

Opinion

# Responding to disasters: about the governance of post-nuclear accident situations

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## Abstract

Every society organizes itself to reduce the complexity of living together in order to ensure relative peace of mind for its members. Major technological accidents such as the Chernobyl or Fukushima nuclear accidents are violent disruptions that affect the quality of life of tens of thousands of people and generate increased distrust and anxiety among them as well as the questioning of the state system's ability to restore some peace of mind. Past experience has shown that the measurement of radiation and the development of local projects with the support of professionals and experts prove to be effective levers for those affected to regain the ability to make decisions for their protection and to assess the protective actions implemented collectively. It also showed that restoring confidence and restoring the dignity of these people, seriously impaired by the accident, takes time.

Our societies are built on a normalization that allows individuals to live with a certain peace of mind, that is to say by concealing the complexity of the world around them. When they are in this tranquility individuals rely on their common sense, abandon their own vigilance and trust the system (regime of control put in place by the State) on which they rely to protect them, which is particularly pervasive in hyper-technological societies and standardization is a very powerful tool from this point of view. It allows everyone to go about their business within the limits set by the standards and society organizes itself in such a way as to intervene when the standard is exceeded. It is the regime that prevails when life unfolds 'normally' day after day. But the norm no longer works in the event of a disaster, whether natural or technological, because it suddenly, and in a destabilizing way, reveals the complexity of the socio-technical environment in which the individual evolves and which results in increased anxiety and questioning the ability of the State system to restore it.

The immediate consequence of major technological accidents such as the Chernobyl or Fukushima nuclear accidents, impacting large areas and affecting large populations [1] is the disruption of all areas of everyday life and the loss of confidence of individuals vis-à-vis the authorities and experts, amplified by the post-accident cacophony on the policies implemented and the protective actions adopted [2]. In the case of a nuclear accident, the

situation is particularly difficult for individuals to understand, and making decisions about the future raises many dilemmas. The danger is not accessible to the senses, there are no visible effects and the health consequences are long-term [3]. It should be noted that this is also true for many other crises related to chemical or biological agents. The accident is also a break in the quality of life which results in the depreciation of goods, the environment, and the loss of quality of food... Finally, the crisis leads people to ask themselves existential questions: relationship to others, relationship to the world, to life, and the relationship between generations [4]. Even if the answers may vary from one culture to another, Chernobyl and Fukushima show that these questions remain fundamentally cross-cultural.

These characteristics are very anxiety-provoking because there is no reality to relate to: there is no sharing of experiences already lived (such as earthquakes, floods, and avalanches... for example). The consequences of the accident are not firmly limited in time and space: what is the affected area and when will a normal situation be restored? This crisis is amplified by the absence of a common language of words to describe the situation. The population is speechless and must rely on experts, which induces a serious loss of autonomy. This disturbing context is not without effects on the emotional and psychological levels [5,6] and is even reflected for a not insignificant part of the population in more serious mental effects [7,8].

## More Information

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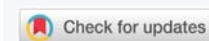
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In the first phase, the accidental situation, therefore, induces a deficit of trust, a lack of direction, and an invasion of complexity that infiltrates everywhere and which is very difficult for individuals to manage. This makes it very difficult for the State to have its recovery policy accepted, even if it is technically relevant. After a more or less long period (a few weeks or a few months) where the authorities and the population look at each other “like an earthenware dog”, decantation takes place because gradually and despite many obstacles, the actors end up engaging in a dialogue in to rebuild a new peace of mind because everyone feels that it would be dangerous for the future and the quality of living together to remain in a crisis situation for a long time [9]. Rebuilding trust, which takes time, involves developing a narrative that allows people to describe their experiences so that they can be shared (a catharsis approach). In this phase of reconstruction, the population seeks to form its own opinion and rebuild a new “common sense” to evacuate the complexity of the new situation and allow it to return to a simpler world [10].

It is indeed the deployment of a narrative that allows societal reconstruction that is very complex after a nuclear accident. Because it is about rebuilding, reinventing, and not just repairing because there is no possible return to the past. How to approach the discrimination of the affected population, the loss of heritage assets, doubts about the quality of food, devalued landscapes, questioned traditions, etc.? Obviously not by standards and numbers (whether dose criteria or compensation amounts) but by words and therefore by dialogue [11].

Obviously, in this perspective, the Internet and social networks play an important role and they have changed the situation in Fukushima compared to Chernobyl. They are decisive because they allow the population to free their speech and also to share knowledge on the consequences of the accident. They have become key elements of governance because it is no longer knowing who holds the truth and who says what is true [10]. We can be optimistic about the role played by these new media because after the initial cacophony and the attempts at destabilization and instrumentalization, they allow, thanks to the speed of the exchanges and the plurality of the participants, to reveal a shared truth very quickly. The evolution of network content in Japan over the few years following the Fukushima Daiichi nuclear accident clearly demonstrates that collective intelligence can be counted on, be it the affected populations, the Japanese nation as a whole, and the rest of the world.

To overcome the phase of State/population opposition, which is inevitable, the fundamental question is to promote the crystallization and restoration of dialogue. But beforehand, it is necessary to recognize the doubts and the concerns, even the anxiety of the population, and also to hear the complaint, then to bring all the elements so that the population can build its own decision by relying on relays taking action good

offices. The state must abandon its interventionist approach and accept the role of the well-minded citizens who form the vast majority of the population: listening to the ideas of citizens and their projects is a determinant for the success of the recovery process. The classic administrative approach (top-down), even if it is technically efficient, cannot on its own generate the support of the population and rebuild trust. It is therefore essential for the authorities that opinion leaders be prepared before the crisis and, although it is difficult to envisage the preparation of the population upstream of a nuclear accident, the main actors representing society must be associated with accident preparedness planning [12].

The mobilization of civil society in Japan was much faster than in Belarus after the Chernobyl accident, this difference is perhaps linked to the culture of seismic risk in Japan, but also probably to the existence of social networks [13]. The key moment is the changeover between the two periods, the first period when the population is waiting for solutions from the authorities and the second when people and society decide to take charge of themselves. This is the switch between assistantship and transition to actor mode which took several years in Belarus and about a year in Japan. Experience has shown that engaging affected people in dialogues [11], measuring radiation [14], and developing local projects [13] professionals and experts is an effective ways to empower them in order to improve their self-protection and regain control on their day-to-day life [3,15-19]. This requires that experts put themselves at the service of society and adopt ethical values capable of restoring individual well-being and dignity as well as the quality of living together in the community to which they belong [20,21].

The management of a nuclear accident is first and foremost a social negotiation [4] and not a technical response, even if the latter is obviously essential and remains at the service of rehabilitating living and working conditions and the quality of life of affected communities. To achieve this objective, the involvement of stakeholders in an inclusive governance approach for example the co-expertise process suggested by the International Commission on Radiological Protection is crucial [22-26].

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