# The catastrophe of Chernobyl twenty years later

*JEAN-PIERRE DUPUY*

If we wish to prevent greater climate catastrophe, it is imperative that we prevent ourselves from extracting the more than one third of the fossil fuels, oil, gas and coal that still remain buried underground. Surely, the energy market will never be able of such an effort of self-constraint. Markets exist only to manage scarce resources. It turns out that fossil fuels, far from being scarce, are strongly overabundant if we take account of the climate change threat. I insist: we have three times more fossil resources than we have the right to use – otherwise, the climate apocalypse will be our fate.

The world nuclear lobby is aware of this and, both publicly and in secret, it strives to draw attention to the environmental threat because, as it sees it, therein lies the best chances for civil nuclear energy. But I ask, is this really the only choice left for us, between poisoning the Planet or some kind of technical dictatorship? So I would like to pose a background question: are the conditions required to make nuclear energy safe compatible with the ground rules of an open and fair democratic society? The management of the catastrophe at Chernobyl leads us do doubt this.

**Assessment or deceit?**

If we were to ascertain that opacity, dissimulation and mendacity are necessary conditions to assure an "image of safety", then the energy equation would remain unresolved.

What is most terrifying in the case of Chernobyl is that the experts' presumed competence is a far cry from the quality of thought worthy of the great problems it poses to society. Technocracy, never shy of accusing its opponents of irrationality and obscurantism, lacks the seriousness and that minimum discernment we have the right to expect from citizens who put in jeopardy the very possibility of a safe and worthy life on this Planet. Technical competence that does not "think" – to use Heidegger's phrase – that is the supreme danger.

To assess the effects of a nuclear catastrophe on human health, three methods can be used:

- Direct observation.
- Epidemiological research.
- Modeling.

Relief workers during the first hours after the catastrophe at Chernobyl – the so-called "liquidators" - received such high doses of radiation that, in all certainty, their death can be attributed to the accident. However, for the people who, immediately or afterwards, were submitted to lower dosages, things are more complicated.

In principle, epidemiological research can assess, retrospectively, how much above the expected rate the affected populations succumbed to malignant diseases. But this type of study could not be carried out appropriately in Chernobyl because the affected populations, the firefighters and the displaced inhabitants were dispersed throughout the entire territory of the Soviet Union and no follow-up was possible.

In lieu of epidemiological research, we had had to resort to modeling, the same modeling that must be used to estimate *future deaths*.

International radioprotection authorities used a linear model with no threshold. This means the model assumes that the effect on morbidity and mortality is proportional to the received dosage of radiation, even for very low doses. In other words, there is no radiation threshold below which the effect is deemed null.

If we read the report of the Chernobyl Forum with attention, we find that the 4,000 reported deaths were reckoned by applying the non-threshold linear model to a very limited portion of the world population affected by the radiation: approximately 600,000 people – 200,000 “liquidators”, 120,000 people who were removed from the site and another 270,000 residents of the most contaminated areas. As for the millions of other human beings also affected, the official estimate remains silent, which led the world to think that the catastrophe was not responsible for any of their deaths. This, however, is a travesty of the model method.

I was in Kiev and visited the site at Chernobyl, where it was mentioned that the removal of the 48,000 inhabitants of Pripyat, a neighboring city, only began 36 hours after the explosion. Among those displaced, 15,000 seem to have died in the six following months, heaped in the hospitals of Kiev. We were insistently reminded of the tragedy involving the 600 to 800,000 liquidators, the often-compelled volunteers who cleaned the site and absorbed the highest doses of radiation, and of which we know practically nothing about.

The Chernobyl catastrophe produced considerable radioactivity; actually, hundreds of times more radioactive material than in Hiroshima was released. Doctors and geneticists spoke to us at length about the effects of low doses of radioactivity on the dozens of millions of people who live, drink, eat and reproduce in a contaminated milieu: cancerous tumors, cardiopathies, chronic fatigue, unheard-of ailments and a feeling of helplessness affect a huge population, particularly the children and the youth. Not to mention the feared irreversible effects on the human genome.

Foto Agência France Presse/Sergey Supinsky - 18.4.2006

*On display at the Kiev Museum, in Ukraine, photographs of children who died in Chernobyl.*

Official reports, however, continue to mention "only" 4,000 people affected by "direct exposure to radiations", as if the accident had not impaired the lives of millions of unfortunate people who will transmit their misfortune to their offspring generation after generation.

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On August 2005, as the 20th anniversary of the nuclear catastrophe at Chernobyl, which occurred on April 26, 1986, drew nearer, I participated in a summer course, in Ukraine, dedicated to analyzing the consequences of the disaster.

One of the goals of the meeting was to organize a large traveling exhibition on the catastrophe, which was inaugurated last May at the Center of Contemporary Culture in Barcelona. (After Spain, the exhibit should come to São Paulo.) We spent one week in Kiev, after one day in the contaminated zone and some hours in the vicinity of the reactor that exploded – now covered by a steel and cement structure nicknamed "sarcophagus".

Back in Paris, I was disconcerted by the contrast between what I saw and felt there and what I read in the official UN report as the "definitive" account of the catastrophe. We were told of hundreds of thousands of deaths, but the official assessment acknowledged only 37 deaths until then and, perhaps, 4,000 when all was over. I decided to publish a book *Retour de Tchernobyl: Journal d'un homme en colère [Back from Chernobyl: Diary of an enraged man].*

The conclusion I reached on these reflections is that the international nuclear lobby, headed by the International Atomic Energy Commission, is willing to perpetrate the most scandalous dissimulations in order not to discredit civil nuclear energy. I do not believe people are dishonest. Why, then, do they act in this manner? Because they are afraid to unleash wholesale panic. They are much more afraid of the fear of the people than they are afraid of their machines. And that is what is most worrisome. Because fear can be a good adviser. Today we can say that Chernobyl has not served as a lesson at all. The World Association of Nuclear Operators, created after the catastrophe with the explicit intent of preventing its repetition, acknowledged recently that that, in average, the safety of the world's nuclear plants is disastrous and that a new Chernobyl would be enough for the organization to fall apart. The lessons of Chernobyl were swept under the rug with a misleading refrain: "It was a Soviet, not a nuclear accident".

For you to grasp the horror of the catastrophe, I will present two series of slides. The first contains pictures I took during our stay at Kiev and our visit to Chernobyl; the second has photos taken by the Ukrainian photographer Igor Kostine during the hours, days and years after the catastrophe. You will see the reactor that exploded, the work of the "liquidators" – the 800,000 firefighters, soldiers and volunteers who risked their lives to extinguish the fire in the reactor, remove the nuclear waste and build the sarcophagus. You will also see the city of Pripyat, where the plant's workers and their families lived: 50,000 people in all who were evacuated 36 hours after the explosion. The city is still there, almost intact, but deprived of life for the next 20,000 years. You will also see the legal procedures against those who were held responsible. The most difficult photos to endure are those of the baby monsters who were born from mothers who had the infelicity of being pregnant in Pripyat on that fateful April 26, 1986.

*Jean-Pierre Dupuy* is faculty member of the École Polytechnique de Paris and of Stanford University. He is the author of Retour de Tchernobyl: Journal d'un home en colère (Seuil, 2006). @ – jean-pierre.dupuy@mines.org

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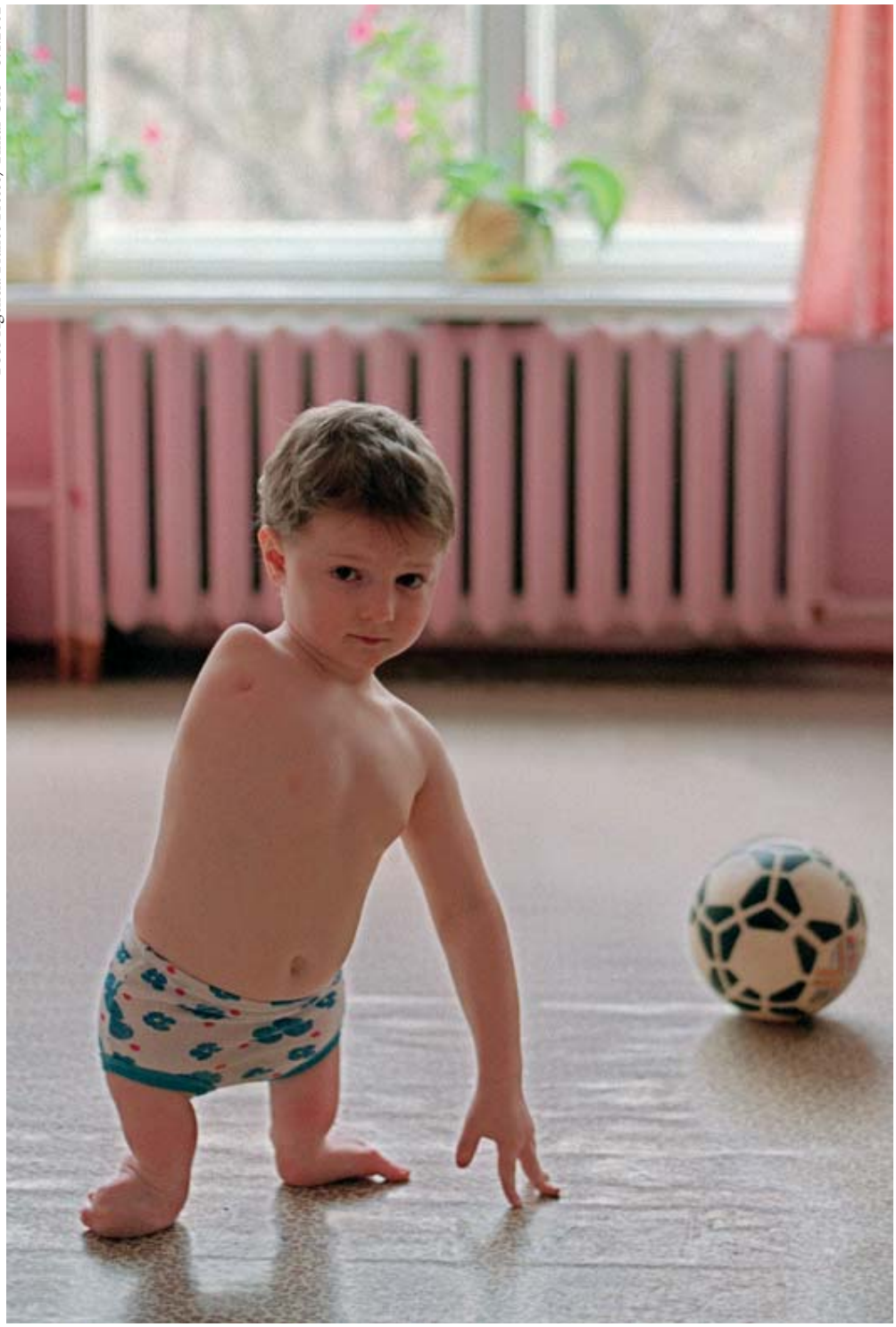
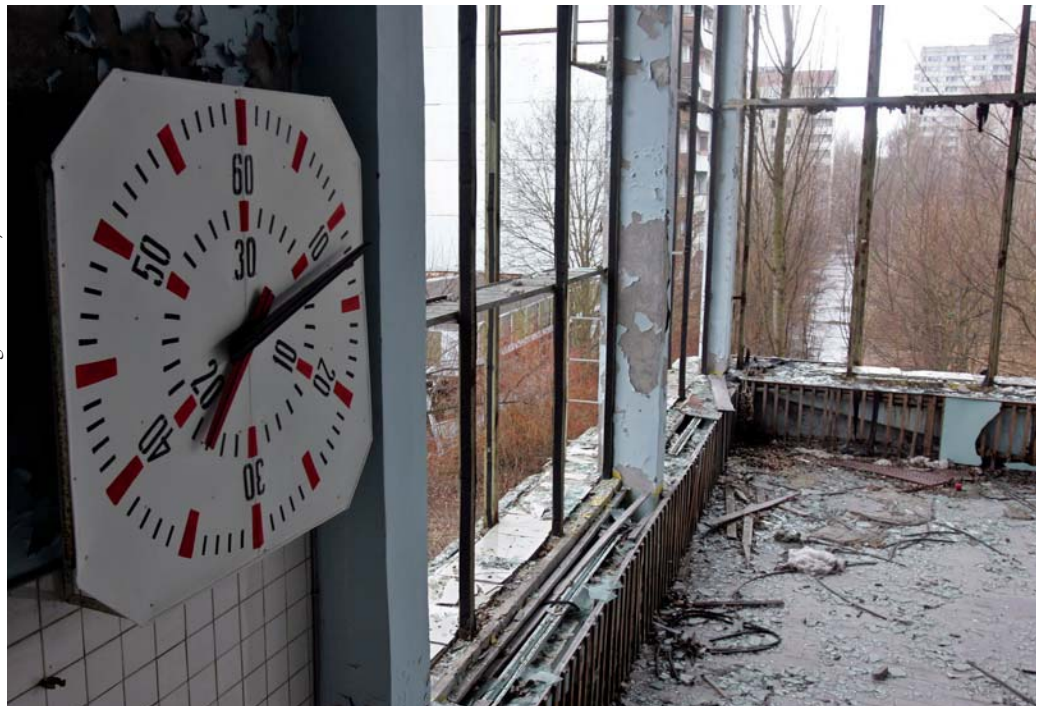
Foto Agência France Presse/Timur Grib - 8.4.2002



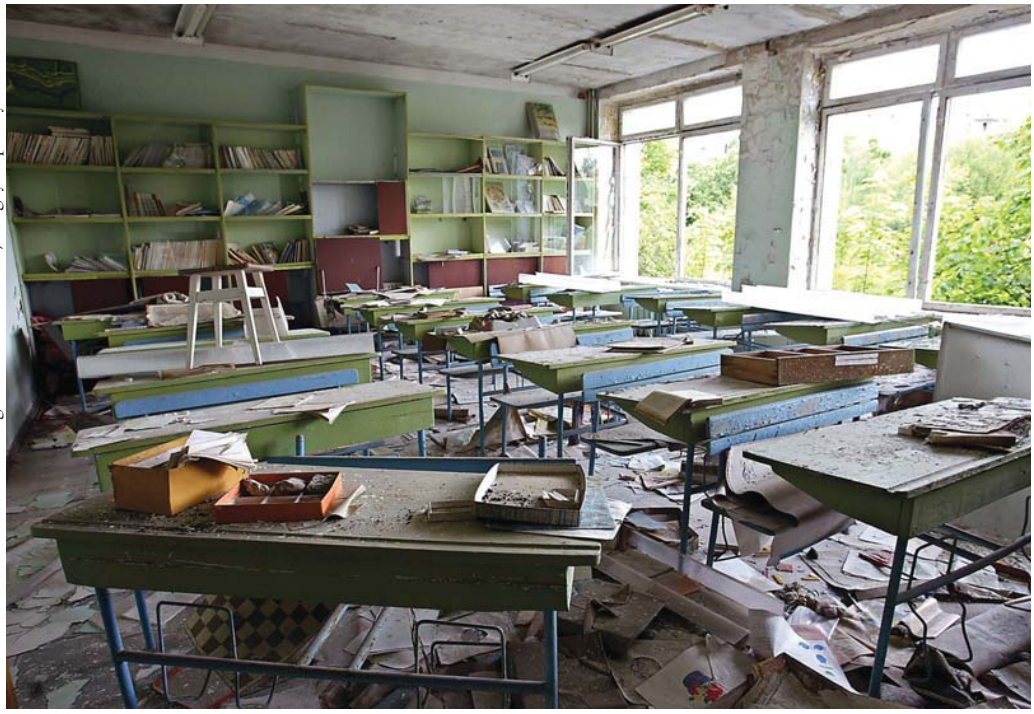
*One of the consequences of Chernobyl was a progressive increase in diseases, particularly in children, including fetuses in utero at the time of the accident, in 1986.*

Foto Agência Reuters/Gleb Garanich - 14.4.2006



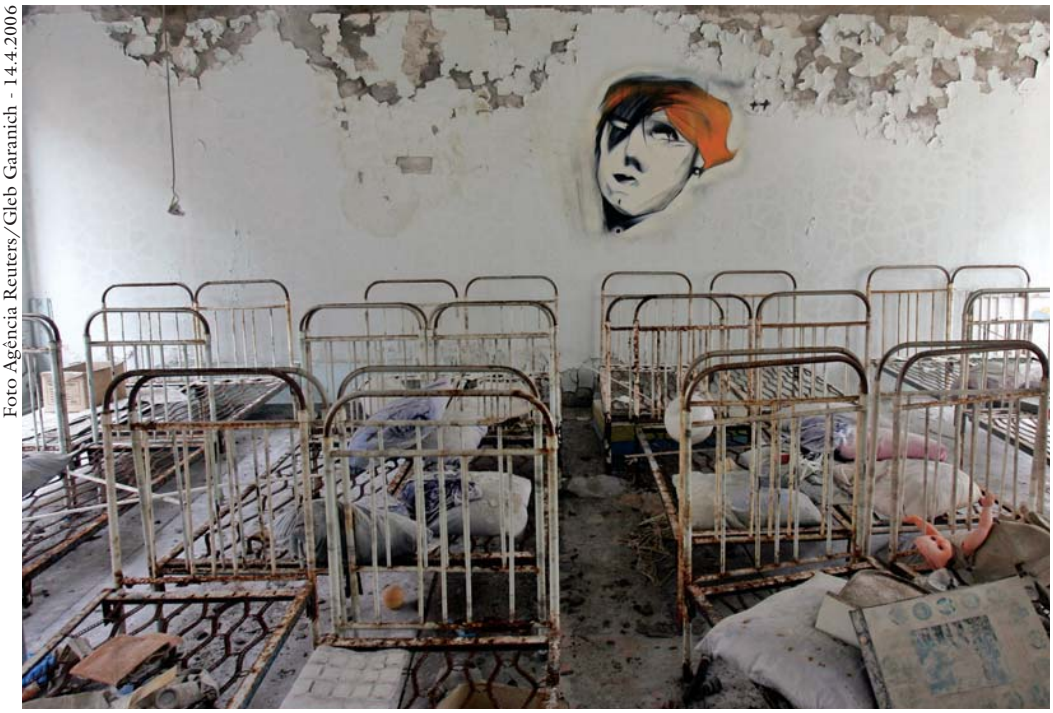
*The explosion in the reactor occurred at 1:23 am, April 26, 1986, and hit…*

Foto Agência France Presse/Sergey Supinsky - 26.5.2003



*…a children's school in the Pripyat region: shattered glass and material strewn on the floor.*

Foto Agência Reuters/Gleb Garanich - 14.4.2006

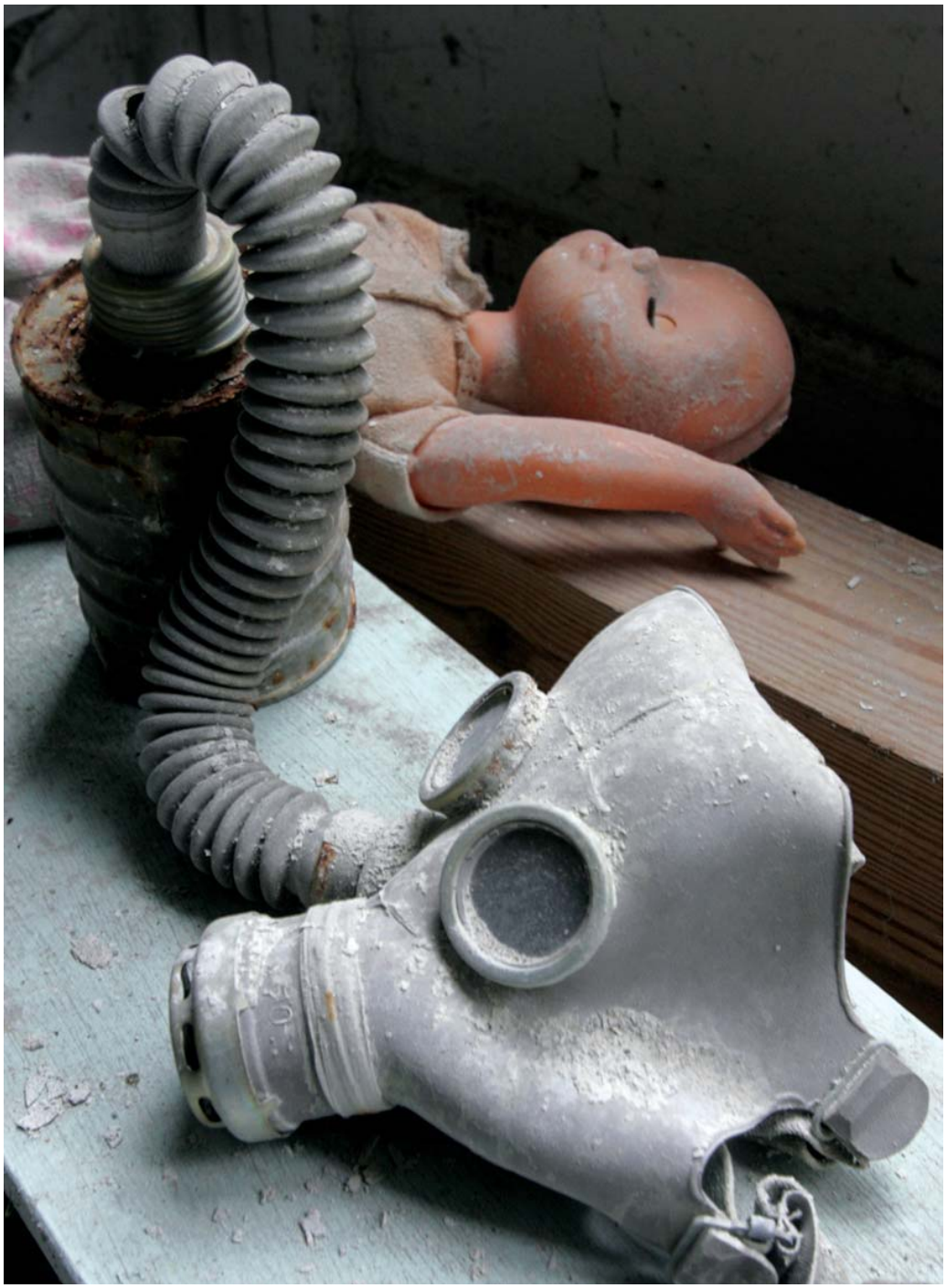


*Children's beds and toys in a nursery, burnt from the violence of the explosion.*

Foto Agência Reuters/Gleb Garanich - 14.4.2006

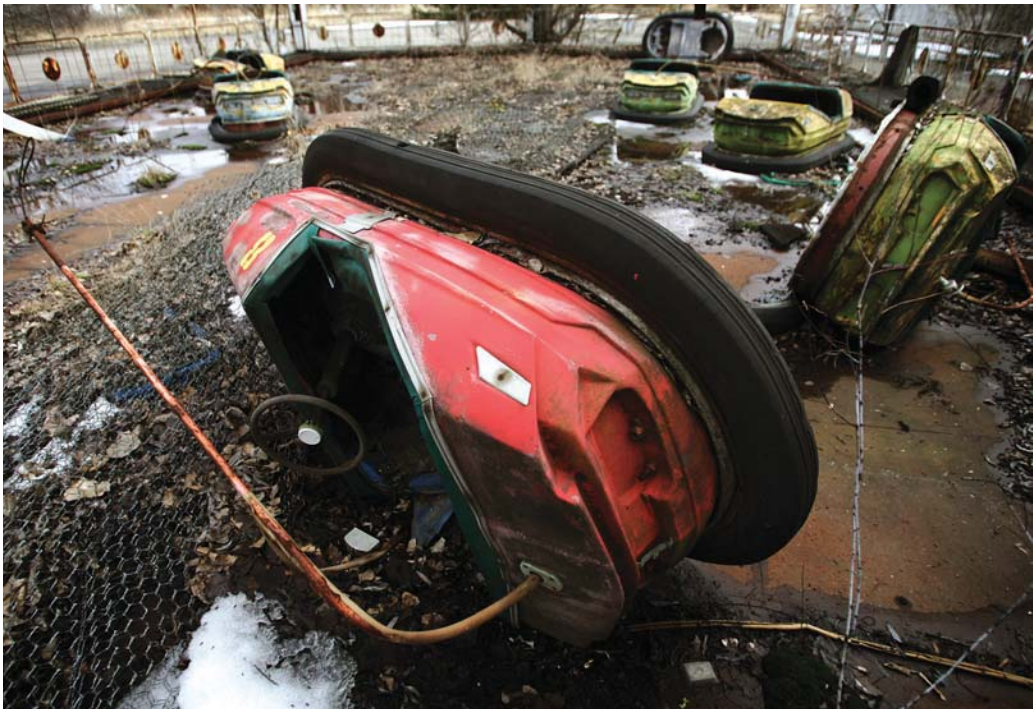
*Children's photo albums and a gas mask are living memories of the tragedy.*

Foto Agência Reuters/Gleb Garanich - 14.4.2006



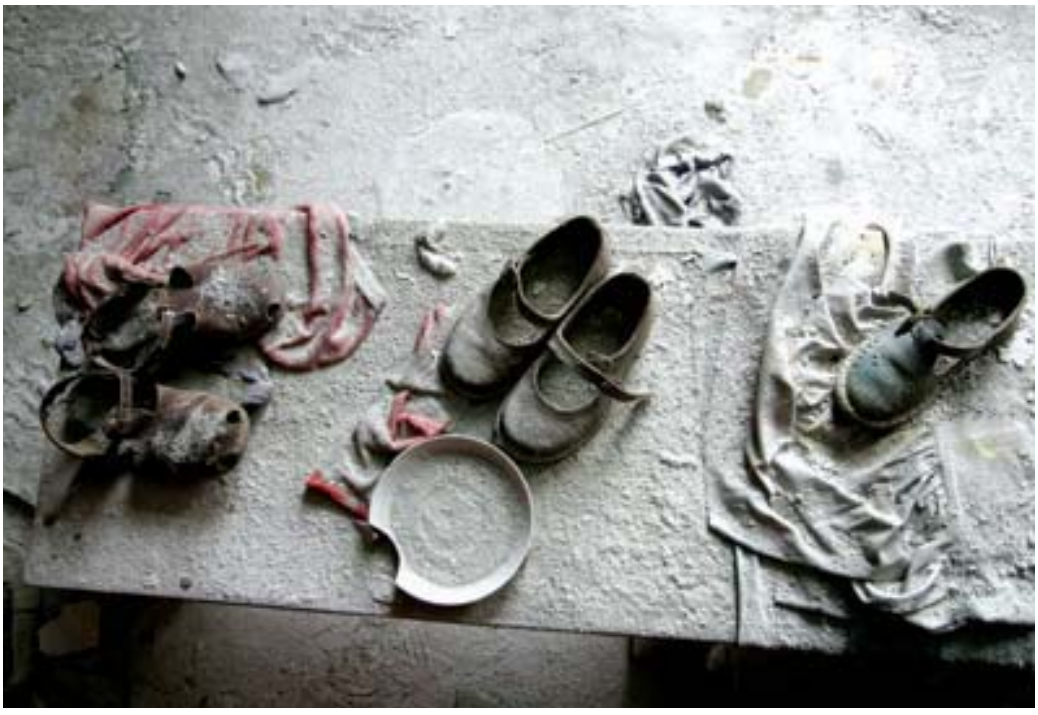
*Horror scene: the doll and the gas mask covered with dust in the Pripyat school.*

Foto Agência Reuters/Damir Sagoly - 31.2.2006



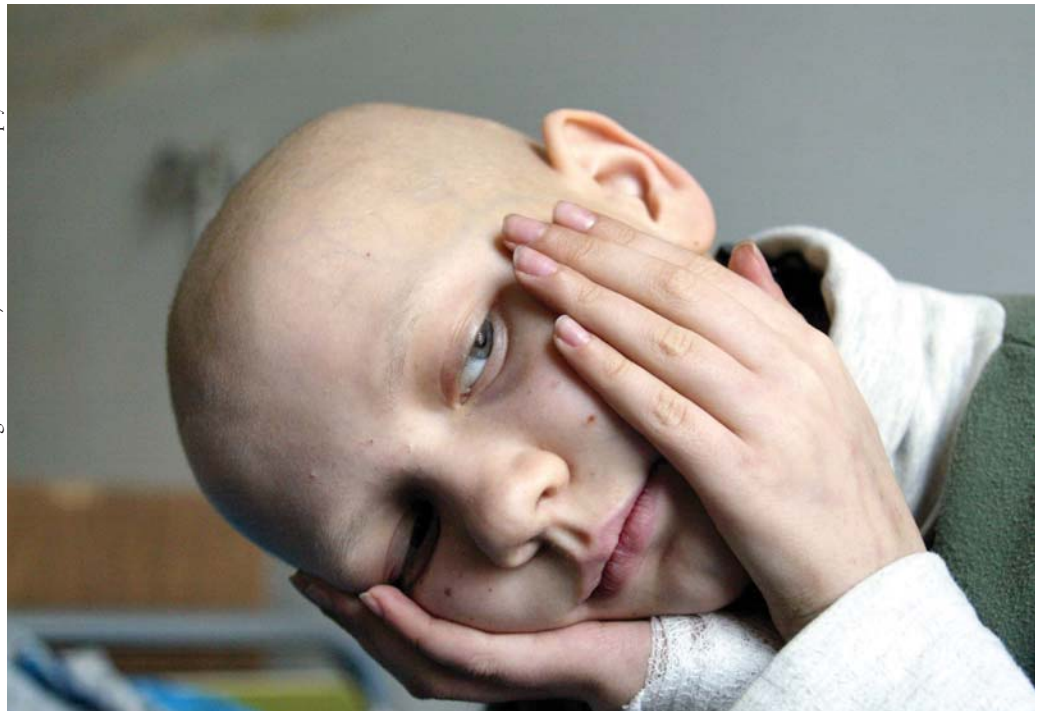
*The shock wave from the nuclear explosion destroyed a playground in Pripyat.*

Foto Agência France Presse/Sergey Supinsky - 27.2.2006



*Dense mortar powder and bricks reduced to dust cover children's shoes in the school.*

Foto Agência Reuters/Alexander Khudotioply - 25.4.2006



*Survivors of the Chernobyl radiation became susceptible to cancer.*

Foto Agência France Presse/Viktor Drachev - 9.6.2005

*Belarus Vladislav Petrov, not yet 4, contracted cancer caused by the radiation.*