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Changes in the Research of Crisis

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Abstract**—**Thanks to the interdisciplinary nature of crises, the position of researchers in that field is rather difficult. Very often the traditional methods of research cannot be applied there. The article is aimed at the changes in crises research. It describes the substance of individual changes and emphasizes the shift in research approaches to the crisis.

Keywords**—**crisis, change, research

I. Introduction

RESEARCH of industrial, ecological or economic crises is interdisciplinary and generally very heterogeneous. To characterize it within the framework of only a few topics might be too simplifying and distorting. Yet, the author of this paper will try it in order to introduce a certain order into a large variety of that area. On the basis of observation they are defined four big changes in professional studies aimed at crises [6] which the author will work up, update and enhance by further views.

II. Aims and methodology

The aim of the article is to show a shift in approaches to crises research and their development and impacts on the organization and society in general. In order to achieve the stated objective the author used a number of methods specific for the basic research. The analysis of the state of knowledge in the subject area, a comparison of models of crises and crisis management and a systematic framework for interdisciplinary approaches to the crisis were carried out. Home and abroad publications served as input data.

Methodology used in the procedure of solution: For the creation of a systematic framework of approaches and models including it was necessary to analyze and process literature searches. At grouping of scientific knowledge of crises anatomy, a synthetic classification analysis was used. Furthermore, by means of analytic classification analysis the wholes obtained by the synthetic classification were split up into subgroups in order to exclude common elements. Identical or dissimilar features of various approaches were identified by comparison. Creative thinking and a synthesis served for creating of systematic standpoints and for the creation of new views of crisis.

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III. Changes in the Research of Crises

A. From studies motivated by accidents to studies motivated by problems

Former studies of industrial and ecological crises were motivated to a large extent by accidents. They assessed a concrete crisis from various standpoints. Studies of a nuclear disasters, a catastrophe of Union Carbide production facilities in Bhopal, the explosion of Challenger space shuttle may serve as examples. Studies focused on a disaster still prevail. In fact severely unbiased and in-depth studies of concrete crises are needed. Apart from it there is a trend to 'problems orientated studies'.

To problems orientated studies concentrate on problems connected with crises or on topics relating to the concrete crises. A focus on a wide range of problems makes it possible to examine crises in the context of connected fields. It facilitates to analyze circumstances under which a crisis occurred. For example, studies of the air quality and its pollution may be used for the assessment of concrete crises connected with air pollution. Similarly, studies of the world climate can be applied to the evaluation of actual crises in relation to ozone depletion and global warming. Studies of sustainable development make it possible to assess the energy crisis, exhausting of resources, problems with toxic wastes and industrial air pollution. In each of those areas there are hundreds of studies that analyze the matter at issue from various scientific points of view and positions of involved subjects.

B. Extent of the research subject: from natural to the technical and social disasters

Most frequently studied crises in literary sources are natural disasters. These are disasters caused by floods, windstorms and earthquakes, volcano eruptions, tiding waves of tsunami, famines and other natural disasters. Studies dealing with those disasters from the position of one discipline either economy and sociology or policy began to appear from the beginning of the forties in the last century. Lately, studies have appeared dealing with that matter in the interdisciplinary way in the applied areas within the management of emergency situations such as earthquakes or floods. Research in the sphere of 'sociology of catastrophes' seems to be the most developed within those areas. Scientists engaged in investigating natural disastrous begin to understand that those mistakes have their origin in technology, management, planning, policy and social policy. It is not an act of God or force majeure. It could be possible to enter a debate whether a purely natural catastrophe exists. Damages caused by natural disasters are often functions of economic, social and political decisions.

Economic, social and political errors are also the reason of 'technical catastrophes' including the problems with toxic wastes, air pollution, harmful impacts of industry, destructive effects of floods etc.

McClelland's article about systemic crises was at the beginning of considerable theoretical progress to which Herman, McClelland and Brecher significantly contributed [3]-[5]. Most of that research work concentrated rather on international crises among governments than on internal crises in individual countries. Most of literary sources about decision-making in international crises deal with individual cases and do not allow their generalization regardless of putting emphasis on the importance of participants and the pressure to which they are exposed. Research of crisis management in the international dimensions did not provide a well-built theoretical basis. It took interest in proposals of discussions with individuals or how to utilize the situation for achieving the required outcomes - e.g. how important it is to maintain open communication channels, how to persuade others about 'bona fides' or how to identify fields of mutual consent. They do not provide a pregnant view of crisis development or its generalization.

Scientists investigating crises include many kinds of societal, technical and ecological catastrophes and crises into the sphere of their research. Studies if crises also concerns public unrests, disputes about environment protection, harm to health by harmful products, posttraumatic stresses and other modern social disruptions. As an example of new areas of research in which a connection of traditional disciplines with crises standpoints occurs can serve the environment protection, psychology of traumata caused by crisis, economics of environment protection and development studies.

C. Aspects: causes, consequences, defensive measures and methods of crisis management

Studies of crises can be aimed at four key aspects of crises. First, they can investigate the causes of crises. The causes include immediate failures that have caused the crisis, and previous conditions that enabled the failures to happen. Studies of crises can also examine consequences of crises. Consequences include the immediate and long term impacts that span from fatal and other injuries to the damages to the environment and long term risks. Harms caused by crises easily penetrate into economic, societal, political, legal and cultural areas.

A certain kind of crises studies focuses on the creation of warning or defensive measures in organizations and on the methods of coping with crises or their management. Defense against crises means building of early warning systems, defensive measures planning, and a control of observing the environment protection principles, protection of health and safety precautions in the organization. It also includes the improvement of employees' readiness by training them to watchfulness and improvements of changes in the organizational structure and culture. Crisis management includes forming of crises managerial teams, crisis communication, management of emergency situations, rescue and help to victims, conflicts solution and the removal of long term impacts of damages.

Former studies were often focused on one or two of those aspects. Some of them were even narrowly focused on a small part of the certain aspect only, for example the study of crisis communication that is part of crisis management [2] or on disputes about responsibility for harms caused by a product. Today, the studies used to take more and more widely aim, and they encompass more aspects from those four above-mentioned [6]-[8].

D. Multiplying models and systems

Many studies were also an attempt to create a dictionary and language for investigating the crisis. They offer definitions, names of concepts, typology, taxonomies, models and systems for the study of crises [7]. Models and systems begin to be more universal. They encompass more variables, describe complex relations and gain a theoretical depth. Despite a wide spread of theoretical models and systems there is not any all-embracing conception that would synthesize that diverse knowledge. A variety of knowledge makes a difficult task from that kind of synthesis. At this stage of development it is not appropriate to have only one conception. New insights and new issues are constantly bringing. For example, the issue of knowledge management [16], risk management [15] and social responsibility [14] affects other approaches to study the development of crisis management. This could untimely halt new and innovative ways of crises assessment.

E. Methodology

It is immensely difficult to distinguish methodological trends in this field. Apparently for the reason of interdisciplinary nature and complexity of crises only a few methodologies were used in the studies. The most usual method is a case study of individual crises. These case studies are descriptive to a considerable extent.

In addition to it, there are analytical and comparative case studies [10]. In some thematic fields such as for example perceiving technological risks and the assessment of impact on the environment the scientists examining crises prefer empiric studies of large samples by applying a statistic analysis [11]. Also new methods of computer simulation, modeling, theory of chaos and theory of catastrophes begin to enter this field [12].

In studies there is a growing tendence to overcome borders of individual scientific branches and become interdisciplinary. This holds especially for studies of big ecological crises. For example, studies of global climatic changes necessarily have to be interdisciplinary as a climatic change influences at the same time geography, economy, policy, and social and cultural relations. It is also possible to reveal a certain higher level at theoretical methods. A shift from the creation of definitions and dictionaries to the creation of theoretical systems and models is taking place.

F. Research activity intensification

The more the crisis is deepening and the longer it lasts the more it requires looking for more and more radical and harder solutions. Therefore, the crisis is always a certain kind of reminder. It refuses to admit what seemed to be evident, what seemed to be functional and efficient. It reveals some mistakes and shortages already in the seed. Such characteristics of crisis stimulate research that could lead to technological measures, innovation or to a new legal and political instrument. Innovation leads to the reform of system and from that moment it becomes an indivisible part of reorganization mechanisms and strategies. This searching may go beyond the reform and lead to the restructuring of the system. In the course of every crisis and after paralyzing some relaxation comes by means of intellectual activities, formulation of causes of crisis, supplying incomplete knowledge, doubting established or so far inviolable orders.

In the crisis that is deepening there are at the same time destructive forces (the beginning and infectious spreading of disorder, decline and disintegration) and creative forces. The crisis simultaneously releases the forces of destruction and the forces of regeneration. That is why it is principally ambiguous.

G.Mythic and fictitious solutions

Ambiguity appears also in another level. Looking for solution obtains certain mythic and ritual features [13]. The most intellectual activities become more intensified together with magic methods. There are efforts to isolate and limit the blame and remove the evil by sacrificing of 'guilty person' or guilty persons'. Looking for responsibility is then divided into two antagonistic parts, into part in which the nature of the very problem is recognized, and into part in which a sacrificial lamb is found.

1) Destructive myths about crisis:

Crises are unavoidable:

In case managers believe that the crisis is an unavoidable phenomenon, then it can lead them to fatalism and, as a result, they are not able to strike a reasonable attitude towards it and to implement measures to reduce effects of potential crises.

We lack basic knowledge to be able to prevent or understand crises:

Organizations have not sufficient or even any evidence of their products or activities negative effects. The evidence proving that such connection exists may appear at the moment when it is too late to ward off a disaster. Applying such defense is destructive for organization.

A better technology will prevent future crisis:

Improvement of technology often leads the trusting management to the use technologically safe procedures preventing incidents to happen. In fact the effect of technology will create a lower statistical probability of incidents but the impact of incident will be bigger.

Crisis management is to the detriment of progress:

This myth the organizations use for justification of their activities. Their opinion is that too high considerations for safety and protection do not allow any inevitable experiment or development in the organization and thus it leads to cutting down new products development.

Morals have no place in crisis management:

Like any other social group the organization lives in various ethic conditions. Organizations should do more than only to observe the law or common principles.

It is undeniable that the research of crises and a crisis management practice show a rapid progress in various directions. But it cannot be said, however, that this growth has clearly the right direction.

IV. Changes in the Research of Crises-precis

First, activities in the field of crisis problem area are very shattered both in practice and also in research work. Organizations practicing crisis prevention and crisis management do it separately and in many various areas. It is not unusual to see that there are a high number of sections involved in various tasks of crisis issues. Such sections are usually as follows: a section of ecology, safety and health protection, a technical section, a PR and mass media section, risks management, internal communication, legal department etc. Often, there is insufficient communication among those sections, which leads to the shattered and fragmentary procedure.

Fragmentation is apparent also in research work. There are only few attempts to create links among individual parts of research. A tendency to penetrate into new spheres prevails, to the study of new topics, forming of new dictionaries and systems. It is not much surprising in the interdisciplinary field with its many new opportunities and new crises offered to be studied. Shortage of efforts to create systematic linkages with the recent research, however, gives the approach to research work an ad hoc character [6]. In this way an obstacle arises in viewing the crisis in the summery of all knowledge. There are a lot of new and creative achievements but not each of them contributes to a more perfect view of crisis.

A second and very similar critical observation in that field can be done in relation to the dissimilarity of studied problems option in particular cases. There is not any unified conception that would shape the research. The choice of study topics is therefore a result of scientists' personal preferences, information accessibility, institutional limits and available means. Moreover, that field has attracted research scientists from many various scientific fields. The result is the effect of 'the tower of Babel'. There are many various views coming from particular disciplines, expressed in various languages, dealing with various problems and targeting various pressure groups. This brings difficulties in the dissemination of research work findings within the professional community. This also impedes reaching the consent between theoretical and practical methods.

Crisis management as science is still at its beginning due to the difficulties with measuring, standardization and

comparison of one crisis situation with another. In addition to insufficient general consent with the technical terms of crisis management many organizations are not willing to publish proofs of structural or managerial weakness - concrete or apparent.

V. Drawbacks for the Creation of General System of Research

Robert and Lajth [1] identified two significant drawbacks for the creation of general system of research - and even of the 'best practice' in the field. The author is in favor of their conclusions.

A. Application of scientific approach is not always possible in a crisis situation

What is the reason?

Crisis is an event which is (relatively) scarce.

Crisis is an event that cannot be multiplied. Every crisis situation is unique. The idea of experiment duplication is not valid. Also it is not possible to perform gradual tests on the set of hypotheses on the basis of the same experience.

The proposed theories are not invalidated. Nobody can undoubtedly prove that various approaches to crises can or should result in other and better accepted conclusions.

There is not any certainty that real experience of life will be similar to the way they are described by the model. Fictitious crises cannot be exactly tested in reality.

Experimentation on live subjects is not possible. Because of obvious ethic reasons it is not possible to launch an explosion in the industrial area or a biological attack in order to measure the effects.

The price of experiments is unacceptable. Experiment is unthinkable if we take into account the material impact on the social structure or even the risk of people's lives.

B.** Scientists are seldom allowed directly to observe the crisis**.

Very few managers are willing to cooperate with scientists and let them investigate and write about how they manage the crisis. In the acute period of the crisis, researchers are not welcome in the crisis team.

If scientists are invited, then they incline to the issues of management and trust models.

In the period of response after the crisis passing away, available information is often incomplete and distorted. Gaining grounds for own interests and legal impacts may cause drying up or devaluation of sources of information.

Scientists in the role of witnesses may be forced to answer questions asked by lawyers and managerial bodies concerning a procedure of crisis solution or about the quality of preparation for the crisis.

A period of preparation before the crisis outbreak appears to be more accessible for scientists as in that period there are less barriers in the organization (especially information).

VI. Conclusion

To the study of crises and to enable them to be given due weight, certain qualities are necessary that are not mostly considered important in other fields of scientific research. Personal impeccability and courage are needed to be able to discuss problems connected with crises. Crises are always associated with complicated relationships of powers and competence. To study them demands telling the truth regardless the attitude of those who are powerful. To do so some courage is necessary. Sorting out the crisis often calls for restructuring of relationships. It is also inevitable to cope with difficulties and pitfalls accompanying the effort to publish polemic and controversial analyses. In most scientific and popular periodicals there is not much enthusiasm for taking risks. However, crises are often polemic and controversial. Publishing studies about crises may be therefore risky.

Scientists investigating crises have to have creative abilities enabling them to cope with newness, complexity and dynamics of crisis phenomenon. Crises are a variable phenomenon. They cannot be investigated by applying old methods of social science. The phenomenon of crisis calls for new conceptions, theories and models. These conceptions have to be appropriately sophisticated to grasp the complexity of crises the explanation of which they try to present.

The study of crises necessitates certain patience and perseverance. The effect of crises and their development are long term. They are continuously transformed into different forms and shapes. Sometimes they may last for tens of years. Scientists have to have patience to monitor crises for the whole period of their development. Only then they can carry out their analyses.

Scientists making inquiry into crises have to be willing personally to be engaged in changing the conditions causing crises. The research of crises may be significant for the society as long as scientific observers also become participants in the transformation process in the field of crises. Every crisis is unique. The real purpose of the study of crisis is its alteration. Scientists who have penetrated into the nature of crisis have to be willing to use their knowledge already in the course of its development. If they only observe the subject of their searching they understand it and write about it, then their observations may not be ever used.

Those prerequisites for the successful study of crises differ from the traditional methods of scientific research and they require personal engagement. They are not compatible with a formula of the scientist as an 'impartial observer'. They reach farther than a formula of the scientist investigating qualities of processes or also a scientist in the role of 'participant-observer'. They introduce a practice within which scientists strive for penetration into the essence, for presenting the explanation and a change of the subject of their study.

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