

Prologue

Living in contaminated areas after a nuclear accident

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“All human action, all knowledge, all experience has meaning only insofar as one can speak of it. [...] Men in the plural, that is to say men as “they live and move and act in this world, have the experience of the intelligible only because they speak, understand each other, understand themselves”.

Hannah Arendt (1958) *The Human Conditions*, University of Chicago Press.

Faced with disasters of the magnitude of Chernobyl and Fukushima accidents, the questions that naturally come to mind for an expert is of a collective nature: How to protect the population? What actions can be implemented to reduce the impact of radioactive pollution? How to help victims? What organizations should be put in place to take charge of the management of the various consequences? Of course, this collective dimension is fundamental, but the focus on the collective response tends to pay limited attention to the fact that radioactivity, when it bursts into the environment, immediately reaches the private sphere and enters the privacy of each of the individuals caught up in the contamination. From this point of view, the catastrophe introduces a new reality of the human condition in the sense that Hannah Arendt gives to this expression.

Radioactivity in the environment is an invisible, impalpable, elusive presence. Moreover, it is unknown in the sense that man has no experience, no memory, of such a presence. The latter is therefore also unspeakable. It constitutes a danger

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from the outset which is materialized by the scale of the initial response to the accident, but this danger is very difficult to identify. It is a potential danger, an insidious and lasting threat, because it also concerns future generations. All these characteristics explain why the presence of radioactivity in the environment following a nuclear accident is worrying and translates directly into a very high level of concern among the people affected and in particular among the mothers of young children.

This presence affects each individual in their relationship with themselves, to others and to their territory on all levels: health, economic, social, education, psychological, symbolic, aesthetic... First, this presence re-questions everyone's relationship to risk, and therefore to death. It updates the latter, which in normal times is postponed as an eventuality that first affects others, the severely sick, those who take risks. But in this face to face with death, man is speechless, he doesn't know how to express his fear of danger. The presence of radioactivity also challenges relationships with others, those who have been affected and those who have not. How to react in front of someone who is contaminated like me? How do the uncontaminated people perceive me? The children evacuated from the contaminated zones in Belarus after the Chernobyl accident were placed at the back of the class in the schools of the villages where they were rehoused. Young people living in uncontaminated territories often admit that they would not want to marry someone from contaminated territories. Being contaminated makes you different, almost like a pariah.

As for the relationship to the territory, it is also totally destabilized by its sudden loss of worth. Indeed, the territory is deskilled at the economic and social level (land losses, agricultural, fishery and industrial losses...), at the level of the common natural heritage (contamination of fauna and flora...), but also at the aesthetic level (there is a different vision of the environment, landscapes, before and after the accident). The familiar environment (the vegetable gardens, places of leisure, etc.) becomes hostile. In addition, this disqualification is administratively endorsed through the official "zoning" of the affected territories according to the level of contamination. The accidental contamination of an environment therefore affects life both at the individual and living together at the level of the community, and moreover it disqualifies the world in which everyone deploys and acts. And everyone is speechless in the face of this situation because they have neither personal nor family experience that could help them face it. Beyond the anxiety linked to the hostile presence, a deep feeling of loss of control of the situation sets in for everyone, which goes hand in hand with a loss of self-confidence. The action of man on his daily routines becomes severed. Deprived of the means of control over his own situation and of the capacity to act to improve it, man loses his dignity.

The irruption of contamination in the environment creates an unknown world. There is a lack of words to understand it in everyday language, so rumors circulate among the population on the effects of radioactivity and the means to protect themselves which are not based on any scientific evidence.

For mourning to take place, in relation to the "world before" the accident it is necessary for the population to accept the new situation in which some aspects of the "living together" are irretrievably lost and man's relationship with his

environment, his territory, has become a hostile environment. For this work of mourning to be carried out, it is necessary for people to decide to protect themselves but also to develop a discourse on the accident and its consequences. They have to organize the memory through, for example, commemorative ceremonies to introduce symbols into society and also dialogue meetings in which everyone can testify about her or his experience and also express their views, concerns and expectations.

Another important dimension is that of exclusion, which gradually sets in. The individual finds themselves immersed in a new reality and at the same time they are excluded from it. This exclusion is reinforced. In two ways. Firstly, individuals do not know how to understand the new reality that surrounds them (lack of experience) and do not know how to react and act; they feel progressively isolated from this reality. Secondly, the management of the situation by authorities and experts reinforces this feeling of exclusion. To deal with these complex phenomena that are accidental pollution of technological origin, scientific and technical expertise is mobilized. It gradually takes hold of all affected dimensions of life and tends to confiscate them. The result is an “instrumentalization” of human action in the contaminated territories, which further reinforces the feeling of exclusion felt by individuals. Each of the steps that are traditionally found in risk assessment and management approaches, namely: measuring and evaluating the risk, introducing protection standards and finally implementing collective protective actions, participate in this process of exclusion. The measurement of radioactivity in the environment despite its technical dimension, is an activity that leads to a marked reduction in the complexity of the situation by reducing it to a single physical dimension: the quantity of energy released by the radioactive atoms present in a specific location, products or even in the human body. It is this indicator that serves as a guide to assess and manage the situation. Experts who take the measurements often exclude individuals from the process, thereby ignoring the human dimension of the situation.

The objective of this assessment for the authorities is to introduce standards to manage the post-accident situation which also reinforces the feeling of distancing from reality. These standards indeed tend to make a distinction between what is safe and what is not, whereas in reality, the situations are more nuanced. There is a very big difference between a sample of milk or rice whose level of contamination exceeds the marketing standard by a few percent and another whose level of contamination is two or three times higher than the standard. In practice, the application of norms erases the notion of quality which, on the contrary, makes it possible to differentiate the situations in a much finer way. Setting standards in a post-accident situation is therefore a delicate process because not only does it disqualify the environment and things, but indirectly also people.

A last point concerns the introduction of protective actions also called countermeasures, be they technical or administrative. Incidentally, the term countermeasure comes from military vocabulary: it means to render the enemy’s action ineffective. This choice of term shows that a post-accident situation is comparable to a war situation, which is easily identifiable in the discourse of the inhabitants of the contaminated territories who easily use the vocabulary of

war to talk about the accident and very often mention episodes of war that have happened in their living place throughout History. Having to confront death certainly explains this constant back and forth with the collective memory of episodes of war.

On the practical level, the protective actions are generally decided by experts, and introduced at the collective level based on emergency or recovery plans. In concrete terms, these various actions implemented aim at keeping people away from radioactivity or reducing the levels of radioactivity in the environment and food products. In this context where, due to the mere presence of radioactivity, individuals feel excluded, with no real possibility of controlling the situation, the introduction of collective protective actions further reinforces exclusion. The individual is seized and they become a cog in a mechanism that no longer depends on them. For many people, the implementation of protective actions, in particular those that profoundly modify ancestral relations with the environment and modes of production, is experienced as a second catastrophe. Overall, "the instrumentalization of action" to collectively respond to the problems posed by environmental contamination raises concern in the population, depersonalizes the individual and thus reinforces his exclusion and the world feels alien to the affected people. It also strongly contributes to the deterioration of social trust in authorities and experts.

The above developments allow us to better understand what is at stake for individuals who remain voluntarily or not in a contaminated territory. They also make it possible to better understand the different attitudes and strategies that are adopted by people to cope with the situation they face. A first attitude is that of risk denial. Some individuals repress the complexity, the feeling of worry and all the feelings that come to disturb the tranquility of everyday life. They refuse to see the situation as it is, and even convince themselves of the merits of their position by developing explanations tending to deny the risk. For example, many people say that after a certain number of years the radioactivity no longer affects their health because they are immune. Another attitude is that of resignation, of fatalism: people give up coping, they feel abandoned, they settle into a kind of apathy and the status of victim with often the denunciation of scapegoats. Denial and resignation generally lead to risky behavior for oneself and for others. For example, denial in families where there are small children can lead to the daily consumption of highly contaminated food without anyone worrying about the radiological quality of the food.

In reality, the inhabitants of contaminated areas face a constant dilemma: leave the area and abandon everything, or, conversely, stay, organize their lives, and prepare for the future of generations to come. Can we live here? This is the question that haunts most people. Those who think that there is no future for them and especially for their children on the territory leave. Those who stay often do so because they really have no other choice given their financial situation. Sometimes however, they stay because they have roots in the territory and by taking protective actions and by accepting the direct support of their community and the indirect support from national and international partners, they can build a future for their children. However, staying imposes people to remain in positions of awareness to cope with the situation. The price to pay

for holding this position is high, as they must constantly monitor the quality of their environment and maintain unwavering vigilance. In this position, it is very easy to succumb to worry, even stress. Therefore, maintaining such an attitude requires considerable clarity of thought and determination. Remaining vigilant in the long term is only possible for the residents by sharing responsibility within the local community and progressively identifying the key points on which their vigilance is required while relaxing on the other facets of their daily life. In this perspective, implementing local projects in the community is crucial and contributes to build a possible future for the community.

The following chapters show how experts can accompany people affected by a nuclear accident along a sometimes long and winding path to a better life. This is achieved through the so-called co-expertise process, which helps individuals regain their autonomy and recover their dignity that was damaged by the accident. This process implicitly involves dialogue with experts, measurements of radioactivity, and the implementation of projects to protect people and improve their living conditions.