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ANOTHER STEP TOWARD
A SOCIAL THEORY OF DISASTER*

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Since the first systematic social study on disaster, the "Halifax-Explosion" by Prince (1920) and the study by Carr (1932) on a general disaster-stage-model, the sociological research on disasters has mushroomed not only linearly but exponentially (Quarantelli, 1978: 2). To a certain extent, this growth might have been induced by the auto-dynamics of academia (see Kreps, 1979; Quarantelli, 1979), but in the main it reflects the fact that the traditional modes of explaining and coping with disasters had become meaningless and insufficient. "Modern" societies, characterized by perpetual social change and cultural development, were facing the need for new modes of explanation and better ways of coping with disasters. The reasons for this need are described by B. A. Turner:

> First, the increasing size of the world's population, and the tendency of this growing population to concentrate itself in major centres increases the likelihood that any natural event such as a hurricane, a flood or an earthquake will adversely affect a large number of people. Secondly, the sources of energy which men control and which possess the potential for the creation of man-made disasters, are coming under the authority of centralized bodies and organizations, and are thus increasingly vulnerable to misuse if major errors are made at the centre. Thirdly, the kinds of energy which man now makes use of are inherently much more destructive than those which he has traditionally controlled. Finally, man has begun during the twentieth century to intervene more frequently and on a larger scale in the processes of the environment which supports him, so that the possibility that he may upset some balance of the natural forces to provoke a disaster becomes a very real one. (Turner, 1978: 1).

So taking all of these factors together, it seems obvious there is a need to reconsider the phenomena of "disaster" so as to gain a greater and broader knowledge of the circumstances which precede and surround disasters.

In tracing the history of social change and development, and of these circumstances in the 20th century, however, one confronts a sudden and violent barricade: the threats of World War II blocked a truly sociological understanding of what disasters are, what their history is, and what their causes and their conditions might be. This war, starting the "age of the mega-deaths" (Williams, 1954: 5) initiated a very special mode of disaster research which has affected the subject up until the present time. In the face of uncertainty about how the U.S. might, or should function if a war — especially a thermonuclear one — would be brought directly into the country, research became focused on the every-day sense of the term "disaster" as a rapidly striking agent, which interrupts or even destroys the "normality" of human institutions (see Dynes, 1975, 1976; Westgate and O'Keefe, 1978). Such a perspective is understandable, given a realistic concern about bombing and atomic weaponry (Janis, 1951), but it is no sociological approach to "disaster". It is rather an "ad-hoc" and pragmatic starting-point to answer specific questions in an hour of national danger. J. W. Powell realized that problem when he said ironically and with self-criticism: "If we had dropped nerve gas or a violent toxin on Japan, what would our focus of study be now?" (1954: 61)

To speak more generally, we have to become aware that there is no concept of what disasters are in sociological terms. Of course, there are several dozens of different definitions. But, as Westgate and O'Keefe have pointed out, they merely rationalize the specific interests of those who are defining what a disaster should be in terms of their actions and needs (1978: 57-60). Even today, nearly every definition of "disaster" assumes disaster as an "entity in itself", i.e., as an "event", an "agent", or a "force", which produces special effects on people, groups, or communities so that no alternative is given than to respond to such an "event". In effect, "disaster" is something (or even someone - see Sofue, 1972) from the "outside", striking into men's beloved "normality". The outcome of such an approach is a remarkable distinction between the numerous theoretical work and research emphasizing the social frictions after a so called "event" (see the critique by Quarantelli, 1981) and the lack of marking what the term "event" means sociologically. In polemic words, this distinction marks the "blind spot" of the main-stream sociology of disaster, which uses these terms only as "code-words" to start their analysis of all the response activities coming after the event. Consequently, these approaches are perpetuating a perception of "disaster" alike the ancient imaginations of catastrophies as evil spirits and demonic animals (Sofue, 1972). Such a type of approach, I hope, should alarm every sociologist. What happens to our scientific traditions, our tradition of enlightment, when we fall behind such "animistic", or pseudo-natural, or even supra-natural assumptions? Are we really striken by an earthquake, for example, or did we simply fail to deal with the fact that living in earthquake threatened areas should be different from living in a "safe" area? Again: Are we really striken by a "natural law" when our steam engine explodes, or did we only misuse that natural law?

Such questions are not new; even fifty-five years ago, Carr stated:

> Not every windstorm, earth-tremor, or rush of water is a catastrophe. A catastrophe is known by its works; that is to say, by occurrence of disaster. So long as the ship rides out the storm, so long as the city resists the earth-shocks, so long as the levees hold, there is no disaster. It is the collapse of the cultural protections that constitutes the disaster proper. (1932: 211, emphasis added).

So, my point is only this: Our basic concepts of disaster are unsociological ones. Of course, in some cases this idea is suggested or implicit (see Mileti et al. 1975). Yet is overshadowed by an immense amount of sociological paradigm like stress theory, behaviorism, conflict-theory, role theory, etc. In my point of view, this might be the most important reason of the insufficiency of the sociology of disaster to develop better explanations and modes of coping with "disasters".

This insufficiency, I think, can be supported by analyzing the post-war demands on disaster research and the resulting solutions. At first, the military as well as the politicians wanted to know how much destruction an American community could take and still survive (see Fogleman, 1958: 1). In military terms: how long will a society support their forces; and in political terms: how long will a society bear all the burden before revolting or sabotaging? Later, during the era of the Cold War, the internal rivalry between the military and the Civil Defense Administration changed the perspectives of the

demands on disaster research. Problems of organizational stress, civil disaster relief and collective behavior came into the focus. To be generous, the whole history of the sociology of disaster is not yet written, but to point it out ironically again, many facts will prove that the post-war sociology of disaster was (and still is) sailing under the wrong flag. (see Cisin and Clark 1962): Many of the existing theoretical concepts and paradigm were only transferred to "something called disaster" without clearing up what "disaster" substantially means in terms of the theory used. Therefore, many theories seem to be only a mutation to the different problems generated by "disasters," unable to explain why this host being mutated lives.

To my eyes, the curiosity of the sociology of disaster was and still is in some parts that the practice of disaster relief answered its questions earlier than did research programs waiting for long-turn validity. So, knowing from their internal reports that there is no mass panic, no real irrationality, no real disorganization, no severe rioting, no remarkable looting, and so on, military, political and administrative authorities did not need much further research on these problems. Two decades later, when the reality changed dramatically once again, with chemical, nuclear, and environmental hazards coming to the surface, many academic disaster researchers were still occupied with the same problems they had been examining since the war, or, else they were trying to consolidate their methodology. The few who had begun to focus on these new hazards (Turner 1978, Tierney 1980, Quarantelli 1981, Perrow 1981) were faced with a number of theoretical problems because of the inadequate concepts of "natural" and "man-made" disasters. It is a curiosity once more, that most of the new approaches did not start from an original sociological perspective, but from the consequences of some technological inventions to prevent "man-Made" disasters. It is an original technological perspective to define "disasters" as "lack of knowledge at some point," i.e., disasters "may arise because men have insufficient knowledge of those natural forces which they try to harness, so that energy is released at the wrong time, at the wrong rate or in the wrong place." (Turner 1978:3). Technologically, these problems can be managed by early warning systems, monitoring systems, remote sensing systems, satellite based surveillance systems, etc.

Finally, this technological approach animates the illusion that, in the long run, technical failures are reducable approximately to zero if all these prevention measurements are in use. But analyzing these technological solutions more exactly, it becomes obvious that they are starting at the occurrence of failures in the same way that the traditional sociology of disaster started at the occurrence of "disaster." Therefore, these technological "solutions" represent once more the ideology of progress and control. In my view, the critical need now is for a theory of disaster which allows us to explain the background of this ideology of technical control, to explain the social meanings and social causes of disaster, the circumstances disasters arise in, and to explain the conditions of failures and insufficiency. Only when we can achieve that will we be able to turn the "public consciousness" to the knowledge that every disaster is man-made and that we ourselves must bear the responsibility for prevention and for any failure at prevention.

II.

The attempt to establish a theory of disaster is not an expression of longing for a "Disasterology," this "messianic hope for an Einsteinian type of

3

general field theory, to integrate major propositions and tested miniature theories from all the various human sciences" (Janis 1954:14,16). The intent is rather to expand the concept of disaster so as to include those social processes and configurations which are actually contained with the term. The rediscovery of disaster as social action (Dombrowsky 1981), I am sure, will lead us to a very new perspective of what disasters "really" are.

To initiate this process of rediscovering, consider again the work by Carr. The statement cited earlier connotes- at first glance, nothing more than a somewhat crude "anthropocentrism." As long as men survive with health and property intact, there is no disaster. But Carr turned to an interesting "socialism" when he emphasized that it is only the collapse of the cultural protections which constitutes the disaster. There is a circular implication in this. As long as men can stand the hazards, no disaster will occur. And there will occur less disasters the better the cultural protections are that men create during their withstanding of disasters. Perhaps this interpretation overstresses Carr's statement, but nevertheless it does direct our attention to the breakdown of cultural protections. Thus, disasters can be seen as important steps toward learning about the inadequacies of our cultural protections and toward asking the proper questions to improve such parts. In this way, disasters may be called the "necessary errors" in our cultural process of trial and error, or, to use the argument of Williams (1958), disasters are simply one of the prices society must pay for the gains it reaps from social and technological progress. E. Hoffer moreover, demonstrated that some veritable catastrophes can be adjudged in later years as positive contributions to the society's advance (Hoffer 1951). One might call this argumentation cynical, but this is not the question of my context. My question is of the social content of disaster. In this context it is that cynicism precisely which will enable us, in retracing the history of disaster research, to pass through the barricade referred to earlier, which was created by war- and post-wartime needs.

As I have hypothesized in the beginning, "modern" societies needed better explanations of disaster, because the "traditional" modes of explaining and coping with disasters had lost their explanatory power. This privation was caused by the process of modernization, which began during the Italian Renaissance or, more generally, during the period of transformation, pre-industrial to industrial societies. On analyzing this transformation, our focus turns to the variables of philosophical knowledge and technology. In an excellent discussion of technology, Sjoberg points out that in pre-industrial civilizations:

> Most disasters...are typically attributed to the actions of
> a deity (or deities) or the caprices of malevolent spirits.
> Undeniable, some naturalists interpretations of disaster are
> inter-mixed with the spiritual: yet, famine, epidemics, earth-
> quakes, even military defeat, are interpreted primarily as
> punishments of God or the whims of hostile genii. (1962:362).

Today we may laugh about such a type of causal explanation, but we stop laughing when we face the fact, that the process of transition from pre-industrial to industrial societies has produced not only the dilemma of splitting the unity of explanation and causality (God does, because He wills), but also of dividing causality into the known corpus of natural laws and the remaining unknown universe. The ongoing process of making the unknown known is described as "progress" and, in the long run, as "evolution." But those

4

who like to use both terms should consider the implications. In analyzing
the process of modernization since its beginnings, and speaking exclusively
in terms of philosophical knowledge, it appears that nothing else changed
except the way the universe and the world were explained. The modernists
explained both by natural laws; the traditionalists explained the same by
the existence of a deity. This difference alone, however, did not require
the establishment of the Inquisition. It was the consequences of the
modernist explanation that challenged the prevailing order. The consequence
of the modernist explanation was, simply put, the idea that these natural laws
could work for human actions and interests. To the traditionalists this
called for a declaration of holy war, because the intent to take active re-
sponsibility for human actions and interests instead of passively fulfilling
God's will was open heresy. In a sense, the process of modernization, or
rationalization, overthrew God from the throne of creationism and inaugurated
human being as "demiurge."

In this inauguration, unfortunately, modern man did not realize how
incomplete the transition was. On the surface the emancipation seemed to be
an intellectual and philosophical fight against religious dogma and scholastic
tradition. But in fact, it was an economical and a technological fight
between two different systems. Economically and technologically, as Sjoberg
argued (1962:359-63), the modernization was successful because it increased
productivity. Capitalists combined division of labor with experimental
"scientific" knowledge, and developed trade and transportation between urban
and rural areas, started the interchange of ideas and knowledge, and
established early market systems for a better supply of goods and services.
Furthermore, the shift to more sophisticated energy sources for powering
tools and machines initiated the industrial revolution and increased all
these advantages exponentially. Thus, it was the practical benefits of
modernization that constituted the real challenge, not the philosophical
arguments. This does not diminish the value of such arguments. From Giordano
Bruno through Abbelard to Erasmus of Rotterdam there is an important tradition
of theoretical stabilization of the modern ideology. In distinguishing be-
tween technological and philosophical I want to emphasize that the
philosophical glamour of the Enlightenment was made possible mainly by tech-
nological and economical success. In other words: The process of modern-
ization was essentially a matter of technology and economy supporting
philosophy. The modernists, of course, used philosophy as a weapon, for the
ideological stability it provided (see Hazard 1935), but nevertheless, such
arguments were only a type of rationalization. The whole secret of the
transition from feudal to modern societies lay in practical accomplishments.
In doing things better, the modernists demonstrated their real superiority.
The modernists defined themselves by their technological and economical
success, each success verifying the "truth" of their explanation, their
Weltanschauung. The real problem of modernization, however, was how to
explain failures.

III.

As stated earlier, the real reason for the war between modernists and
traditionalists, was the attempted emancipation from God's will. The
successes of the new Weltanschauung demonstrated that it was possible to let
the forces of nature work for humankind. So the credibility of this Weltan-
schauung (i. e. the result of the process of modernization) depended upon the

5

successful use of the laws of nature. The problem was (and still is) exactly this. Every failure undermines the credibility of modernization and is a reminder of the unsolved problem of dividing and splitting causality from explanation. So any failure forces the modernists to go back to war. Either they have to declare the natural laws are wrong (which would spell the end of modernization), or they have to declare the natural laws are right, albeit poorly used. Following from this, the modernists must accept guilt and assume responsibility for all the damages, losses and following effects. In addition, each failure will demonstrate the philosophical poverty of the new Weltanschauung, because the transition in explanations does not include a better substitution for the former dietal causality; the enlightened modernists can only explain the "how" of the natural laws, but not the "why". No longer can victims of failure take consolation by attributing it to God's will. The victim of an explosion, for example, does not want an explanation about thermo-chemical effects, but a causal explanation for his suffering: "Why did it hit me and why must it explode just now, when I stayed here?"

Now, being enlightened modernists, we must take Carr's idea to its logical conclusion: "The deaths, injuries and other losses that follow this collapse are integral parts of the calamity, but..." they are essentially consequences of the collapse of the cultural protections, not of the disaster. (1932: 211) In the final, and most sobering analysis, this implies that man produces every disaster by himself, or, more generally, humanity self creates its successes and its failures. This idea may seem, as yet, too blasphemous, especially as long as this process of transition is still going on (the genetic engineering is far away from creating synthetic life, but this Pandora's box is already opened). That is why we can recognize in all debates between traditionalists and modernists an intermixture of supra-natural and natural explanations (see Farmer 1981). It is also the reason, why modernists of every century tried to install "semi-deities" like "reason", "spirit", "fortune", etc., because it seemed to be impossible to overcome the practical consequences of bringing modernization to a philosophical conclusion. To do that, we must change our beloved ideas of "accident" and "disaster" (des astro = the evil star!) and stop our secret complicity with those who are not interested in improving cultural protections.

IV

Given the foregoing argumentation, the next consideration to face is the existence of a cultural lag between the technological and the philosophical transition from pre-industrial to industrial societies. This cultural lag determines our knowledge about the conditions and causes of failures. For this reason, it is easier to believe in an intermixed natural and supra-natural accident and disaster concept than to reject such a concept as semi-deital. But perpetuating the tradition of such semi-knowledge gives rise to the problem of ideology and power. The expression "an earthquake destroyed Manila" suggests an explanation and a cause in one. The victims know not only "how" their city was destroyed but also "why"--because of an earthquake. As long as semi-knowledge dominates thinking, this sort of "why" will be acceptable, because the philosophical consequences of man's accepting full responsibility for his own actions are not known. That is the reason most victims of disasters are satisfied in knowing only the disaster agent. In their Weltanschauung exists no demiurgian concept, only a number of religious ideas. Even today

6

these semi-deital causalities are still in use (Dynes and Yutzy 1965). It is very convenient to uphold the ideology of "disaster" and "accident", because it forestalls any request for better cultural protections.

In terms of modernist arguments, however, disasters and accidents are no longer events striking into social normality from outer space. From the modernist point of view, disasters and accidents result exclusively from a lack of knowledge and a subsequent lack of cultural protections. To prevent those events requires more adequate measures for the increase of knowledge and the improvement of cultural protections. Stressing the earthquake example once more, we have to consider that it is not that an earthquake devastates an area, but that the available knowledge and existing cultural protections of the area were not sufficiently developed to withstand it. In other words: If our cultural protections fail, we are forced to realize that our intended ways of producing our own life were striken by contra-intended (or contra-intuitive, or side-) effects. That means we did not control the whole set of conditions and circumstances which reproduce our life. At a certain point, the uncontrolled effects will strike into the set of controlled effects. For example, we pollute our water resources in a relatively small amount every day. But in the long run, the pollution will occur as "disaster" if a powerful toxin is added. In terms of modernist philosophy, we can define "disaster" more exactly: Disaster means the manifestation of contra-productive effects at a certain point. Disasters are the result of those human activities humankind does not fully control. Defined in this way, disasters are steps of learning and evolution.

But learning is more than a simple process of trial and error. It is more than the transformation of failures into experience and knowledge. And it is much more than taking action and waiting to see what happens. In complex industrial societies, learning increasingly becomes a very abstract process of comparing intended aims with the possible variety of risks which will counterstrike them. Therefore, the most important problem is that in many cases the risks are unknown, and can even be produced during the realization of one's aims. A good example is the case of DDT. The aim was to protect plants from plagues. However, in the use of DDT we were confronted with the problems of animal's adaptation to poison and the side effect of contamination of the nutrition chain. Learning, thus, is a very complex process of trial and error, including many strategies for minimizing errors and risks by anticipation, assessment, simulations, and testing. All these efforts we can define as control. In sociological terms, Burns has transformed this complex process of learning how to control our circumstances into a social process of developing strategies to make our "world" sure; thus, he writes Social action means the attempt to control other's actions by interpreting for them the situation and norms according to which they act.

> From the point of view of the actors, all social action may be assessed in comparative terms of success and failure; the success of an act is equivalent to the extent to which the action of the next agent is controlled. (1958: 138-139)

We have not only to control other actors, but also to control the conditions of acting and the effects of our actions on others, on our entire environment, and, finally, back on ourselves. The actions of control are expanded so that

one act of control may counterstrike another. Ultimately, we have to discuss the problem of learning as a dependent variable of the network of all intended aims and all possible contra-intuitive effects. In such a context, every short-run success (like DDT) can degenerate into a long-term failure (but not vice versa, unfortunately), and every failure demonstrates our lack of knowledge about this network and, thus, the limits of evolution (or, in heretical words, the distance to go before becoming our own God).

A disaster can now be redefined as the manifested dominance of the unintended over the intended. The level at which this dominance is defined as disastrous is basically an issue of social agreement. (Westgate and O'Keefe 1978).

Another problem is how to discover the potential of latent threats before striking into the intended activities, or, in other words, how to identify the side-effects of man's intended actions. There are a number of possible approaches to this problem. The most interesting ones are to be found in the field of technology. The strategies of risk assessment, technology assessment, computer simulation, etc. (see Arnstein 1977) are all concerned with the problem of possible side-effects, described above. The strategies of assessment are disaster-prevention strategies, intending to anticipate and mitigate possible unintended effects. But we have to realize that the strategies of assessment are the result of an increasing amount of failures, not of the efforts of the sociology of disaster. That is to say, these improving strategies are induced by the unfortunate reality of failures, not by a widespread understanding of the way in which the potential dangers of a proposed course of action can be estimated. Therefore, the assessment strategies being used today are derived from the analysis of past disasters and accidents, and from the insight that every large-scale disaster is an economical disaster too. Consequently, it becomes increasingly profitable to invest the money a disaster would possibly cost, in sophisticated prevention measurements. But this sort of economical induced prevention cannot solve the most important handicap, i.e., the lack of general rules and principles about the emergency of failures. Starting with the occurrence of failures, or with the onset of disasters, it would be impossible to understand the creation of both and to be able to cope adequately with the future. In contrast, my basic framework for a theory of disaster enables me to do so. The definition of disaster as a collision of the intended with the unintended offers a way of coping with the future, and of identifying the potential of the unintended before its manifestation as failure.

V

With the help of the basic framework presented here, it might be possible to develop some studies for a better understanding of the circumstances creating disasters and accidents, for a better disaster preparedness planning, and a more effective disaster prevention.

In general, the sociology of disaster is occupied with the period after the onset of an "agent" or an "event". Consequently, most of the research is focused on improvements of the relief and rescue work. But there still exists a lack of improvements in the field of social relief, and in better explanations of the causes of failures. Therefore, the sociology of disaster has not

8

only to analyze problems of stress, organizations, groups, families, behavior, etc., but also of ideology, power and control. But, first of all, it has to analyze the reasons for the breakdown of the existing cultural protections, and to do research for better ones.

Secondly, the sociology of disaster has to ask for possible cultural protections, and the interests rejecting their establishment.

Thirdly, the sociology of disaster has to ask for improvements of both aspects of cultural protection, that is, knowledge and technology. Knowledge, in the sense used here, means to know about the residuum of the unknown, the indefinite status of present natural laws, the uncertainty of human actions, and the permanent risk of being thrown back in evolution by collisions of the intended with the unintended. Disasters always represent failures of inten-. tion, and if people can come to know in more detail how such failures occur, prevention might be possible. By regarding all disasters (and accidents as well) as the outcomes of the collision of the intended with the unintended, the origins of disasters must be sought in the potential of all side-effects influencing the intended effects. The scale and growth of failures which modern societies make possible, demonstrate the lack of knowledge about this counterstriking potential. Thus, the occurrence of failures indicates that there has been a failure of the rational mode of thought and action, too. Consequently, the western model of rationality has to be reconsidered. An integration of another concept of disaster into our knowledge seems to be necessary, as well as some modifications of the rational model. The hypertrophy of western thinking "to do everything being possible to do" tends only toward a new Pandora's box, but not toward a widespread understanding and a wise control of the laws of nature and their proper use. So, my step toward a theory of disaster should enable to become more modest in judging the capacity of our rationality. Thinking modestly, the redefinition of disaster will teach us the limits of our knowledge and rationality.

In more practical terms, the redefinition of disaster as a manifest result of a collision of unrealized side-effects with human's intentions, may enable to become aware of the permanent working relation of intended and unintended factors. Thus, people will become motivated to evaluate this relation, instead of being condemned to waiting for new onsets of collisions of both sorts of factors. Becoming aware that all disasters are man made, people's consciousnesses may change. Then, the fatalistic point of view can be easily turned to a demiurgian one. Finally, people would be much more interested in the development of effective and adequate cultural protections than in the ideological topics of a hypertrophic technology of the "Higher, Greater, Bigger".

To improve the cultural protections, two integrated strategies might be possible, a technological and a social one. The technological strategy is already well known. It is to construct safer buildings, better levees, better designed machines; it means to install early warning and surveillance systems, to improve the preparedness planning and the training of the people, and it means to implement sophisticated assessments on every level of action. Realistically, everybody knows about the costs of these improvements, and the interests fighting against them. Thus, many of the existing improvements are only not installed yet, but also many of the possible ones are unlikely to be

implemented. Yet, it is known that the social costs of losses caused by failures are much higher than most of the preventive measurements. Therefore, during a period of change, compensation would be necessary to minimize the lack of cultural protections people are exposed to while living in threatened areas. With the help of the concept of vulnerability (Gabor 1980; Pelanda 1981) the necessary compensation can be evaluated. Moreover, the compensation payments may induce a market for safety measurements, which people will want after learning about the vulnerability of their livelihood. Finally, the people's concern would force the process of improvement and destroy the complicity with semi-deital explanations of failures. Perhaps, this might be a way to overcome the philosophical lack of modernization.

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