Risk Sociology and the Fukushima Nuclear Disaster

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Abstract

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Niklas Luhmann's risk theory has already been accepted around the world as a fundamental theory in the field of risk sociology. However, to our knowledge, no previous studies have adequately examined and assessed Luhmann's key insights, particularly the significance of his perspective on the complex aspects of the definitional conflicts surrounding risk, uncertainty, and non-knowledge, and his proposal for "risk dialogue" as a reconciliation strategy for such conflicts.

At the same time, Luhmann's insights could be helpful in the analysis of Japanese society following the Fukushima Daiichi nuclear disaster that occurred in March 2011, especially the intensifying societal conflicts caused by this disaster. Although Japanese sociologists have criticized nuclear technology, experts, and government policy, they have yet to analyze the structure and underlying mechanisms of these conflicts sufficiently.

In this book, we aim both to reexamine Luhmann's risk theory and to develop a theoretical perspective to analyze societal conflicts over risks, uncertainties, and non-knowledge and their reconciliation process. Applying the perspectives, we attempt to conduct a case study of post-Fukushima Japan to clarify the structure and processes of the societal conflicts triggered by this disaster. This book is composed of three parts.

In Part I, we develop theoretical perspectives on the definitional conflicts surrounding disasters and catastrophic events and attempt to analyze the dispute over the cause and responsibility of the Fukushima Daiichi nuclear disaster in Japan.

In Chapter 1, we extract the insight of "attribution conflict" from Luhmann's theory. Luhmann distinguished between "danger" and "risk", noting the former as a problem caused by and attributable to external factors such as God, demons, nature, or other individuals, etc., and the latter as a problem resulting from and attributable to a decision-maker. He argued that decision-makers observe a possible loss as "risk", which is caused by themselves, while those affected who are excluded from the decision-making process observe the same loss as "danger", which is caused by the mistakes of others; this divergence of perspectives causes conflict. Such conflict has been described as so-called "risk assessment conflict" in previous studies. However, through a reinterpretation of Luhmann's discussion, it is possible to extract a perspective on a different conflict phase: the attribution of a problem. In a conflict, various aspects are disputed, including the cause of a problem, who is responsible, and whether the problem should be defined as a "natural danger" or an "artificial risk". This phase is not reducible to "risk assessment conflict"; thus, a new perspective is possible.

In Chapter 2, we develop further these insights in association with the concepts of "new type of risk" and "organized irresponsibility" discussed by Ulrich Beck. We point out a phenomenon that Beck did not analyze sufficiently, the "paradox of pursuit of responsibility". Beck argued that radically pursuing responsibility is necessary to overcome the organized irresponsibility in a risk society. However, the notion of responsibility is closely tied to the idea of "old risk", which is predictable, controllable, and attributable to particular decision-maker. The more the idea of responsibility is applied to a new risk problem, which is defined as unattributable and controllable, the new risk is transformed and trivialized into the old or normal risk problem. We point out that the practice of pursuing responsibility may contribute to making the new risk problem invisible.

In Chapter 3, we point out that the above phenomena are observable in the controversy over the causes and responsibility of the Fukushima nuclear disaster. Immediately after the accident, Japanese political and

business leaders recognized that the accident was caused by a natural disaster that exceeded all assumed scenarios. On the other hand, many Japanese citizens, the mass media, and sociologists criticized it as an evasion of responsibility. These actors immediately began questioning the responsibility of the Tokyo Electric Power Company (TEPCO), regulatory authorities, and the government. At the heart of this movement is a discussion in a report by the Fukushima Nuclear Accident Independent Investigation Commission of the National Diet of Japan. It should be noted that here we focus on the "paradox of pursuing responsibility" that tended to be found in the report. On one hand, the report sought to assess the problem and responsibility of both TEPCO and the government, and to propose institutional reform. On the other hand, the report did not problematize the fundamental defects and limitations of nuclear science and technology. Rather, it argued that there is no problem in science and technology, viewing them as completely innocent entities. In the process, the meaning of the Fukushima accident was transformed and trivialized from an unpredictable and unpreventable event (new risk problem) into a predictable and preventable normal accident (old risk problem). Thus, the illusion of control and scientism that existed before the disaster was revived. We point out that this mechanism is one of factors leading to rapid nuclear regression in post-Fukushima Japanese society.

In Part II, we develop theoretical perspectives on societal conflict over scientific non-knowledge and discuss a case study involving the controversy surrounding the issue of low-dose radiation exposure caused by the Fukushima nuclear disaster.

After the nuclear accident, the effects of low-dose radiation exposure on the human body became a serious issue in Japan. As this issue remains somewhat unclear from a scientific perspective, it has led to definitional conflicts in regard to scientific non-knowledge (Chapters 4 and 6).

To grasp a better understanding of this conflict, we review the sociological theory of non-knowledge and draw out the main

perspectives regarding the confrontation between "specified" and "unspecified non-knowledge" discussed by Klaus Peter Japp and that between "known" and "unknown unknowns" discussed by Peter Wehling (Chapter 5).

In Chapter 7, we analyze the controversy and discourse of Japanese experts surrounding low-dose radiation exposure after the disaster. We point out two phenomena. First, we point out that the composition of the confrontation discussed by Japp and Wehling is observable in the controversy. The majority of Japanese experts argued about the issue of low-dose radiation exposure, assumed the possibility of scientific estimation and probabilistic risk assessment, and sometimes suggested risk acceptance. Critical experts, on the other hand, grasped the extent of the unknown more broadly, pointed out the impossibility of probabilistic risk assessment, and emphasized careful risk aversion based on the precautionary principle. Second, a mechanism of intensification of the controversy can be captured based on Luhmann's insight on the relationship between non-knowledge and morality. Luhmann argued that because of its cognitive uncertainty, the problem of non-knowledge is not solvable through the logic of functional systems, such as science. Therefore, to solve problems "normatively", a "moral code" (good/bad, respectable/disrespectable) is often referred to by the parties involved. However, the moral code does not resolve the conflict, but rather, intensifies it by sharply dividing society into two opposing parties. This situation was observed in the controversy surrounding Japanese experts and scientists after the Fukushima disaster.

In Part III, we examine theoretically the forms and conditions of the "risk dialogue" required to reduce societal conflicts over risk and non-knowledge.

In previous studies exploring risk dialogue or deliberative democracy in post-Fukushima Japan, Jürgen Habermas's theory arguing a rational and normatively justified consensus as a goal of dialogue has attracted great attention. However, some scholars note that it is a lofty goal and question its feasibility in regard to Japanese society. To seek an

alternative goal and form of dialogue, we focus on Luhmann and Alois Hahn's theory of "rapprochement" (Verständigung) (Chapter 8).

In Chapter 9, we examine Hahn's strategic rapprochement theory. While criticizing Habermas's theory, Hahn pointed out that seeking rational consensus might deny the heterogeneity of individual opinions and intensify conflicts. Thus, Hahn discusses the importance of "strategic rapprochement" as a type of modus vivendi that makes it possible for conflicting parties to secure a cease-fire and cooperate with each other strategically while maintaining internal disagreement and their own sense of value.

Based on Hahn's discussion, Luhmann argues that "rapprochement-oriented risk dialogue" is more important than rational consensus-oriented dialogue to reconcile a confrontation between decision-makers and those affected. Luhmann focuses on the fruitfulness of maintaining the possibility of communication in the future rather than requiring rational agreement. This strategy provides numerous hints to deal with the situation in post-Fukushima Japan, where the absence of dialogue is prominent (Chapters 10 and 12).

Theoretically, Luhmann's rapprochement theory provides several implications. One is the mysterious advice of "return to the level of first-order observation from that of second-order observation". Luhmann initially focused on the significance of second-order observation as an observation of observation. However, in the context of risk theory, he pointed out the toxicity of second-order observation and the importance of a partial return to first-order observation. We point out that the emergence of the "post-constructivist turn" in Luhmann's theory is hidden in this discussion, which opens it to a new interpretation (Chapter 11).

In conclusion, we suggest that risk sociology with an updated version of Luhmann's theory can provide fruitful perspectives and proposals to analyze and address societal conflicts in post-Fukushima Japan. However, the development of further theoretical and empirical study in the future is needed.