



# **“A Paradise Inhabited by Murderers Deprived of Wickedness and Victims Deprived of Hatred”: Hiroshima, Chernobyl, Fukushima**

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*The horrors of the 20th century have resulted in a wedge driven between the evil caused and the evil intended. Now extreme evil may result from mediocre intentions or even from intentions to do good. The author considers such ideas using the cases of the civil nuclear disasters at Chernobyl and Fukushima. This text was first published in French shortly after the Fukushima disaster by the engineer and philosopher Jean-Pierre Dupuy*

## A new regime of evil

**I**n 1958, the German philosopher Günther Anders travelled to Hiroshima and Nagasaki to participate in the 4th International Congress Against Atomic and Hydrogen Bombs. He kept a diary all this time. After many discussions with the survivors of the disaster, he notes this:

“Their consistency in not talking about the culprits, in not saying that men caused the event; not to harbor the slightest resentment, although they have been the victims of the greatest crime - that is too much for me, it is beyond understanding.”

And he adds:

“They constantly talk about the disaster like of an earthquake, an asteroid or a tsunami.”

About the same time as Hannah Arendt, his fellow student, who was also his wife, Anders was trying to identify a new regime of evil. Arendt was talking about Auschwitz, Anders about Hiroshima. Arendt had diagnosed Eichmann’s psychological infirmity as “a lack of imagination.” Anders showed that it is not the infirmity of one particular man; it is that of all men when their capacity to act, which includes their capacity to destroy, becomes disproportionate to the human condition. Then the evil becomes autonomous from the intentions of those who commit it. Anders and Arendt pointed out the scandal that a complete absence of malignancy can cause immense harm; that a monstrous responsibility can go hand in hand with a total lack of wickedness. Our moral categories are powerless to describe and judge evil when it goes beyond the inconceivable. One must then resolve to say, as Hannah Arendt did quoting the lawyer Yosal Rogat, that “a great crime is an offense against nature so that the earth itself cries out for vengeance; that evil violates the natural harmony that only punishment can restore”. (1) The Jews of Europe have substituted for the word “holocaust” that of shoah, which means natural disaster, and, in particular, tidal wave, tsunami. This fact attests to the temptation to naturalize evil when men become incapable of thinking about what they are victims of or responsible for.

Hiroshima, like Auschwitz, a tsunami? What a twist of fate: in Fukushima, it was a genuine tsunami, a very material wave that came to awaken the nuclear tiger. Of course, this is a caged tiger: a nuclear power reactor is not an atomic bomb. In a sense, it is its negation since it restrains a chain reaction that it has caused. However, in the symbolic realm, denial asserts what it denies. When we say, “Fukushima has nothing to do with Hiroshima,” we are explicitly making the connection we say we do not want to make. Also, in real life, and here we are, the tiger sometimes escapes from its cage.

But Fukushima is also an industrial and technological disaster. The West has especially perceived this dimension because it is the very survival of its economic development model that is at stake. Caught between global warming and the depletion of fossil resources, it hoped that nuclear energy would be its way of salvation. Fukushima may spell the end of this hope.

Therefore, the loss of differences is not only between Hiroshima, moral disaster, and the tsunami, natural disaster. It is also between Hiroshima, moral disaster, and Fukushima, industrial and technological disaster. In the first case, Hiroshima, the evil results from the intention to do evil; in the second, Fukushima, evil results from the intention to do good. The great critic of industrial society, Ivan Illich (1926–2002), called this tragic turnaround counterproductivity. He argued that today’s greatest threats come less from the bad guys than from the industrialists of good. Bad intentions should be less feared than organizations like the International Atomic Energy Agency, whose mission is to ensure “peace, health, and prosperity throughout the world.” Anti-nuclear people who believe that, in their action, they have to portray their enemies most darkly do not understand that they are weakening their criticism by doing so. It is much more severe when the mega-machines operators that threaten us are competent and honest people. They cannot understand being criticized.

This autonomization of evil with respect to the intentions of those who commit it is the central theme of my reflection on evil. I gave the title to this text a memorable quote from Günther Anders that seemingly brings good news since it announces the “end of hatred.” However, this end to hatred is not the good news of the Christian gospel, the message of love; it is quite the opposite. Anders writes:

“Even as the world becomes apocalyptic, and it is our fault, it offers a picture... of a paradise inhabited by murderers without wickedness and victims without hatred. Nowhere is there a trace of wickedness; there are only rubbles.”

### **The lesson of Chernobyl**

I want to illustrate my remarks on the new regime of evil and its disconnection from human agents’ intentions with the very controversial question of the effects of prolonged exposure of a large population to low

radioactivity. This issue has poisoned the debate on the mortality and morbidity consequences of the Chernobyl accident. It is brought up again in the wake of the Fukushima disaster.

It is mainly because of fundamental disagreements on the question of “low doses” that such fantastically different values as 40,000 and 400,000 deaths caused by Chernobyl have been put forward with the same good faith by different assessors. Where then is the objective, scientific truth in this matter?

Raising the question in these terms implies assuming that there is a standard of scientific evaluation separable from other norms, such as ethical or legal ones. I submit that, in this case, at least, it is not.

To show this, it suffices to analyze the Chernobyl Forum’s conclusions, the international and UN body set up to draw lessons from the disaster of August 26, 1986 (2). A hundred experts worked for this Forum, physicists, biologists, doctors, economists, and unanimously reached conclusions which, they are convinced, are the last word of scientific truth. They admit, of course, that there are other truths, which they call “human,” “sociological,” or “psychological.” This concession immunizes scientific objectivity claimed as exempt from any contamination by what is not itself. However, in assessing the consequences of a disaster in general, Chernobyl in particular, we can doubt that there is a separate area that would be scientific assessment. This expression sounds like a contradiction in terms: in the field of values, science alone has nothing to say.

In 2001, an expert could say:

“Chernobyl has caused thirty-one deaths from injuries caused by two hundred sieverts, clinically attributed to radiation exposure, as well as two thousand easily curable childhood thyroid cancers. To date, there is no internationally validated evidence of a public health impact attributable to Chernobyl through exposure - emphasis added: radiation exposure.” (3)

This insistence on the notion of the causal consequence of radiation exposure is explained by the fact that the official thesis does not deny that the disaster had considerable “socio-psychological consequences.” Even those who estimate deaths in tens and not tens of thousands do not hesitate to claim that Chernobyl represents the greatest disaster that civilian nuclear power has ever known. How to orient ourselves in the maze of these apparent contradictions?

The dialectic implicit in the official thesis can be broken down into three stages:

1. The Chernobyl disaster produced considerable radioactivity (hundreds of times more radioactive material released than in Hiroshima). Still,

the causal consequences of radiation exposure will have been tiny compared to what was feared, announced, passed on by media interested in the sensational. Scientific objectivity obliges asserting it with force.

2. In fact, the populations concerned were very seriously affected, but this is because they believed themselves to have been very seriously affected, remaining in ignorance of point 1). For example, stress and anxiety could have produced the strange pathologies that we observe in contaminated areas; or else, the inhabitants systematically attribute the ills which overwhelm them to radioactivity and, living it as a fatality, neglect to take care of themselves.
3. The third moment derives from the first two: to break the mechanisms responsible for the gap between objective truth 1) and self-fulfilling beliefs 2), it is necessary to inform, communicate, educate so that people come to live with it, tame it, get rid of any anxiety - just as one learns to live fearlessly in the motorway space by submitting to a few simple and ultimately not very restrictive rules.

Why has this official truth been and still is the subject of so many disputes? For the twentieth anniversary of the disaster, in April 2006, the journal *Nature* published a special issue, the conclusion of which was:

“If a full, independent study of the consequences of the world’s worst nuclear accident is not established, and its results published for all to assess, wildly differing claims will continue, and public mistrust of the nuclear industry will grow further.”

This warning was not heeded, and Fukushima broke the camel’s back if we believe the epidemic of nuclear renunciation we are now witnessing.

In principle, estimating a nuclear disaster’s effects on human health uses three methods: direct observation, epidemiological investigation, and modeling. Rescuers in the early hours at Chernobyl received doses such that their deaths can be attributed with certainty to the accident. For anyone who was subsequently exposed to medium or low doses, things are much more complex. In principle, an epidemiological investigation could retrospectively assess the excess of malignant diseases that have affected populations over the rate normally expected. This investigation could not be carried out correctly in the case of Chernobyl for two reasons. On the one hand, the populations most affected are the liquidators and the people who had to be displaced. They were dispersed throughout the Soviet Union territory, and no rigorous follow-up could take place. On the other hand, the possible increase in the mortality rate from leukemia or cancer would have been low or even very low for the millions of people who received low doses. An epidemiological study could have detected it only at the cost of exorbitant resources that the Soviet Union could not mobilize when on the verge of decomposition.

Therefore, modeling has replaced the epidemiological investigation, the same modeling that must be used anyway to estimate future deaths.

The model used by the international radiation protection authorities was a “linear without threshold” model: it assumes that the effect on morbidity and mortality is proportional to the dose received, even for very low doses. In other words, there is no radiation threshold below which the effect is assumed to be zero.

However, when one reads the Chernobyl Forum report carefully, one discovers that the figure of 4,000 deaths announced as the final toll was only calculated using the linear model without a threshold on a small part of the world population that the radiation affected. Just 600,000 people are taken into account, or around 200,000 liquidators, 120,000 evacuees, and 270,000 others residing in the most contaminated areas. As for the millions more affected, the official estimate remains silent, which many have taken to mean that the disaster was not responsible for any deaths among them. If we apply the linear model without threshold to them too, at least for reasons of internal consistency, we find a death count equal to a few tens of thousands and not a few thousand.

What happened? When the radioactive doses are widely spread over time and distributed over a large population, it is impossible to tell any named person who dies of cancer or leukemia that she died of Chernobyl. We can only state that Chernobyl slightly increased her a priori probability of dying from cancer or leukemia. Therefore, we cannot name the thirty or forty thousand deaths that the nuclear disaster will have caused according to the linear no-threshold model. The official thesis is to conclude that they do not exist. A forest of corpses is the object of a very particular subtilization. At this precise point, scientific evaluation is inseparable from taking an ethical and even metaphysical position.

This discussion’s deep philosophical problem is explicitly addressed in one of the most important and influential works of twentieth-century moral philosophy, *Reasons and Persons*, by the British philosopher Derek Parfit. (4) This book was published in 1984, two years before the disaster. Under the name of “Five Mistakes in Moral Mathematics,” it dismantles in a premonitory way, the series of reasoning that experts have delivered in nuclear disaster or radiation protection.

Of the five errors analyzed by Parfit, I single out the following two. There are actions or facts which have an extremely low probability of producing a significant effect. Because they are insignificant, a moral or rational calculation may be tempted to hold these probabilities as zero. There are actions or facts which produce imperceptible effects but which affect a very large number of people. Because these effects are imperceptible, we want to pass them through profit and loss. In both cases, it means falling into the trap of the sorites paradox (literally: the paradox of the heap), known since the 4th century BCE. A hair grafted on the skull of a bald

person does not turn him into a non-bald, and yet a non-bald person is a person who has a certain number of hairs.

The sorites paradox is not the invention of an idle philosopher; we encounter it every time we vote in a national election between two candidates. Except in the extremely unlikely event (perhaps a one in a billion chance) where the votes are evenly split between the two options, it is indisputable that the ballot placed in the box by each of the voters had no effect. To the question: “Would the outcome have changed if I had voted differently (or if I had not voted)?”, Everyone must answer: no! And yet, the result of the vote follows immediately from the vote count. We know how to resolve this paradox. It is enough to resort to the symbolic mode of thought, which, in these situations, we do spontaneously. We interpret the results of such votes, even or especially when they are close, as the manifestation of the carefully deliberate choice of a collective subject: the people, the electorate, etc. From the perspective of a narrow conception of rationality, this collective subject called in for reinforcement is pure fiction. However, it dissolves the paradox on the moral plane, which here is that of responsibility.

In 1991, the consultation on the Maastricht Treaty governing the European Union gave France the advantage of yes, but extremely narrowly. It has been said: “In their great wisdom, the French people answered yes to Europe, but they also wanted to give a warning to all those who wanted to precipitate events.” If this way of speaking is legitimate, which makes a fictitious subject the bearer of deliberation and responsible for a state of affairs, the one stating: “The Chernobyl catastrophe is responsible for tens of thousands of deaths,” is no less valid. The sorites paradox is the same in voting and the health effects of low doses of radioactivity.

In any case, we can see from this example that objective evaluation cannot do without taking a moral stand. The deaths of Chernobyl are irreparably statistical, virtual deaths. Their number cannot be derived from an enumeration, only from a calculation. Deciding not to count them is an ethical choice. Making the opposite choice is the same.

What can we blame the international atomic energy officials for? I make the bet that they are competent and honest people.

I made this assumption in my book *Retour de Tchernobyl. Journal d'un homme en colère*, (5) and it has earned me death threats from anti-nuclear activists in my country. They did not understand that this assumption is the one that maximizes the gravity of our present situation. The intentions of those who rule us do not matter. It is the situation that matters. To be responsible today for civilian nuclear power, one must have this frame of mind that relegates ethical questions to a separate and, ultimately, secondary domain. This situation is the main source of the evil, not the supposedly malicious intentions of the nuclear operators.

## **JEAN-PIERRE DUPUY**

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### **NOTES**

1. Eichmann à Jérusalem, Paris, Folio, Gallimard, 2002: 478-479.
2. At the request of the International Atomic Energy Agency (IAEA), the Chernobyl Forum was established in 2002 to assess the consequences of the disaster. It brought together eight international organizations dependent on the UN, including the World Health Organization (WHO), the United Nations Environment Program, the World Bank, the United Nations Scientific Committee for the Study of the Effects ionizing radiation (UNSCEAR), and the IAEA itself, as well as the governments of Russia, Ukraine, and Belarus.
3. Remarks made by the IAEA representative at the WHO conference in Kyiv in June 2001.
4. Parfit Derek, *Reasons and Persons*, Oxford, Clarendon Press, 1984.
5. Dupuy Jean-Pierre, *Retour de Tchernobyl. Journal d'un homme en colère*, Paris, Seuil, 2006.