analyses some of the more silent general findings of these peace time rapid onset natural disaster-earthquake. In making selection from the total range of findings contained in the many research studies, currently available, I have been guided by: first, since much of the current thinking about disaster behaviour is based upon observation of the unusual, the dramatic and the abnormal. Now, it is a hoped to supply a corrective information by emphasizing, the more general, typical and recurrent forms of behaviour found in earthquakes disaster [Quarentelli, 1989].

### Results and Discussion

An effective warning message must be clear and specific. If

it is vague or ambiguous, it leaves the individual with a many choices of action as he had before, it will be almost certainly ineffective [Klausner and Kenacid, 1956]. During Loma Prieta earthquake in 1989 [USA] human behaviour studies showed that 55% of those in the Santa Cruz [USA] who reported damages to their homes did not evacuate and only 15% of those who reported no damage did evacuate [Boursque, 1997]. People are reluctant to accept and act upon warning of those dangers which they don't directly perceive on immediate and personal. This is not intended to mean that effective warning is impossible.

When earthquake danger is recognized as imminent and personal, people seek safety by flight, by taking shelter, or by combating the disaster agent. One method of survival is flight, "Flight" does not necessarily mean "panic," or uncontrolled flight. It is more often orderly and controlled, with people continuing to think of others and continuing to use critical judgment. Often is the only rational choice individual or group can make if they wish to live [Sime, 1980]. The most universal impulse is to run, even when already outdoors [Drabek, 1986]. During the actual impact of the disaster agent, people try to stay alive and protect their immediate associates. Even during hectic, violent impacts many people continue to act, when they can with reference to other people in the immediate environment, particularly loved ones. The extreme importance of the family group in disaster is revealed in the period of threat and impact and it continues through the disaster.

Survivors of disasters have characterized their behaviour and that of others as "panic", when what they are really experiencing or observing is rational behaviour based on fear [Clarke, 2002]. It is appropriate to experience fear in a crisis, and fleeing from a disaster is often the most rational course of action [Quarantelli and Dynes, 1972]. Panic, on the other hand, involves irrational, groundless, or hysterical flight that is carried out with complete disregard for others. Most people evacuating in a disaster assist others to get away, for example Denver floods, Colorado in 1965 [USA] [Takuma, 1972].

Panic is rare, when panic does occur, it usually involves few persons, is short-lived and not contagious. A number of systematic studies of human behaviour in disasters have failed to support new account of wide spread panic [Fisher, 1998]. The research makes difference between panic and behaviour that was dysfunctional. It is pointed out that dysfunctional behaviour was usually not caused by irrationality but resulted from occupant's attempt to deal with uncertain information in

a rapidly developing emergency [Canter, et.al; 1980].

Although most persons may be temporality stunned, confused and some what disoriented after impact, other usually regain sufficient self control within a brief time to extricate themselves, if they are physically able and assist family members, Kin and Kith neighbours and friends [Turner and Killian, 1987].

The modal behaviour at the time of the sudden onset disaster such as earthquake was to freeze in place or seek protection, but responses were modified by a respondent's location and companion at the time of the earthquake. Those who were with children during the earthquake went to a child. Running away during or possibly, immediately offer the earthquake is the most often reported behaviour response, especially by persons who were in public places. During the Whittier Narrow earthquake in 1987 [USA], self reported fright was associated with seeking cover & protection [Goltz et.al; 1992].

The response by the affected people is immediate, spontaneous, loosely organized and represents what social scientist have described as a transformation of social relations from routine to urgent, from normal self-interested actions to an emphasis on community survival, from recipients of emergency assistance to providers of assistance and a new set of distant or specific norms that guide human behaviour in a crisis [Mileti, 1999; Barton, 1969].

The presence and identity of others proved to be an important influence on immediate response in the earthquake. Those who were in the presence of dependent children when the earthquake occurred were more frightened than those who were alone or with other adults. Remaining in place [Sideration] which was the behavioural choice of majority of Loma Prieta and North Ridge earthquake in 1999 [USA] respondents, particularly older ones, was quite rare [less than 5%] among those who were in the presence of dependent children [Goltz, 2006]. Literature on disaster mythology noted that people caught in disaster situation, such as raging five and sinking ships, are consumed by panic [Goode and Ben, 1984] point out, recent research "has shown that, in the face of disaster, most people don't engage in the barbaric, selfish, unthinking, emotional and offer self destructive behaviour as depicted in the media. Contemporary disaster research has found that immediate 'Panic' response to threatening situation is quite uncommon. Instead responses typically develop sequentially over a period of time [Tong and Canter, 1985].

Looting is perhaps the most popularly expected behavioural response to natural disaster. However, very few cases of looting have been documented following natural disasters, in contrast to civil disturbances [Quarantelli and Dynes, 1970], but survey continue to indicate that the public believes in the looting myth [Wenger, et.al; 1980].

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In studying disaster related human behaviour, the National Research Centre [NRC] found that almost all pre event and post event activities were centered on helping people rather than preserving property [Quarantalli, 1988].

During Earthquake in Luzon in 1990 [Philippines] stampedes were caused by panic among the students and some teachers and considerable members were injured as a result, but this underlines the need for earthquake drills [Roces, 1992].

## Conclusion

The social studies of behavioural response, suggested that response to a rapid onset natural disaster like earthquake was active rather than passive and adaptive than maladaptive. The finding of research paper support both of these generalizations. Regardless of where people were located at the time of the earthquake, some form of physical movement from one location to another is highly silent. It is found that self protective measures taking cover or avoiding hazard at home and work place and pulling to the side of the road, if driving were a modal responses. It is found that self protection during the earthquake was not universal phenomena and there are a number of behaviour recorded which are of concern to disaster managers and planners.

Fear as a response to a sudden onset natural disaster appear to contribute to a definition of the situation threatening to self and others, triggers certain learned responses which are survival oriented. The propensity toward self protection appear to intensify when high level of fear interact with environmental and demographic factors such as better educated, being in the presence of other, having experienced previous earthquakes and some racial features like white or Mexican-American [Goltz, et.al; 1992].

The study concluded that the moving away [distancing] is to ensure the protection and survival of oneself or close relative. Often travel is in groups, sometime under the authority of a leader and by the interplay of individuals actions. Following is the constellation of behaviour noted when came into contact with sudden onset natural disaster earthquake viz: Flight or fight against the effects of the disaster, forced immobility [Buried Under Collapsed building], chosen immobility [refusal to evacuate], sideration [inability to react], confinement or shelter [travel to get home or get to shelter], collecting close relative [generally within a short distance], curiosity, grouping, assistance rescue and ensuring public safety. Such behaviors are responses that are adapted to the disaster impact that change the population's vulnerability [Alexander, 1990].

It is more effective to learn what people tend to do naturally in disasters and plan around rather than design plan and then expect people to conform to it.