BALTIC WORLDS

**Theme:** The Chornobyl disaster 40 years along. Lived memories

Guest editors
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Introduction.

# Chornobyl in the fog of war 40 years after the disaster

On December 15, 2020, Ukraine commemorated a landmark in its nuclear history: 20 years had passed since the last operating reactor at the Chornobyl Nuclear Power Plant was shut down. In connection with this event, and with the Day of Honoring the Participants of the Liquidation of the Consequences of the Chernobyl Disaster, held annually on December 14th, the Ministry of Culture of Ukraine announced its intention to apply for inclusion of the Chornobyl site in the UNESCO World Heritage list. In 2019 more than 124,000 people had visited the site, many of them in the wake of the hugely popular HBO series *Chernobyl*. Tourist interest was steadily growing.

The idea to transform a heavily radioactively-contaminated area into tourist and heritage site surprised many people.[1] Yet in the 2010s and early 2020s tourism had invigorated the economic and cultural development in the zone, and proposals how to expand this potential were plentiful. But the Russian invasion of Ukraine – including the Chornobyl Exclusion Zone (CEZ) – in February 2022 put an abrupt and violent end to these plans.

On a visit to the Chornobyl zone, in winter 2025, that is a few months before the 40th anniversary, these pre-war visions of the future of the CEZ appeared almost surreal. Far from a place of commemoration and heritage, the zone had become a military site and a borderline grey zone, dangerous not so much because of ever-present radioactivity that one learned to measure and manage in order to protect oneself, but because of Russian mines, bombings, and other ongoing military threats and defense-related activities.

**"FAR FROM A PLACE OF COMMEMORATION AND HERITAGE, THE ZONE HAD BECOME A MILITARY SITE AND A BORDERLINE GREY ZONE."**

**THE FOLLOWING** essays in this theme-issue aim to capture a snapshot of that 40th anniversary amidst the ongoing war. These essays were written by researchers in life sciences, humanities and social sciences, as well as practitioners of the arts, many of whom have worked on Chornobyl issues in Ukraine, in Eastern and Western Europe and in North America for some time. They engage the effort to understand the impact of the ongoing violence unleashed by Russian troops on the legacy and memory of Chornobyl writ large. These impressions have been laid out in multiple, layered visions and memories of Chornobyl: Chornobyl as a symbol of technological failure, a reminder of local and national tragedy and resilience, and a place for international technoscientific and humanitarian cooperation and collective reflection about nuclear and other technogenic risks.

The authors have experienced the ongoing violence in different ways and through different personal lenses. Those authors who, like Denys Vyshnevskyi, worked in the Chornobyl exclusion zone for extended times expe-

A photo showing the damaged containment vessel at the New Safe Confinement (NSC) in the Chornobyl exclusion zone, following a drone attack on February 14, 2025.

PHOTO: TETIANA DZHAFAROVA/AFP/TT

rienced its destruction and transformation firsthand, and feel how their daily work has been profoundly affected by the war. Several continue to live, work and write in Ukraine, between Kyiv and the CEZ, under incessant aerial attack alerts, explosions, and interruptions in electricity and heat which they have chosen not to highlight in their compelling analyses of the issues and events. Others have endured the war on a daily basis, yet in a mediated way, in physical safety, sometimes virtually, and other times through testimonies of relatives and friends in Ukraine.

The war has affected the way we see Chornobyl and nuclear issues more generally. In spite of the profound differences in our experience of the war, several common themes go through the contributions in this issue. They include the changing spatiality and temporality of the disaster; the difficulty in disconnecting peaceful and military technologies and risks; the physical legacies of geopolitical shocks and constraints; and the role of individual, collective and political memory in the disaster.

**THAT RADIATION** has no borders was one of the first lessons that international community learned after Chornobyl disaster, indeed in its first days when the Soviet authorities tried to keep secret from Soviet citizens and international community alike the extent of the dangers. The radiation cloud was detected first in Sweden and then other European countries and beyond. However, national and nuclear borders dramatically reappeared in importance when they were violated by Russian troops who invaded Ukrainian territory through Chornobyl exclusion zone in February 2022, stirring up radioactivity and taking station personnel as hostages. More than 400 kilometers of the Ukrainian border with Belarus go through the CEZ as Denys Vyshnevskiy reminds us in his essay. The war made it impossible for zone personnel to commute as normal to and from Slavutych, the residential city built to replace the evacuated atomic city of Prypiat and support CEZ research, monitoring and other activities, to their places of work.

**“THE WAR HAS AFFECTED THE WAY WE SEE CHORNOBYL AND NUCLEAR ISSUES MORE GENERALLY.”**

The closing of the borders due to the military conflict challenges the many transnational connections that became possible through various forms of cooperation to mitigate the consequences of the Chornobyl accident, from scientific research to humanitarian assistance to children’s aid. Olena Pareniuk and Kateryna Shavanova write how scientific cooperation came and went during the post-Chornobyl decades, but became a source of support to researchers and others after the Russian invasion and war. Olga Bubich followed a generation of young Belarusians who faced severe social and economic crises after the disaster and collapse of the USSR. Yet international programs for “Chornobyl Children” allowed hundreds of thousands of them to experience life abroad and created

PHOTO: OLGA BUBICH

International programs for Chornobyl children allowed hundreds of thousands of them to experience life abroad.

life-long ties between the people whose countries used to be on the different side of the Cold War divide. While making physical space of the Chornobyl zone inaccessible, the war made more prominent virtual storytelling about the disaster, writes Magdalena Banaszkiewicz. The CEZ has become a "zone of memory," shaped by digital mediation and virtual immersion.

**THE WAR ALSO** transformed dominant temporalities of the disaster. As Pareniuk and Shavanova insist in their essay, the war reveals that the Chornobyl disaster was never a completed event of the past, but an ongoing disaster that will have to be mitigated for decades, and it is finally a source of important new understandings about the nuclear enterprise. Counterintuitively perhaps, they also show that Chornobyl has recently been transformed from a "territory of consequences" into a "territory of solutions", becoming a source of expertise that helps Chornobyl scientists to document and evaluate the damage brought about by the current war on the environment and to anticipate the ways to recovery. For instance, drainage of the cooling pond at the Chornobyl Nuclear Power Plant (NPP) generated important data that could be used in environmental remediation after Russian troops blew up the Kakhovka Dam on the Dnipro River in June 2023. Unfortunately, the opportunity to apply knowledge generated in Chornobyl zone elsewhere testifies to the repetition of the patterns of colonial destruction of people and nature.

The recent invasion of the Chornobyl zone reminds of other wars. The "liquidation of the consequences of the Chornobyl disaster", as the Soviet authorities called the post-disaster mitigation effort, relied heavily on military personnel and machinery. For some Soviet citizens witnessing the effort, such as the talented Ukrainian artist Maria Prymachenko, who lived in the village of Bolotnia a few kilometers from the Exclusion Zone, it brought back the memories of the deathly battle against the Nazis during the Second World War. Oksana Semenik shows how the theme of the war, and more specifically of nuclear war, emerges in Prymachenko's paintings. The post-disaster emergency effort was also intentionally portrayed as a life-and-death battle against a dreadful (radioactive) enemy in the Soviet official media, as Stanislav Menzelevskyi analyzes in his essay on the Soviet Chornobyl documentaries. Prymachenko, who died in 1997, could not witness the current war. Yet, symbolically, during the first days of the Russian invasion a shell struck the Ivankiv Local History Museum where 25 of Prymachenko's paintings were on display – 14 of the works could be saved.

The cyclicity of time and violence was felt by the inhabitants of the village of Vilcha, situated in the CEZ, who were forced to abandon their homes twice. First, the entire village was relocated from Polissia, the extensive forested and marshy area that surrounds the power plant, to Kharkiv region, where a new Vilcha was built, and more recently its residents have had to evacuate because of the full-scale Russian invasion of Eastern Ukraine. The cycle of violence confronts communities and societies with the challenges of fragility and resilience. In her essay Viktoria Naumenko shows how, in spite of having lost twice their physical homes, Vilcha residents strive to rebuild their sense of belonging through solidarity, care and shared memories.

**THE WAR AND** occupation point to another crucial lesson of the Chornobyl disaster that has not been learned: the vulnerability of civilian nuclear infrastructure in times of military conflicts and the need to integrate this infrastructure into international security regimes. More broadly, Russia's ongoing violence against Ukraine highlights the critical entanglements between so-called "peaceful" and military nuclear technologies. The atom was "born violent", as Robert Jacobs, quoted by Stanislav Menzelevskyi, reminds us: indeed, the first nuclear reactors were created to produce plutonium for nuclear bombs. In her contribution Mariana Budjeryn provides the overview of Ukrainian nuclear history that encompasses both military and civilian nuclear technologies. The Chornobyl-type RBMK reactor itself had its origins in the USSR's graphite-moderated military reactors and could, if needed, produce plutonium (Pu). Pu is used mostly for bombs, although the failed promise is that it will be used in so-called breeder reactors – but only Russia has operating commercial scale breeder reactors. The Chornobyl disaster, Budjeryn shows, played a role in the Ukraine's decision to abandon its nuclear weapons arsenal upon the Soviet collapse. This decision ultimately made Ukraine vulnerable to Russia's aggression. Russia has been regularly threatening to use its nuclear weapons both against Ukraine and against Western countries supporting Ukraine in the war. Moreover, Russia's war on Ukraine involved its total disregard for nuclear conventions in its

**"RUSSIA'S ONGOING VIOLENCE AGAINST UKRAINE HIGHLIGHTS THE CRITICAL ENTANGLEMENTS BETWEEN SO-CALLED 'PEACEFUL' AND MILITARY NUCLEAR TECHNOLOGIES."**

conquest of the Zaporizhzhia NPP, the largest NPP in Europe, and its transformation into a military outpost and a potential dirty bomb.

In their scientific analyses, sociological investigations, and cultural studies, the authors of this *Baltic Worlds* edited volume have emphasized the many, often paradoxical meanings of the Chornobyl zone and of the Chornobyl disaster that are in constant flux. In her discussion of the testimony of Japanese hibakusha and accounts of Chornobyl survivors, Florence Fröhlig points to one of the sources of this diversity: the contrast between two kinds of memory, political and cultural. The former often serves to support state efforts at "closure and national integration," whereas the latter preserves "trauma, ambiguity and [...] loss."

**EVEN THE WAYS** of spelling Chornobyl point to the ongoing transformations of, and clashes between different meanings, temporality and spatiality of the disaster. The most widely used derivation of Chernobyl is from the Russian language; English language dictionaries still propose it as the only correct one.[2] Yet, if we follow the geographical principle, we should use the spelling derived from Ukrainian, that is "Chornobyl", as the site where the NPP is situated. Adopting the less-used Ukrainian spelling, as we do in this special issue, matters politically, of course, as it signals one's positionality towards, and distancing from, the legacy of the Russian colonial violence. As Banaszkiewicz points out in her essay, this shift gained formal recognition through the United Nations General Assembly resolution endorsing the Ukrainian transliteration "Chornobyl" instead of "Chernobyl" in December 2025. We have used "Chernobyl" when quoted sources and organizations use that spelling, as Robert Jacobs does in his review of Melanie Arndt's book which also employs "Chernobyl". Yet, Chornobyl has become so much more than a concrete geographical or physical place: it has marked imaginaries, environments and bodies beyond Ukraine and Ukrainians, and other affected people might claim the right to their own way of spelling Chornobyl. For instance, Belarusians, whose territory received most of radioactive fallout from the accident, might defend the right to refer to "Charnobyl," coming from Belarusian.

Granted, it is not possible to erase the impact of colonial violence by simply changing spelling. Indeed, "decolonization is not a metaphor," as scholars Eve Tuck and K. Wayne Yang insist, but should refer to the return of land to indigenous populations.[3] And it is clear, and has become even more painfully obvious during the Russian invasion, that the Ukrainian people are still dispossessed from the land in Chornobyl by radiation and elsewhere by Russian occupiers. Svitlana Matviyenko describes this type of colonial legacy as "vertical occupation."[4] This occupation transpires in the long-term underground contamination, such as radioactive pollution from nuclear sites, including Chornobyl. Similarly, widespread laying of mines and unexploded ordnance will continue to dispossess Ukrainians from their land long after the occupiers have left.

Some people will have the possibility–and choose to–escape to less contaminated and safer places. Others will not be able to escape, like the artist Maria Prymachenko, who chose to stay, being acutely aware, as another elderly woman cited in Oksana Semenik's essay, that it is impossible for them to escape their own poisoned or otherwise occupied land "far or for long." After all, as Melanie Arndt discusses in her book on the Chornobyl children – reviewed here by Robert Jacobs – we all have to learn "the art of living on a damaged planet"[5] wherever we end up.

**IT IS IMPORTANT** to remember that technogenic, military and other damage will never be inflicted equally everywhere or on everyone at the same time in the same ways, and that deep injustices will persist. This holds for the ongoing war in Ukraine. Our obligation, therefore, should be to recognize and to name this injustice and search ways of remediating it.

The essays here ultimately demonstrate that the peaceful atom is always at risk of being a site of war. They reveal how engineers and scientists struggling to do their work in the face of fluctuating border zones, drones and mines; citizens and their children caught trying to live between war and peace; farmers and Chornobyl re-settlers eking out daily life while soldiers fire rifles in the distance; artists, film makers and others striving to make sense of the invasion; and government officials seeking geopolitical and military advantage have transformed and are transformed by the violence of war. Chornobyl's temporal and spatial; military and economic; and cultural and political impacts will remain in flux far beyond the decay of radiation that first overwhelmed the zone 40 years ago.

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## references

1 Yet see the study of this phenomenon by Magdalena Banaszkiewicz in her book *Heritage and Tourism in the Chornobyl Exclusion Zone* (2022), and read her essay in this theme issue, see page 26.

2 For definition of Chornobyl in British English see "Chernobyl", *Collins*: https://www.collinsdictionary.com/dictionary/english/chernobyl and "Meaning of Chernobyl in English", *Cambridge Dictionary*: https://dictionary.cambridge.org/dictionary/english/chernobyl

3 Eve Tuck and K. Wayne Yang, "Decolonization is not a metaphor", *Decolonization: Indigeneity, Education & Society* vol. 1, no. 1 (2012): 1–40.

4 Svitlana Matviyenko, "Vertical Occupation," *London Ukrainian Review*, March 4, 2024. Available at: https://www.londonukrainianreview.org/posts/vertical-occupation/

5 Anna Lowenhaupt Tsing et al. (eds.), *Arts of Living on a Damaged Planet: Ghosts and Monsters of the Anthropocene* (Minneapolis: University of Minnesota Press, 2017), quoted in Melanie Arndt, *Chernobyl Children: A Transnational History of a Nuclear Disaster* (Cambridge: Cambridge University Press, 2025), 8, 11 and elsewhere.

PHOTO: DENYS VYSHNEVSKIY

# CHORNOBYL IN THE WAR ZONE

by **Denys Vyshnevskiy**


## abstract

The first news from Chornobyl was about gunfire near the Buriakivka radioactive waste storage facility. By noon there were images: Russian tanks near the Administrative Building No. 1 of the plant. Denys Vyshnevskyi, the Head of Department at Chornobyl Radiation and Ecological Biosphere Reserve writes here about the occupation and how life changed in the Exclusion Zone. For many research groups, 2022 became the year of accepting a bitter truth – Chornobyl research was being suspended indefinitely.

**KEYWORDS:** Chornobyl, Exclusion Zone, Russo-Ukrainian war.

Over 25 years of working in the Exclusion Zone, the one lesson I have learned is this: never be surprised by anything. Changes can come unexpectedly – and quite radically. Against the backdrop of stability, slow routines, and the long-standing regularity of Chornobyl's working life, they appear as catastrophes and a reversal of the universe itself. To describe this dynamic, the theory of punctuated equilibrium by Eldredge and Gould or Nassim Taleb's Black Swan theory fits best. Under such conditions, a Chornobyl expert must resist the feeling of sufficient competence and self-confidence – because they amount to the sin of pride.

The full-scale invasion on February 24, 2022 radically changed the design of activities in the Exclusion Zone. Occupation, de-occupation, restoration of operations, strengthening of border defense – these are the terms used to describe the Zone since the beginning of the war. Yet they do not reveal the complexity of the situation, which lies in balancing the changes brought by occupation and martial law with the continued fulfillment of the functions assigned to the Zone and its institutions, as well as the ways human activity adapts to new conditions.

## Zero mark, or baseline indicators

The Dytiatky checkpoint is the main gateway to the Zone from Kyiv. The primary flow of people and cargo passes through it. In the 1990s and 2000s, to the left of the radiation control building stood a board listing the main objectives of state policy implemented in the Exclusion Zone. There was no mention of national security, defense, or border protection.

The Zone is located in the very north of Kyiv region, along the border with the Republic of Belarus. Four hundred and eleven kilometers of state border form the Zone's northern boundary. No matter how many times I encountered it, I always felt its ephemeral nature. It existed on the map, but not in the landscape. There were no engineering structures, no watchtowers, no barbed wire, no control strips. Only occasionally did small signposts indicate that the state border of Ukraine passed here. Roads across the border were mostly open. If you didn't look at your GPS, you would only realize you had left the country upon seeing the sign "Gomel Region."


The Exclusion Zone. MAP: WIKIMEDIA COMMONS

**FROM THE BELARUSIAN** side, the attitude toward the border was different. In the 1990s there were cases when Belarusian border guards detained our foresters and confiscated vehicles. It was easy to do – a single road could run partly through Ukrainian and partly through Belarusian territory. The most troublesome section was a wedge of Belarusian land between the Zone and Chernihiv region. Transportation arteries from the Zone to the satellite city of the Chornobyl NPP, Slavutych – the Semikhody-Slavutych railway and the highway – passed through it. On the highway stood a Belarusian customs and border checkpoint serving exclusively vehicles traveling from Ukraine to Ukraine through 30 kilometers of Belarus.

**"EUROPEAN BISON WERE RECORDED NEAR THE BORDER, AS WERE THE FIRST OBSERVATIONS OF BROWN BEARS."**

From a professional point of view, the border was fascinating. It contained the most valuable areas for biodiversity conservation. A vast, wild floodplain of the Prypiat River with a meandering channel and numerous oxbow lakes. From the Chornobyl NPP to the town of Chornobyl, the Prypiat is merely an artificial canal – diverted during construction of the cooling pond. The true Polesian Amazon could only be seen there and partially between Chornobyl and the Kyiv Reservoir. Along the border lie old deciduous forests and wetlands. On the left bank, sandy dunes remain from the 1992 fires that cleared artificial pine plantations. European bison were recorded near the border, as were the first observations of brown bears.

**THE PROCESS OF** establishing a true state border was underway, but proceeded slowly. In the 2010s, delimitation began to be discussed. At the end of 2014, a radiological survey of the border was conducted. Staff from the field department of EcoCenter walked the entire Chornobyl border section with dosimeters and sampling equipment. In 2019, geodetic demarcation began. Specialists from both countries determined border points and placed markers in the ground. The Reserve also participated in this work. Our employee, Stas Humenyuk, received a Belarusian border guard patch as a gift. Six years later, Chief Sergeant Humenyuk would be killed by a missile strike on the Kherson front.

Units of the State Border Guard Service of Ukraine were not directly stationed in the Zone, though they were present. The nearest command post was located 7 kilometers beyond the Dytiatky checkpoint. Border guards patrolled the southern perimeter of the Zone from the outside and called it the "rear boundary."

It would be wrong to say everyone was satisfied with this situation, especially after 2014. Once, I attended a discussion among experts who clearly outlined the problem of the border's transparency. The Exclusion Zone contains numerous radiological facilities requiring physical protection: the decommissioned Chornobyl NPP, spent nuclear fuel storage facilities, fuel transportation operations, radioactive waste repositories, and more. None of this was protected from the border side.

## Signs of tension

The first time the border became an actual threat was in 2016. That summer, Russian-Belarusian military exercises were underway. At the Paryshiv checkpoint, police officers told us that an unmanned aerial vehicle had been recorded over the village of Teremtsi.

In autumn 2019, we were working on the northern left bank right along the border. The only road toward Belarus was blocked by concrete slabs painted white with the word "Ukraine." Stas Humenyuk suggested we go on a "foreign business trip." Why not? Our drone had detected no activity on the other side. We drove around the blocks and followed a road running above a flooded drainage system. Fifty meters in stood

a sign of the Polesie State Radiation-Ecological Reserve. This was already Belarusian territory. The road looked neat: no fallen trees, good surface condition, generally maintained. Humenyuk didn't like it.

> **Why spend resources maintaining a road with no functional purpose? That's suspicious.**

For him, that line of thinking was normal. He was a veteran of the Anti-Terrorist Operation.

**AT THE END OF 2021,** Belarus began provocations along the EU border – better known as the migration crisis. To secure the Belarusian border, Ukraine's Ministry of Internal Affairs launched Operation Polissia. National Police, Border Guard Service, and National Guard units reinforced border areas. Judging by press releases, the main threat was seen as provocations and the arrival of illegal migrants.

Russian-Belarusian exercises began again. Few in the country wanted to believe in a possible war and an offensive from the north. Personally, what struck me as suspicious was the presence of Kadyrov's forces. Deploying Rosgvardiia's Chechen units into the Polesian forests seemed excessive for mere exercises. It looked serious.

Then, like in chess, a symmetrical move from our side: exercises in the city of Prypiat – armored personnel carriers, mortar fire, tactical drills. The images were impressive, but these were Interior Ministry forces – essentially light infantry. In February, police units were reinforced by the military regiments in charge. Personnel exchanged shortened AKS-74U rifles for AKM rifles.

On February 16, Russian troops deployed pontoon bridges across the Prypiat River in the Belarusian Zone. On February 17, the Exclusion Zone was closed to tourist visits. Zone employees traveling to Slavutych saw large concentrations of Russian military equipment at the Komarin border checkpoint. Russian troops stood openly, demonstrating strength and superiority.

Everything froze in a dense fog of uncertainty.

## War

It began like it did for everyone – early Thursday morning. A call from Boryspil at 4 a.m.: missile strikes on the airport. I called Serhii Paskevych, Deputy Director of the Institute for Safety Problems of Nuclear Power Plants in Chornobyl. His response was brief:

> **No time – I'm evacuating Institute staff.**

The first news from Chornobyl was about gunfire near the Buriakivka radioactive waste storage facility. By noon there were images: Russian tanks near the Administrative Building No. 1 of the plant. Between these reports came information about the deployment of a crisis headquarters of the State Agency for Exclusion Zone Management in Ivankiv.

A colleague posted briefly on Facebook: "The CEZ (Chornobyl Exclusion Zone) is over." And that's how it felt.

I called Yevhen Fedorovych, a self-settler living in Chornobyl. He had decided to stay. He said explosions could be heard across the Prypiat River and helicopters were flying. He had already survived one occupation as a child in 1941–1943. Over the next two days we spoke several times. Then communication was lost. The Exclusion Zone turned into a black hole from which no information emerged.

A short news video showed our special forces burning a Russian military column at the Ivankiv roundabout near the "Egg" monument. I had driven through that circle countless times going to and from the Zone. Interrogations of the first prisoners captured near Kyiv revealed a consistent story: they entered through the Zone, first stop – the Chornobyl NPP, then toward Ivankiv, from there to Vyshhorod or Makariv.

**ONE INTERROGATION** stayed with me – a completely disoriented colonel from the Russian Special Police Force. Watching him, I understood that his unit would have operated after full control of the territory was established: clearing neighborhoods, working through lists of "unreliable" individuals, enforcing occupation order.

**"RUSSIAN TROOPS STOOD OPENLY, DEMONSTRATING STRENGTH AND SUPERIORITY. EVERYTHING FROZE IN A DENSE FOG OF UNCERTAINTY."**

The first weeks of the war were entirely remote work. We looked at the Zone only through satellite services. In March we detected a major fire that way.

By late March, once a week I could take the city electric train from Kyiv's left bank to the right bank office. The seizure of the Zaporizhzhia NPP shocked me – especially tank fire directed at station buildings. At that moment came the realization that we might have no understanding at all of how the enemy thinks. That thought unsettled me so deeply that I pulled Ruth Benedict's *The Chrysanthemum and the Sword* from my shelf and reread the first chapter, "The Assignment: Japan." It describes how US military leadership tasked anthropologists with studying Japanese mentality for wartime strategy. We needed a similar research program.

During multi-day curfews and transport restrictions, Zoom became the primary means of communication. A crisis radioecological forum took place there – an informal, spontaneous meeting of Chornobyl specialists from Fukushima, Germany, Kyiv, and western Ukraine. We discussed the situation, expectations, and necessary actions. There was no information from Chornobyl itself, so regional meteorological stations outside the occupation and front-line areas were oriented toward detecting potential radiation releases. Primary data were transmitted to computing centers in Kyiv, Japan, and Germany to assess possible sources and magnitude of contamination.

Burned conifer forest.

PHOTO: DENYS VYSHNEVSKIY

Destroyed bridge on the road to Chornobyl.

PHOTO: DENYS VYSHNEVSKIY


Trace of WW2.


February 2022. Kyiv.


North checkpoint Benivka.


Drone.

PHOTO: DENYS VYSHNEVSKIY

Another activity was participation in a working group of the Environmental Inspectorate assessing environmental damage from the war. My deputy worked in the forestry section; I focused on Chornobyl. I immersed myself in various cases of evaluating and compensating for radiological damage: hydrogen bomb testing on Pacific atolls, depleted uranium munitions in the Gulf War, and more.

**FROM TIME TO TIME** I gave interviews. Once, while arranging a meeting with a journalist via chat, I suddenly saw breaking news that the same journalist had just been killed by a second MLRS strike in the Vinohradar district of Kyiv. I expressed condolences.

That was the rhythm of those weeks. In the background: multi-day curfews, the first reopening of the metro, restoration of railway connections, the rumble of artillery during the destruction of an occupier column near Brovary.

## De-occupation

The liberation of Kyiv region unfolded quickly – like spring itself. First came news of destroyed enemy columns, then the freeing of the Kyiv agglomeration. Abandoned equipment and positions, countless trophies; the presence of the Russian army melted like snow in sunlight.

On April 1, according to information from the plant, the last Russian tank left the Zone. Then our airborne troops entered. The Ukrainian flag was raised over the sanitary inspection building of the Chornobyl NPP.

I reached the Zone two weeks later.

On April 14 in the morning, key Zone figures gathered in the parking lot near the Karavan shopping center: heads of different organizations established in the Zone and specialists of the State Agency for Exclusion Zone Management. We warmly greeted each other – we hadn't seen one another since the start of the war. Everyone alive and well – already a blessing. A caravan of journalists joined us. Once assembled, we formed a convoy under police escort. That mattered – there were countless checkpoints along the way, and with escort we passed without stopping.

The first obvious signs of war appeared in Kazarovychi: bullet and shrapnel marks on the dam that had played a decisive role in defending the capital, destroyed houses in a dacha cooperative. All bridges toward Chornobyl had been destroyed; we traveled over temporary crossings. Burned Russian airborne fighting vehicles lay near the Dymer cemetery.

At the Dytiatky checkpoint, the InfoCenter building had been looted. Bullet holes in the glass. Spent shells from an automatic cannon scattered on the ground.

Access was coordinated with the military. Eventually, we entered.

The Zone landscapes outside the window looked unchanged – forests, fallow fields, abandoned villages. War's traces appeared near the Uzh River. The bridge was destroyed; one span

lay in the water. On the bank stood a fortified area: gabions, field fortifications, dugouts carved into the slope. I immediately called it "rat town."

**CHORNOBYL TOWN** greeted us with the destroyed structure of the Water Protection Complex at the entrance – struck by one of our missiles. Across from the bus station, a civilian car crushed by a tank. In the center of town, several LAZ buses blocked the road – likely an attempt to organize defense.

The remaining population gathered near the church, where humanitarian aid was distributed. We delivered food as well. In the crowd, I saw Yevhen Fedorovych. We greeted each other. Despite his age and circumstances, he remained as confident and energetic as ever.

## Return to work

My next visit to Chornobyl was in May. Writer Jonathan Littell contacted me – he was in Ukraine, traveling from Kharkiv to Kyiv, and had already planned to visit the Exclusion Zone. We met in the morning in the lobby of a hotel on Bohdan Khmelnytsky Street. He gave me a signed Ukrainian edition of *The Kindly Ones*.

Under the new conditions, I had nowhere to stay. The dormitory had been given to the military; our belongings were piled up in the commandant's office. I called Serhii Gashchak – a liquidator, a guru of Chornobyl science, deputy director of the Chornobyl Center. They had a field office in Chornobyl, a private house used for living and working in the Zone. I asked to stay overnight – he agreed.

Over those two days, I arranged for sappers to inspect our office and did initial cleaning. The worst part was the story with the mouse carcasses from the Red Forest. They had been stored in a freezer that the occupiers stole. But in some strange act – entertainment or ritual – they had scattered the carcasses throughout the office in various places. I located them by smell.

Another problem was replacing the broken window glass. For a week we prowled through abandoned buildings in Chornobyl like predators, searching for panes of suitable size. Eventually, we found what we needed.

**IN JUNE, THE CORE** Chornobyl staff of our department resumed work – four people including myself. That was exactly how many the service vehicle could hold, exactly how many could live in the private house Gashchak kindly provided, and exactly how many we could evacuate on our own if necessary.

The first task was to understand where we had ended up – to draw a new map of the territory.

The first category of land: inaccessible areas – the left bank and the northern part of the Zone beyond the railway. The situation in the western direction was unclear. There were reports of numerous mines and unexploded ordnance around the town of Poliske due to fighting. So the western sector of the Reserve was also excluded. These areas became a space of memory and photographs on a hard drive – we did not know when, or if, we would return.

The second category was the "Green Zone" – safe lands between the Prypiat River and the Dytiatky-Chornobyl road. Russians had not entered there, and the Armed Forces had no critical need to use it for maneuvering. Fieldwork was possible.

Between these two lay the "gray zone" – territory with unclear mine safety status, numerous checkpoints, and restrictions.

**THE FIRST OPERATIONAL** task was to retrieve winter camera traps used for predator monitoring. They were supposed to be collected in March-April, but the war delayed everything. We coordinated with the Armed Forces, who assigned reconnaissance personnel and a sapper. We drove as close as possible to each camera trap location. The military cleared the route to the point; then our specialists approached and retrieved the equipment. In this way, we saved part of it. Other traps remain somewhere near the border.

The second task was to complete our cooperation project with Fukushima University. In 2018, together with Japanese colleagues, we began studying small rodents on the drained sections of the Chornobyl NPP cooling pond. The project had progressed normally – Reserve specialists, the Institute for Nuclear Research of the National Academy of Sciences of Ukraine, and Fukushima University organized a large joint expedition annually.

**"FOR MANY RESEARCH GROUPS, 2022 BECAME THE YEAR OF ACCEPTING A BITTER TRUTH — CHORNOBYL RESEARCH WAS BEING SUSPENDED INDEFINITELY."**

COVID-19 was the first blow – Japanese colleagues could not come, but we managed. The war should have ended the research – but it did not.

I remember the joy and surprise when, after de-occupation, I found boxes of Sherman traps in storage. The occupiers had not recognized their value. Visits to the near Zone showed that our main field sites – the Red Forest and the cooling pond – were accessible and safe. The first wartime field season began, and results were obtained. In October 2022, at the project's final conference in Warsaw, we presented our findings.

We did it.

For many research groups, 2022 became the year of accepting a bitter truth – Chornobyl research was being suspended indefinitely. We, however, continued routine programs, adding assessment of occupation consequences. We established a test plot on former Russian positions to study vegetation recovery. We examined recent forest fire sites. We attempted to analyze the military impact on ecosystems from an ecological perspective.

Between 2023 and 2025, scientific activity gradually reactivated. National research groups returned; new projects appeared. Together with the Frankfurt Zoological Society, we launched

Wild horse near barbed wire. PHOTO: DENYS VYSHNEVSKIY

a project to restore the drainage system in the Uzh River floodplain. In addition to biodiversity restoration, fire safety, water conservation, and climate adaptation, a new objective was established: improving the tactical defensive properties of the terrain along the border.

**AFTER THE DESTRUCTION** of the Kakhovka Reservoir dam, questions arose about the development of terrestrial ecosystems on drained areas. Some answers could be found by studying the drained sections of the Chornobyl cooling pond. Specialists from the Institute of Botany of the National Academy of Sciences began this work in 2023. A related study examined abandoned agricultural lands in the Zone to forecast the development of neglected agro-landscapes in combat zones. In 2024, colleagues from the Nuclear Institute joined, and we began involving students.

We seemed to approach normalcy – but the atmosphere had changed.

In the forest, you hear a woodpecker's tapping intertwining with the distant rhythm of machine-gun fire. By sound alone, you can distinguish whether a sniper or a rifle squad is training at the range. Walking along a forest quarter line, you may suddenly see a drone appear overhead and follow you for a time. You see certain austere aesthetic in the work of mobile air-defense fire groups at night. It no longer surprises you when the Zone fills overnight with military equipment and personnel because suspicious activity has been recorded across the border. Finding a UAV in the bushes sparks only technical curiosity.

## Interim conclusions

Round anniversaries of the 1986 accident have traditionally served as milestones for describing the state of the Zone and society's attitude toward it. They are points at which one can pause and attempt to reflect on the period that has passed. On the 40th anniversary, the condition of the Zone differs significantly from what it was five or ten years ago. The main reason is the war. Let us try to identify these differences.

**CHORNOBYL TOURISM** has disappeared. It existed for fifteen years. It became the only activity in the Zone that generated substantial profit and did not carry a corrupt or criminal undertone. Five years ago, it seemed that tourism would become the primary form of presenting the Exclusion Zone to the world – a "tourist magnet," as they wrote. Projects, plans, and development strategies were drafted. All of that is now in the past.

There is a logistical rupture between the city of Slavutych and the Chornobyl NPP. The direct connection that once allowed personnel to reach the plant in less than an hour by rail or road has been destroyed. Staff from Slavutych now travel to the Zone by bus, detouring around the entire Kyiv Reservoir, which takes nearly half a day. The work schedule has shifted from daily commuting to rotational shifts. A separate issue is the fate of Slavutych itself, now cut off from the Zone and increasingly subjected to UAV attacks.

Personnel optimization has taken place. Under new conditions, enterprises have reduced the number of staff working directly inside the Zone, either through layoffs or by relocating divisions outside its boundaries.

The return of spent nuclear fuel from the Chornobyl NPP that had been sent to Russia for storage or reprocessing has been put on hold – possibly forever.

**"WALKING ALONG A FOREST QUARTER LINE, A DRONE MAY SUDDENLY APPEAR OVERHEAD AND FOLLOW YOU FOR A TIME."**

Militarization. Defense has become a new priority function of the Zone. Border fortification, field defenses, deployment of military equipment and personnel, patrols, and training using the full range of weaponry.

At the same time, some tasks and responsibilities continue to be fulfilled despite martial law:

- Decommissioning of the Chornobyl NPP
- Management of radioactive waste
- Radiation and environmental monitoring
- Maintaining fire safety across the territory
- Development of the Reserve

**ALL OF THE ABOVE** defines the point at which the Exclusion Zone currently stands. It could be described as stable – but I would hesitate to do so. At any moment, the territory of the Zone could transform into a battle zone, once again overturning the Chornobyl chessboard.

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Roadkill.

PHOTO: DENYS VYSHNEVSKIY


Minefield in the Red Forest.

PHOTO: DENYS VYSHNEVSKIY

Interior view of the control room of Chornobyl Nuclear Power Plant unit 3 in December 2010. Over 3,000 people then worked at Chornobyl Nuclear Plant to monitor nuclear fuel and carry out the decommissioning of the facility. PHOTO: DANA SACCHETTI/IAEA

# What we wouldn't know without Chornobyl

## The important work of scientists in the Exclusion Zone

by **Olena Pareniuk** and **Kateryna Shavanova**


### abstract

From the moment of its establishment, the Chornobyl Exclusion Zone (CEZ) became a territory separated from the rest of the country: governed by different rules and a distinct internal logic. The isolation of the CEZ and the urgency of its tasks have shaped – and continue to shape – specific demands on the scientists who work there. Chornobyl science is also influenced by crises that have repeatedly redefined its priorities.


**KEYWORDS:** The Exclusion Zone, radioactive waste, nuclear power plants, Russo-Ukrainian war.

Science is an integrated field of knowledge. Yet the accumulation of knowledge never proceeds evenly: it accelerates most intensely at moments of "extremes." The Chornobyl disaster of April 26, 1986, at the Chornobyl Nuclear Power Plant (then located in the Ukrainian SSR within the USSR), was undoubtedly such an extreme. But did it become a driver of scientific progress – and if so, at what cost, and for whom?

From the moment of its establishment, the Chornobyl Exclusion Zone (CEZ) became a territory separated from the rest of the country: governed by different rules and a distinct internal logic. The right to enter requires not only formal authorization but also

PHOTO: USFCRFC

Modern equipment was used for decontamination after the accident. An operator is seen steering a bulldozer by radio.

PHOTO: USFCRFC

A helicopter moves in to help experts check the damage to the Chornobyl reactor in 1986.

knowledge of safety procedures and acceptance of responsibility for one's actions. The Zone compels adaptation from everyone who enters, regardless of status or profession.

In 1986, immediately after the catastrophe, the primary "population" of the CEZ consisted of military units and other emergency response formations, while scientists and plant personnel were a minority. This appeared natural in a mobilization regime responding to what was often described as a "battle against an invisible threat." Nearly forty years later, the circle has closed: today, the principal permanent contingent in the Zone is once again the military.

**THE SIMILARITIES BETWEEN** 1986 and 2025 are immediately apparent: heightened control within the Zone, restrictions for personnel and visitors, and a high cost of error. Yet over these decades, the Zone has undergone profound transformation. Construction of Units 5 and 6 was halted; Units 1–3 were decommissioned; Unit 4 was enclosed within the New Safe Confinement; the cooling pond was drained, and trees now grow where water once stood. The nature of Polissia has been recovering: Przewalski's horses have appeared, and rare bird species have returned. A territory long labeled by the world as a "deadland" has gradually reconstituted itself as a complex ecosystem.

The isolation of the CEZ and the urgency of its tasks have shaped – and continue to shape – specific demands on the scientists who work there. These include readiness for field conditions, practical dosimetry, the ability to adapt instrumental approaches under time and resource constraints, deep knowledge of nuclear and radiation safety, and the capacity to respond to emergencies and manage contaminated territories and high-risk infrastructure. Such infrastructure includes NPP sites, spent fuel storage facilities, radioactive waste repositories, dosimetric checkpoints, access routes, technical work zones, and protocols for handling materials that remain hazardous for decades.

For this reason, when in February 2022 the CEZ once again transformed from a "site of memory" into a territory of potential radiological and very real military danger, the competencies developed by its scientists became even more relevant – both within and beyond the Zone.

History:

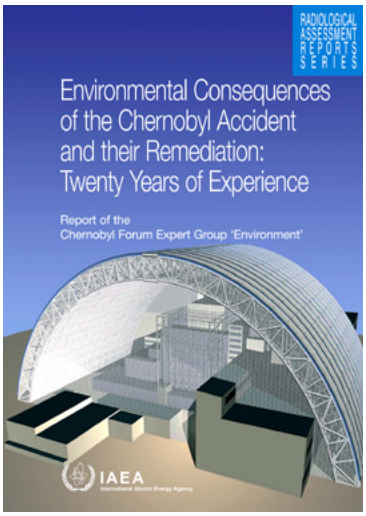
## Chornobyl science as a dynamic construction

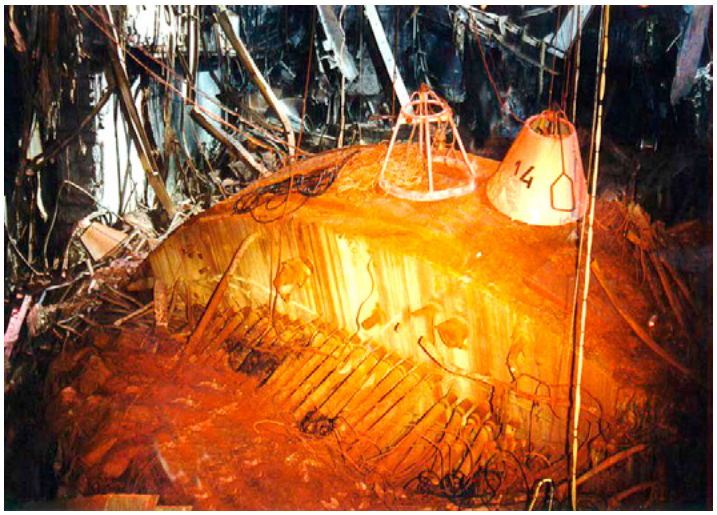
Nuclear and radiation safety is a field that learns best from its mistakes and immediately puts the newly gained knowledge into practice. What, then, did Chornobyl scientists learn – and did those lessons prove useful beyond the Exclusion Zone?

**"THERE WAS A PREVAILING HOPE THAT THIS EXPERIENCE WOULD ADVANCE RADIATION SCIENCE — AND NEVER AGAIN BE NEEDED IN PRACTICE."**

Science in the CEZ was never a structured monolith created through long-term planning and stable budgeting. Rather, it resembled a dynamic structure constantly rebuilt in response to emerging needs – by people, research groups, topics, and even planning approaches. Yet this fluidity did not imply chaos. On the contrary, science in the Zone was almost always applied in nature: its value was measured not by the number of theories produced but by its ability to answer questions arising "here and now," in a specific territory defined by specific constraints and risks.

In the 1990s, the Chornobyl accident was regarded as an exception. It was difficult to imagine that Chornobyl approaches would later be applied elsewhere (as occurred after the Fukushima Daiichi accident). There was a prevailing hope that this




Left: The 2006 IAEA report represented collaboration among hundreds of scientists worldwide.

Right: A diagnostic buoy, a device used to measure radiation, is seen on top of the reactor lid installed after the explosion in 1986.

PHOTO: US EPA

experience would advance radiation science – and never again be needed in practice.

## The First Decade after the accident (1986–1996): Operational science and managing uncertainty

The first decade after the accident was characterized by research aimed at containment and mitigation. This was a period of rapid, highly practical investigation focused on limiting the spread of radionuclide contamination.

The logic of that time is reflected in early decisions that shaped subsequent decades: the rapid construction of the "Shelter" over the destroyed reactor; urgent mapping of radionuclide contamination (including helicopter-based surveys); the establishment of systematic monitoring; and simplification of procedures for people to access the exclusion zone. Data quickly became methodology; methodology became operational practice.

Chornobyl science during this period was relatively closed – not because of secrecy, but because of limited time and resources. International consultation was constrained by limited internet access and language barriers. Nevertheless, it became evident that decades of radiobiological theory could be implemented in practice. The principal limitation often lay not in material resources, but in persuading populations and decision-makers to follow scientific recommendations.

Despite economic crisis in newly independent Ukraine, funding for Chornobyl research remained substantial. Nearly every research institution had thematic projects related to the accident. Scientists worked – and in some cases lived – in Prypiat, and research results were implemented rapidly. Groups with access to both Chornobyl data and international platforms laid a foundation that sustained Chornobyl science until the early 2020s.

In 1992, the IAEA published INSAG-7, providing a detailed technical analysis of the accident and recommendations to prevent similar events.

During this decade, the world came to understand that severe core-damage accidents were not theoretical anomalies, but scenarios requiring containment tools and long-term management strategies. Scientists played central roles in planning mitigation, providing the knowledge necessary to understand processes inside the destroyed reactor. Mass evacuation – affecting hundreds of thousands – left long-term health consequences, lessons later considered during Fukushima (2011). It also underscored the necessity of transparent public communication regarding causes, protective measures, and emergency planning.

Regrettably, the early days of Russia's full-scale invasion of Ukraine demonstrated that society had not fully learned these lessons.

## The Second Decade (1997–2006): Systematization, openness, and emerging fatigue

The second decade focused on environmental consequences. Amid speculation about catastrophic impacts, major work culminated in the 2006 IAEA report *Environmental Consequences of the Chernobyl Accident and Their Remediation: Twenty Years of Experience*. This nearly 200-page synthesis represented collaboration among hundreds of scientists worldwide.

Chornobyl science became internationally integrated. Ukrainian scientists joined IAEA advisory bodies, and most major projects received international funding – while domestic science funding declined. Research groups formed in the 1990s struggled to survive, but demand for Chornobyl expertise remained strong.

In 2000, the final operating unit of the Chornobyl NPP was shut down. Ukraine gained real-time experience in decommissioning and transition to long-term conservation – experience later applied to other Ukrainian nuclear facilities.

By the late 2000s, interest began to wane. Funding declined; access remained bureaucratically complex. It appeared that the accident's lessons had been absorbed globally, and Chornobyl

PHOTO: WIKIMEDIA COMMONS

Przewalski's horses in the Chornobyl Exclusion Zone, 2006.

PHOTO: WIKIMEDIA COMMONS

The New Safe Confinement in final position over reactor 4 at the Chornobyl Nuclear Power Plant, 2017.

would remain primarily a guardian of radiation knowledge.

This period reinforced the role of research groups as custodians of thematic continuity. Scientists often carried their research agendas across institutions. At times, institutional restructuring in the CEZ was so fluid that a researcher might change institutions without changing offices.

The need to popularize radiobiological and radioecological knowledge became apparent. Integration into European research networks was essential – its importance fully realized after 2022, when international colleagues supported Chornobyl scientists. Chronic underfunding forced teams to operate with minimal staff: for example, the Institute of Agricultural Radiology declined from over 3,000 employees in the early 1990s to around one hundred in the 2000s (and later, only dozens).

Knowledge was gradually lost. Methods such as the "radioactive buoy" – a device capable of measuring high-dose environments – disappeared. Techniques for constructing robots capable of navigating within the Shelter were lost. Yet, we gained practical experience in managing vast contaminated territories, – something that, unfortunately, will be needed in postwar Ukraine, which will face land rehabilitation challenges along front-line regions.

**"CHORNOBYL IS NOT MERELY A POST-DISASTER SITE – IT IS A SITE WHERE THE DISASTER PERSISTS AS A PHYSICAL AND SCIENTIFIC REALITY."**

## The Third Decade (2007–2016): Infrastructure, new data, and renewed relevance

At the start of the third decade, it seemed that Chornobyl science would slowly fade. The world had fixed Chornobyl in collective memory as a completed event. The Zone remained an open-air laboratory, but research did not appeared urgent anymore.

The Fukushima accident altered this perception. Chornobyl science became fully internationalized. Ukrainian scientists contributed expertise in Japan, adapting lessons to local conditions. Demand returned for competencies that had become routine in Chornobyl: practical dosimetry, field radioecology, risk communication, and work in territories where standard administrative rules fail. Chornobyl shifted from a "territory of consequences" to a "territory of solutions."

A major milestone was the New Safe Confinement (NSC), completed and operational by 2016–2017. While externally perceived as a final containment solution, for practitioners it established a century-scale engineering framework and intensified questions about long-term risk knowledge. The objective became transforming the NSC-Shelter complex into an environmentally safe system through removal and secure storage of fuel-containing materials (corium).

These materials remain insufficiently understood: their long-term structural evolution and environmental interactions over decades remain uncertain. In this sense, Chornobyl is not merely a post-disaster site – it is a site where the disaster persists as a physical and scientific reality.

On February 14, 2025, a Russian drone struck the NSC, causing a fire between protective shells and compromising structural elements of robotic systems intended for corium dismantlement beginning in 2030. This created new scientific and engineering challenges under wartime conditions.

In 2016, the Chornobyl Radiation and Ecological Biosphere Reserve was established, formalizing governance of a territory that long existed in administrative ambiguity. Chronic underfunding limited its full development. Simultaneously, the immediate 10-kilometer zone surrounding the decommissioned plant remained in economic use, creating a unique configuration of

On February 14, 2025, a drone hit the Chornobyl New Safe Confinement, damaging the sarcophagus. The repair operation required workers to ascend 100 metres in extremely difficult weather conditions.

PHOTO: STATE EMERGENCY SERVICE OF UKRAINE

a waste management infrastructure surrounded by a "buffer" zone of the nature reserve.

The gradual drainage of the cooling pond generated unprecedented empirical data on ecological succession and radionuclide localization – knowledge that gained practical relevance after destruction of the Kakhovka Dam in 2023.

Collectively, these processes reinforced understanding of Chornobyl not as a concluded catastrophe, but as an ongoing physical reality where science functions as a risk-management tool under constrained resources and generational knowledge loss.

## The Fourth Decade (2017–2027): **War, disruption, and reconfiguration**

If the third decade suggested gradual stabilization, the fourth shattered that illusion. On February 24, 2022, Russian forces entered the Chornobyl Exclusion Zone from the territory of Belarus. For several weeks, the Zone became an occupied territory, and nuclear infrastructure was effectively held hostage.

This period fundamentally altered the trajectory of Chornobyl science. Research was suspended. Monitoring systems operated under extreme constraints. Personnel was isolated, and rotation was impossible for weeks. The risks were no longer theoretical: heavy military equipment disturbed contaminated soils, fortifications were dug in the Red Forest – one of the most radioactively contaminated areas – and fires became a renewed threat.

The occupation demonstrated that nuclear and radiological risk cannot be separated from geopolitical risk. Decades of work devoted to the containment and stabilization efforts proved vulnerable to conventional military action. It also revealed the fragility of institutional memory: documentation, equipment, and ongoing experiments were placed at risk of destruction or theft.

After de-occupation, scientists returned not only to research but to assessment of military impact: disturbed soils, damaged infrastructure, mine contamination, and new uncertainties in environmental monitoring. The CEZ became both a field laboratory and a case study in the intersection of environmental contamination and armed conflict.

International collaboration, built over decades, became a stabilizing force. European and global partners provided technical support, equipment, and platforms for continuity. At the same time, Ukrainian institutions faced staff shortages, mobiliza-

**“CHORNOBYL IS NO LONGER ONLY A SYMBOL OF TECHNOLOGICAL CATASTROPHE. IT IS ALSO A TESTING GROUND FOR RESILIENCE – SCIENTIFIC, INSTITUTIONAL, AND SOCIETAL.”**

tion, and resource constraints. Some scientists joined the Armed Forces or National Guard; others adapted research agendas to wartime realities.

Thus, the fourth decade reframed Chornobyl once again – not merely as a post-accident landscape, but as a territory where nuclear legacy and active war coexist. This coexistence generates new research questions: How do contaminated ecosystems respond to military disturbance? How should nuclear sites be protected in armed conflict? What monitoring systems are resilient under occupation?

The Future:

## Planning under uncertainty

What, then, does Chornobyl teach us about the future?

First, it teaches that knowledge must be institutionalized, not personalized. Generational turnover, chronic underfunding, and administrative instability risk eroding competencies that are difficult – sometimes impossible – to reconstruct. The loss of specialized methods and devices over past decades illustrates this vulnerability.

Second, it demonstrates that nuclear risk management must integrate environmental science, engineering, public communication, and geopolitical awareness. Severe accidents and military aggression alike expose the limits of purely technical solutions.

Third, it underscores the importance of long-term monitoring. Radionuclide behavior in soils, forests, and hydrological systems unfolds over decades. Without continuity of data series, scientific interpretation becomes speculative. Chornobyl’s value lies not only in its singularity, but in the accumulation of longitudinal datasets that allow pattern recognition across time.

Fourth, it reveals that contaminated territories are not static wastelands. Ecological succession, species adaptation, and landscape transformation continue under chronic radiation exposure. The Zone provides insight into ecosystem resilience, limits of adaptation, and trade-offs between human absence and radiological presence.

Finally, it compels reconsideration of how societies remember and learn. Memory alone does not guarantee preparedness. The occupation of 2022 demonstrated that lessons from 1986 had not been fully integrated into international security architecture.

## Short conclusions

Without Chornobyl, the world would know far less about:

- The long-term environmental behavior of radionuclides in complex ecosystems
- Practical large-scale evacuation and resettlement consequences
- Engineering containment of destroyed nuclear reactors
- Decommissioning strategies under constrained political and economic conditions
- Communication challenges surrounding invisible risk
- The interaction between nuclear infrastructure and military conflict

**CHORNOBYL SCIENCE** emerged not as an abstract intellectual project, but as a necessity. It developed under pressure, with limited resources, shaped by crises that repeatedly redefined its priorities.

Its trajectory has been discontinuous: periods of urgency followed by fatigue, internationalization followed by isolation, stabilization followed by renewed disruption. Yet across these shifts, one feature has remained constant: adaptability.

Final:

## New protocols for a changed world

Chornobyl is no longer only a symbol of technological catastrophe. It is also a testing ground for resilience – scientific, institutional, and societal.

The scientists of Chornobyl have learned to work in uncertainty: with incomplete data, unstable funding, changing regulations, and now under conditions of war. Their experience suggests that nuclear safety cannot be reduced to engineering alone. It requires sustained ecological research, transparent governance, international cooperation, and protection of scientific infrastructure even in armed conflict.

As the fourth decade unfolds, Chornobyl continues to function as a paradoxical space: a territory of loss that generates knowledge; a contaminated landscape that informs environmental restoration; a restricted zone that shapes international collaboration.

If there is a central lesson, it may be this: disasters do not end when headlines fade. They persist physically, institutionally, and intellectually. Whether societies choose to transform that persistence into learning – or allow it to erode into forgetfulness – remains an open question.

Chornobyl has already provided answers to many questions humanity did not know how to ask. The responsibility now lies in preserving that knowledge, integrating it into global practice, and ensuring that future crises – whether technological or military – find us better prepared.

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# ATOMS FOR PEACE AND ATOMS FOR WAR

## IN UKRAINE'S NUCLEAR HISTORY

The alley of lost towns. Chornobyl, October 2025.

PHOTO: MARIANA BUDJERJYN

by **Mariana Budjeryn**


## abstract

Forty years after the Chornobyl disaster, the essay reflects on the impact of peaceful and weaponized nuclear energy in Ukraine's history. One of the leading nuclear energy operators in the world, Ukraine suffered the worst nuclear accident in history, which had wide-ranging geopolitical consequences. One of them was to influence Ukraine's decision to surrender the nuclear weapons inherited from the USSR, a decision that ultimately exposed Ukraine to Russian predation. After its full-scale invasion of Ukraine in 2022, Moscow proceeded to create and manipulate unprecedented nuclear dangers for Ukraine's civilian nuclear infrastructure, blurring – as it once did in Chornobyl – the distinction between atoms for peace and atoms for war.

**KEYWORDS:** Chornobyl, nuclear, ZNPP, Ukraine, Russia.

Since the advent of nuclear energy, atoms for war and atoms for peace have been inexorably linked. The horrific debut of nuclear energy on the international stage in August 1945 was in the form of bombs dropped by the United States on Japanese cities of Hiroshima and Nagasaki, ostensibly to end a deadly war and usher in peace. The same technologies that forged fuel for the bombs, later produced nuclear material for peaceful uses in medicine, agriculture, and, most prominently, in generating electricity to power economic growth and development. Yet the fission reaction inside the reactor core must be kept under careful control, lest it should run away with disastrous consequences, as it did at the Chornobyl Nuclear Power Plant in Ukraine 40 years ago.

Since 1945, nine countries managed to develop and keep nuclear weapon arsenals, on which they rely for their national security. Some 32 countries currently operate nuclear power plants, with 440 nuclear reactors producing nearly 400 gigawatts of electricity annually, about a tenth of the world's total electricity.[1] But all nations live in a world shaped by the nuclear predicament, the power constellations underwritten by nuclear weapons, and the promise – and peril – of energy generated by nuclear reactors.

## I.

Of all nations of the world, few have been marked by the atom to the same extent as Ukraine. Throughout the 1970s, Ukraine, then a constitutive republic of the Soviet Union, became the site of ambitious nuclear buildup. The first nuclear reactor came online in September 1977 at the Chornobyl Nuclear Power Plant just 130 km north of capital Kyiv. It would be followed by the construction of another 14 nuclear reactors across five plants, with many more planned. If Soviet plans came to full fruition, Ukraine would have become home to at least 13 nuclear power plants operating a total of 49 nuclear reactors to generate some 50 gigawatts of electricity.

Yet Soviet nuclear ambitions in Ukraine would never be fully realized. On Saturday, April 26, 1986, at 1:23am, during a planned safety system test, the core of an RBMK reactor of Unit 4 at Chornobyl experienced a critical power excursion. Within seconds, nominal energy output of the reactor core surged by a

factor of more than 100, followed by a steam and then hydrogen explosions that tore through the roof of the reactor building. The resulting fires raged for ten days, spewing radioactive plumes from the molten nuclear fuel and the burning graphite moderator rods, high into the atmosphere, spreading over much of the northern Europe.

The human and environmental toll of the Chornobyl accident was unprecedented. Some 100 radioactive isotopes were released into the environment as a result, most damaging of which were iodine-131, strontium-90, ceasium-137, and plutonium-239, -240, and -241. With precipitation, Chornobyl isotopes were deposited as far afield as Austria and Ireland. In Ukraine, Belarus, and parts of Russia, over 125 thousand square kilometers, a third of that – arable lands, were contaminated by radioactive fallout.[2] Some 400,000 people were eventually evacuated and resettled from the worst affected areas.[3] In Ukraine alone, nearly 200 towns and villages disappeared as a result of Chornobyl.

## II.

The causes of the accident were attributed to a series of operator errors and a faulty reactor design that lacked a containment structure that would have prevented the release of radioactivity in the atmosphere. But fundamentally, the Chornobyl disaster was a product of a dysfunctional system of industrial management, built on fear and lies, in an ailing Soviet empire.[4] Too big to cover up, the accident exposed the Soviet population not only to ionized radiation but to damning truths about the rot inside the Soviet system that took no account of human life and wellbeing. Throughout the late 1980s, "anti-nuclear" sentiment became synonymous with "anti-Soviet" and was coopted by the pro-independence movements in Lithuania, Ukraine, and Belarus.[5] Soviet leader Mikhail Gorbachev recognized that the Chornobyl disaster significantly contributed to the Soviet collapse.[6]

The societal and political impact of Chornobyl was evident in Ukraine's decision to declare its intention to become a nuclear-free state in the Declaration of State Sovereignty adopted by the first freely elected Ukrainian parliament, the Verkhovna Rada, on July 16, 1990.[7] Shortly after, the Rada voted for a moratorium on all new nuclear build in Ukraine, essentially mothballing three nuclear reactors under construction one each at Rivne, Khmelnytsky, and Zaporizhzhia nuclear power plants.[8]

Ukraine's unilateral nuclear renunciation anchored nuclear debates when the Soviet Union disintegrated in the fall of 1991. The fate of the enormous nuclear arsenal, the world's third largest, left behind by the Soviet collapse became the dominant foreign policy preoccupation of the newly independent Ukraine. While Ukraine negotiated to obtain financial compensation and security guarantees in exchange for denuclearization, it never wavered from its declared commitment to rid itself of nuclear weapons.[9] In December 1994, Ukraine joined the Nuclear Nonproliferation Treaty (NPT) as a non-nuclear-weapon state after signing in Budapest, Hungary, a Memorandum on security assurances to Ukraine in connection with its decision to disarm with the United States, United Kingdom, and Russia, which alone inherited the USSR's nuclear status.[10]

Figure 1. **Nuclear reactors in Ukraine**

| | Connected to the grid | Design lifespan, 30y/Life extension/ **Decommissioned**/ **Meltdown** | Reactor type |
|---|---|---|---|
| Chornobyl NPP | | | |
| ChNPP-1 | 1977 | 2007/**1996** | RBMK |
| ChNPP-2 | 1978 | 2008/**1991** | RBMK |
| ChNPP-3 | 1981 | 2011/**2000** | RBMK |
| ChNPP-4 | 1983 | 2013/**1986** | RBMK |
| Rivne NPP | | | |
| RNPP-1 | 1980 | 2010/*2030* | VVER-440 |
| RNPP-2 | 1981 | 2011/*2031* | VVER-440 |
| RNPP-3 | 1986 | 2016/*2036* | VVER-1000 |
| RNPP-4 | 2004 | 2034 | VVER-1000 |
| Khmelnytsky NPP | | | |
| KhNPP-1 | 1987 | 2017/*2028* | VVER-1000 |
| KhNPP-2 | 2004 | 2034 | VVER-1000 |
| South Ukrainian NPP | | | |
| SUNPP-1 | 1982 | 2012/*2033* | VVER-1000 |
| SUNPP-2 | 1985 | 2015/*2035* | VVER-1000 |
| SUNPP-3 | 1990 | 2020/*2030* | VVER-1000 |
| Zaporizhzhia NPP | | | |
| ZNPP-1 | 1984 | 2014/*2024* | VVER-1000 |
| ZNPP-2 | 1985 | 2015/*2025* | VVER-1000 |
| ZNPP-3 | 1986 | 2016/*2026* | VVER-1000 |
| ZNPP-4 | 1987 | 2017/*2027* | VVER-1000 |
| ZNPP-5 | 1989 | 2018/*2028* | VVER-1000 |
| ZNPP-6 | 1995 | 2025 | VVER-1000 |

## III.

Ukraine's nuclear renunciation was hailed as a contribution to international peace and security. The country moved on to focus on nation- and institution-building and economic development. By 1995, in fulfillment of its obligations under the NPT, Ukraine put all its civilian nuclear facilities under comprehensive safeguards of the International Atomic Energy Agency (IAEA).[11] The three remaining RBMK-type reactors at Chornobyl, deemed unsafe, were gradually decommissioned, the last one in 2000. In 2016, Chornobyl's damaged reactor 4 and its "sarcophagus," hastily constructed after the 1986 disaster, were covered by a New Safe Confinement, a marvelous feat of engineering and international collaboration, costing nearly $2 billion and built to serve for 100 years and allow the cleanup of some 170 tons of nuclear material still buried under the reactor rubble.

**MEANWHILE, IN 1995,** the moratorium on reactor construction was lifted, a function of realistic reassessment of Ukraine's energy

needs, and the three mothballed reactors were finished and brought online, one in 1995 and two in 2004. Ukraine came to operate a total 15 VVER-type reactors distributed among four nuclear power plants that generated nearly 14 gigawatts of electricity, half of Ukraine's energy mix, placing Ukraine among the leading nuclear energy producing nations of the world. Ukraine also endeavored to diversify its fuel supply away from Russia, on which TVEL fuel assemblies it hereto relied, and introduced fuel assemblies, developed for the VVER reactors by an American company Westinghouse, first in 2005 at unit 3 of the South Ukrainian nuclear power plant and later at other reactors.

## IV.

But Ukraine's geostrategic position between an expanded NATO to the west and an increasingly revisionist Russia to the east, left the country in a security vacuum that invited predation. When Russia, one of the signatories of the Budapest Memorandum, violated its commitments to respect Ukraine's territorial integrity and international borders in 2014 and then again with renewed viciousness in February 2022, Ukraine's decision to disarm came under much public scrutiny. Observers called into question the prudence of the 1994 decision, doubted the competence of Ukraine's then-leaders, and drew attention to the considerable political and economic pressure exerted on Ukraine by its interlocutors, the United States and Russia.[12]

Yet while all these factors undoubtedly played a role in Ukraine's nuclear disarmament, the effect of Chornobyl on Ukraine's nuclear decision-making was as salient then as it is overlooked today. In a bitter historic irony, however, the decision to disarm, along with the feebleness of security commitments pledged in the Budapest Memorandum, left Ukraine vulnerable to aggression by Russia, a nuclear power that relied heavily on nuclear threats in perpetrating its war. While most Russian nuclear rhetoric has been aimed at compelling Ukraine's western partners to temper their support for Ukraine's defense effort, there is an ever-present possibility that Russia might resort to the use of nuclear weapons on the battlefield or to terminate the war on its terms.[13]

**"THE NINE REACTORS THAT REMAIN ON UKRAINE-CONTROLLED TERRITORY ARE IN A CONSTANT PERIL OF LOSING OFF-SITE POWER OR BEING DIRECTLY DAMAGED BY THE STRIKES."**

**AMONG THE MANY** nuclear risks created and manipulated by Russia to its advantage in the conduct of its war against Ukraine are the threats to the safety and security of Ukraine's civilian nuclear power plants. The Chornobyl Nuclear Power Plant and the 30-kilometer Exclusion Zone around it were among the first places to be occupied by the invading Russian army in the early hours of February 24, 2022.[14] The presence of foreign troops and the proximity to active fighting raised fears of the dispersal, intentional or accidental, of the thousands of tons of spent nuclear fuel and other radioactive materials in storage at the Chornobyl zone.


*Budapest Memorandum is bull...it.* A book of stamps by Ukrposhta, Ukraine's national postal service, 2025. PHOTO: MARIANA BUDJERJYN

These fears paled, however, to what soon followed at the Zaporizhzhia nuclear power plan (ZNPP), the largest nuclear power plant in Europe, contributing nearly a quarter of Ukraine's electricity. On the night of March 3–4, 2022, a column of Russian troops and heavy armor stormed the ZNPP, which at the time operated four of its six reactors. Three reactors went into emergency shutdown under the Russian fire, and one remained in operation to support Ukraine's embattled power system. This was the first such armed assault on an operating nuclear power plant in human history.

On September 11, 2022, all six nuclear reactors at the ZNPP were shutdown. But on October 5, 2022, Russian president Vladimir Putin issued a decree claiming Russian ownership of the plant, essentially perpetrating the biggest industrial theft in recorded history.[15] Under its occupation, Russia weaponized the plant, maintaining a permanent military presence of 500 soldiers and storing military equipment and live munition in its turbine halls, using it as a shield to stage artillery barrages on Ukrainian positions, and manipulating nuclear risks through disinformation and false flag operations to sow fear and put pressure on Ukraine and its partners.[16] In the four years and counting of its occupation by Russia, the ZNPP lost off-site power, essential for safe operation of its cooling systems that prevent core meltdown, 12 times. On June 6, 2023, the Russian military blew up the Kakhovka dam downstream on the Dnipro, draining the reservoir on which the ZNPP relied for cooling water supply. Importantly, the Ukrainian operating staff found itself hostage to the Russian occupying authorities, pressured to sign contracts with the Russian nuclear operator Rosatom and take Russian passports. Dozens of operators have been illegally detained and many mistreated and tortured, thousands fled to the Ukraine-controlled territory, enduring a dangerous journey through occupied territories and Russia.[17]

Ukraine's other nuclear power plants have been bearing

the brunt of electricity generation in a situation where other generating facilities, including thermal, hydro, and combined heat power plants, as well as the transmission grid are being systematically degraded by unrelenting Russian missile and drone strikes. The nine reactors that remain on Ukraine-controlled territory are in a constant peril of losing off-site power or being directly damaged by the strikes. Indeed, on February 14, 2025, a Russian drone struck the NSC over Chornobyl's reactor 4 and caused significant damage that undermined hermetic characteristics of the structure that were supposed to last for the next 100 years.

In 1986 Ukraine found itself the site of the world's worst nuclear accident at Chornobyl that resulted from systemic negligence and poor safety culture inherent in the Soviet political system. The accident affected millions of people well beyond Ukraine, shaped the development of nuclear energy globally, and, by contributing to the Soviet collapse and Ukraine's nuclear disarmament, had significant geopolitical repercussions. Today Ukraine once again finds itself at the fulcrum of unprecedented nuclear dangers, perpetrated by a nuclear power with explicit malign intent. Ukraine's story continues to raise the specter of nuclear catastrophe, blurring the distinction between atoms for peace and atoms for war.

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Chornobyl Exclusion Zone.

PHOTO: WIKIMEDIA COMMONS

# The zone of **memory**

by **Magdalena Banaszkiewicz**

There are places that continue to haunt me. What they share is the impossibility of return, of confronting the spirit of the place after so many years. The loss of physical access to a field site gives rise to place-bound memory-making: a process of sustaining and negotiating memory that remains inseparable from a specific location. Memory does not exist solely as a record in the mind or as a narrative; it is anchored in the physical site – in its materiality, landscape, atmosphere, traces of the past, and in the practices repeatedly enacted within it. Memory that reinforces our relationship with a place sometimes appears unexpectedly, on the bodily level.

In the age of mediated and virtual experience, does each of us become a witness to the past? I ask myself this question in relation to myself and to Chornobyl. I was fortunate to experience the singularity of the Zone's landscape many times and to meet witnesses directly connected to the catastrophe. Does virtual representation merely simulate immersion, or does it produce new forms of memory phantoms?

## abstract

This article explores the transformation of the Chornobyl Exclusion Zone into a contemporary "zone of memory" shaped by physical inaccessibility and digital mediation. Drawing on memory studies and cultural heritage research, it analyzes how virtual tourism, social media, and virtual reality (VR) technologies influence the ways in which the catastrophe is remembered and experienced. Special attention is given to the role of immersive media, particularly VR applications, in producing affective and experiential forms of memory that differ from traditional narrative remembrance. The study argues that digital environments reorganize temporal perception and enable users to encounter the past as a sensory and emotional event, generating what may be described as immersive memory.

**KEYWORDS:** Chornobyl, virtual reality, immersive memory, digital heritage, Chornobyl Exclusion Zone.

## Chornobyl as a site of memory

Today, it hardly needs to be argued that Chornobyl is simultaneously a site of memory[1] – understood in the sense proposed by Pierre Nora,[2] as a symbolic anchoring of collective identity in a historical event – and a form of cultural heritage, both symbolic and material (the Chornobyl Exclusion Zone), as a space representing the past. Chornobyl thus functions not only as a historical event, but as a node of memory in which the past becomes entangled with the present. Its looping reveals a cultural process in which a society marked by traumatic catastrophe and subjected to the repression of state secrecy gradually emancipated itself from the regime of a monolithic narrative, deconstructing it as one of the dimensions of the decolonization unfolding in Ukraine in recent years.

Forty years constitute a temporal perspective in which communicative memory (direct, transmitted as testimony) becomes increasingly overlaid with cultural memory.[3] This occurs through the canonization of official discourse produced by state institutions and non-state international actors oriented toward specific memory politics, as well as through informal communication and bottom-up processes, largely driven by circulation within popular culture. The spectacular popularity of the HBO series *Chernobyl* (2019) is undoubtedly the result of an excellent script and outstanding performances, yet this does not preclude recognizing in the story of the catastrophe a contemporary version of ancient tragedy, in which the protagonists appear merely as pawns in a struggle for power among distant gods. In this sense, the series can be read as yet another attempt to expose the tragic consequences of informational terror, which – together with an extensive system of repression – functioned as a mechanism for maintaining totalitarian power.

## Place as heterotopia

In recent years, the Chornobyl Exclusion Zone has become a double heterotopia,[4] a place that represents an event frozen in time. It is a contemporary Pompeii: a witness to tragedy, a stage set without actors. From the perspective of four decades after the catastrophe, it was in fact only between 2011 and 2022 that the Zone truly came to life. Of course, I do not mean the continuous work of teams of experts employed in the Zone on a daily basis. What I have in mind is the revival resulting from opening the Zone to tourism on a scale unseen both before and after.

Towards the end of the 2010s the interest of the media, digital creators, artists, researchers and above all tourists in the catastrophe and its consequences became a phenomenon in its own right. Just before the outbreak of the COVID-19 pandemic, during the high tourist season between April and October, the Zone witnessed queues of minibuses at the Dytiatky checkpoint, groups of several dozen people treading routes designated by the State Agency of Ukraine on Exclusion Zone Management, and the din of voices of visitors simultaneously having lunch in one of the canteens. Visitor statistics grew year after year, reaching a record level of over 124,000 tourists in 2019. It seemed then that the Zone would share the fate of other places incorporated into the map of global mobility – becoming a tourist product, gradually overgrown with interpretive schemes and narratives shaping the mass experience of visitors from around the world.

Measuring radiation at reactor 4 in Chornobyl. PHOTO: WIKIMEDIA COMMONS

This, however, did not happen. The three-year project to develop the Zone as a "revival zone," presented in 2021 by President Zelensky at the All-Ukrainian Forum "Ukraine 30. Ecology", remained at the level of a proposal because of the full-scale invasion of the Russian Federation on February 24, 2022. The Chornobyl Exclusion Zone once again appeared on the front pages of newspapers and news portals, not because of another record number of visitors, but due to the incursion of Russian troops into it and the fear of another nuclear disaster. Russian soldiers, the "rashists" (a Ukrainian neologism combining "Russian" with "fascists") fell into the trap of heterotopia. Demolishing buildings and digging trenches in the heavily radioactive Red Forest, they resembled an army of post-apocalyptic zombies condemned to senseless aggression, as if in a video game. After their withdrawal, the Zone was once again depopulated – lying on the border between Ukraine and Belarus, exposed to drone attacks and mined by Russian troops, it froze as a space of emptiness and fear. Yet, in a classical butterfly-effect logic, the freezing of physical access to the Zone translated into an intensification of storytelling about the catastrophe and its consequences in virtual space, especially on social media. Their dynamics, although stimulated by hashtag-driven trends, resist being fully controlled by any authority.

## Social media and the aesthetics of stalking

Virtual tourism, largely defined as tourist-like experiences without spatial displacement, took on various forms in relation to the Chornobyl Exclusion Zone, developing in parallel with the growth of physical tourism. It began with Google Street View, which appeared in the Zone in October 2015, on the occasion of the approaching thirtieth anniversary of the catastrophe. Other forms of exploration included (and continue to include) vlogs and reportages, primarily published on YouTube, as well as accounts shared on other social media platforms, such as Instagram. The virtual and the real worlds strongly interpenetrated,

mutually stimulating one another. The Spanish-language two-part film by Luisito Comunica, *EXPLORANDO CHERNOBYL: Zona de Exclusión*, published in 2019, amassed 46 million views on YouTube within six years (the "wow" effect is further amplified by 1.4 million reactions and over 57,000 comments). This result surpasses even the official trailer of the HBO series *Chernobyl* (41 million views). For those who have ever visited the Zone, the film offers little that is surprising. There are hundreds of similar materials – personal reports from the Zone, narratives of the explorer's experience, in which movement through space becomes a journey through time.

Many of the films available online, especially those produced before the Russian invasion, were created within what might be described as a stalker aesthetic – an aesthetic of uncovering secrets and overcoming obstacles to reach places that are particularly intriguing, though also dangerous. The figure draws symbolically on Andrei Tarkovsky's film *Stalker* and has evolved into a cultural practice of post-Chornobyl appropriation, in which explorers who call themselves "stalkers" illegally trespass into the Zone. They reinterpret the past transgressive, experiential engagement with the disaster landscape.[5] In many films posted on social media, the dramatization of exploration was closely linked to the hazard of radiation. The narration was typically dynamic, often whispered due to haste and the difficult acoustic conditions inside abandoned buildings. The imagery was raw, with handheld cameras intensifying the impression of participating in a risky undertaking. The soundtrack played a crucial role in stimulating anxiety and a sense of escalating threat. A key aesthetic element was often the piercing beep of dosimeters signaling radiation levels exceeding safety norms.

## The conspiratorial landscape

A particular strand of Zone-related media production emerged in the form of materials created by the stalkers themselves. These productions did not merely document exploration; they actively performed the Zone as a space of secrecy, danger, and forbidden access. Vika and Stas Polessky (back in the time: a married couple of stalker-influencers) reconstructed a room in a private apartment for the 35th anniversary of the disaster in 2021 so that its décor corresponded to the design of 1986. Their YouTube channel documented the renovation process, prepared together with friends over the course of a year. An earlier project involved painting and reconstructing a room in a kindergarten in Prypiat in order to reenact its pre-disaster state.

The virtual presence and activity of individuals associated with the Zone became particularly significant during the pandemic period, when these materials were published. Forced immobility, combined with the vulnerability of material heritage to destruction, gave new causality to the dissemination of previously collected content by admirers of the Zone. Vika's concluding speech, delivered in costumes stylized after the 1980s, resonated with particular force:

> **I want to greet all the residents of Prypiat and say that I feel great sympathy with you, as you have lost your family homes. Please accept our small contribution to memory – your memory of your life here.**[6]

After 2022, however, even stalker expeditions into the Zone were radically curtailed. In one of her later posts from 2024, Vika describes areas near the border of the Zone, maintaining the tone of stalker exploration while simultaneously noting between the lines, that the territory of the Zone has become doubly dangerous. Not only because of areas of elevated radiation, which stalkers had learned how to avoid, but also because of landmines buried by Russian forces.

**"VIRTUAL REPRESENTATIONS OF THE CHORNOBYL LANDSCAPE ACCUMULATE IMAGE AND SOUND IN AN AHISTORICAL MANNER."**

Today, Chornobyl functions as a conspiratorial landscape in which historical knowledge, speculation, and post-apocalyptic aesthetics intertwine within virtual experience. Once again rendered inaccessible, the Zone becomes subject to arbitrary transformation. The Zone has broken free from the Zone, acquiring an autonomous virtual existence.

## Virtual and authentic encounters

The landscape of the Chornobyl Exclusion Zone presented through virtual exploration and the authentic landscape differ fundamentally in their persuasive function. The virtual world operates according to the logic of postmodern bricolage, in which aesthetics are mobilized to generate emotion. The Chornobyl landscape itself is ordinary and uneventful: abandoned buildings slowly collapsing into ruin, forest, field. It resists spectacle.

Virtual representations of the Chornobyl landscape accumulate image and sound in an ahistorical manner. Recordings are edited together with historical photographs, graphic simulations, or infographics explaining technical aspects, such as the spread of the radioactive cloud. The final chord is done with soundtracks added in post-production. In most cases, the viewer is unable to distinguish what is authentic from what is imagined. Only the author of the film, often positioned as a guide-narrator, holds the power of authentication, yet who is able to verify whether the creator is telling the truth?

The more physically inaccessible the Zone becomes, the more powerfully its virtual representations act upon the imagination, modifying memory of the catastrophe. This occurs because the representation of cultural heritage in virtual reality transcends both space and time. On the one hand, users can visit places that are inaccessible or too distant; on the other, they can encounter places as they existed at different historical moments through digital preservation of past settings.

In this sense, VR produces not memory of an event, but memory of immersion. The past is no longer approached through

narrative sequencing or temporal distance, but through bodily co-presence with its traces. The experience of time is reorganized: what once functioned as "then" is activated as "now," not as reconstruction, but as situated experience. This raises the question of whether one should accept the creative otherness of virtual heritage. Its aim is not authenticity or the faithful reproduction of presence, but a carefully constructed interpretation. One that enables the user not so much to feel as if they were there, but to engage with the past in a qualitatively different way.

## The Chernobyl VR Project

One of the forms of exploration that currently allows to a limited extent engagement with the Zone is the *Chernobyl VR* application, released in 2016 by The Farm 51, a company known for producing the popular survival horror RPG *Chernobylite*. Through the use of photogrammetry, the reality of the Zone was reconstructed with considerable care in order to achieve an impression as close as possible to individual exploration of the space. Wojciech Pazdur, creative director and co-founder of The Farm 51, described the project as a "virtual museum of Chernobyl" arguing, that "this place is amazing because of its history, especially the stories of the people".[7]

*Chernobyl VR* has been designed as a prototype of virtual reality. Although the terms virtual world and virtual reality share a common component, their semantic scope is not the same. A virtual world is a computer-simulated environment, whereas virtual reality can be defined as a simulated experience. It is a technology that enables users to experience a computer-generated world in an immersive way – that is, in a manner that produces a sense of "being immersed" in another environment: a three-dimensional digital setting that either reproduces the real world or presents a fictional one.

**THE MOST IMPORTANT** feature of VR is the sense of presence in the virtual world, although the degree of immersion may vary and depends on the tools employed. Fully immersive VR is generally understood as virtual reality experienced through a head-mounted display (HMD). This configuration gives users the impression that they are inside the virtual world rather than merely observing it. Through the use of headsets, motion controllers, or haptic gloves, the experienced three-dimensional image responds to head movement; the user hears sound, moves within virtual space, and interacts with objects – touching, lifting, or activating them.

The project employs a first-person perspective, allowing users to "land" in specific locations and move freely through them. Exploration is further enriched by access to archival materials, for example through testimonies of individuals directly connected to the tragedy, as well as of such famous witnesses as the former mayor of Kyiv, Vitali Klitschko, whose father was a liquidator, or the Nobel Prize-winning writer Svetlana Alexievich, author of the book *Chernobyl Prayer*.

Full immersion differs from approaches based on non-immersive VR, which operate on a computer screen (such as 3D games), as well as from semi-immersive VR, typically realized

Screenshots from the *Chernobyl VR Project*.

through large-scale projection systems such as CAVE (Cave Automatic Virtual Environment), for example in so-called immersive exhibitions. Virtual museums and art galleries constitute one of the most common applications of VR within the field of cultural heritage. They allow users to appreciate objects at their actual scale within realistic environments, aiming to reproduce the museum experience. However, when speaking of VR experiences more broadly, this places experience at an entirely different level. At present, embodiment, which is a key component of physically visiting a place remains difficult to access in VR due to the lack of tools capable of extending the full range of sensory experience. Temperature and smell, for instance, continue to represent some of the most significant technological limitations of virtual reality. That is why the *Chernobyl VR Project* experience is conducted using special goggles, which make immersion provide completely different physical sensations than watching an image on a computer screen.

**THE QUESTION OF** what kind of representation technology produces concerns not only space, but also time. Virtual reality does not simply extend existing modes of representation; it reorganizes temporal experience itself. Rather than situating the past at a distance, VR allows users to encounter it in the mode of the present.

User reviews published on the Steam platform (68 reviews posted between September 2016 and July 2025, written in multiple languages – 34 of them in English) present the project as generating ambivalent responses. Reviewers emphasize the educational value of the experience, praising the realistic photogrammetric scans and the unique opportunity to visit a closed zone without leaving home. Analyses of *The Chernobyl VR Project* reviews indicate that VR experience produces strong yet ambivalent affective reactions, arising from the tension between the emotional weight of the place and the limitations of immersive technology.

Users describe the VR experience primarily in emotional terms. Dominant descriptors include "sad," "moving," and "overwhelming," suggesting that affect precedes historical interpretation. VR does not so much transmit knowledge about the catastrophe as it initiates an emotional encounter with its traces. A key element of this affective experience is the uneven quality of sensory input. Users complain about low resolution and a "blurry" image in 360-degree videos, which undermines realism. By contrast, photogrammetric scenes (3D scans) are evaluated as highly realistic and visually impressive. The narrator's voice is generally assessed positively as clear and comprehensible, although some users mention background noise during the listening experience and a stylization marked by a "russian-vodka-balalaika" accent. The sound of the Geiger counter functions as a warning signal and contributes to atmosphere, responding dynamically to rising radiation levels in the virtual environment.

An important aspect of the reviews concerns descriptions of bodily reactions, revealing the limitations of VR. Poorly optimized camera work and movement mechanics cause some users to experience dizziness and nausea typical of motion sickness. Errors in object scaling sometimes make users feel like "giants or ants," disrupting natural spatial perception. The user's body becomes a site of negotiation between affect and physiology. Instead of a coherent sense of "being in the world," the experience oscillates between presence and technological frustration. This dissonance leads to a rupture of immersion and, consequently, to a weakening of the affective continuity of the experience. However, as Pazdur points out, VR, as a relatively new technology, "has not really reached the stage yet where one could say that it is good, or that VR experiences are good".[8]

**"USERS DESCRIBE THE VR EXPERIENCE PRIMARILY IN EMOTIONAL TERMS. DOMINANT DESCRIPTORS INCLUDE 'SAD,' 'MOVING,' AND 'OVERWHELMING,' SUGGESTING THAT AFFECT PRECEDES HISTORICAL INTERPRETATION."**

## Immersive memory

Immersion in VR operates not through representing the past, but through the synchronization of perception, movement, and affect, which produces a sense of presence and leads to the formation of experiential memory. VR is not a medium for displaying the past, but an environment in which the past becomes a "sensory event." The immersive experience – the subjective sensation of "being there" – facilitates the production of affective memory, intense emotional responses, and individual interpretations. In a situation where direct experience of the Zone is impossible, the question arises as to whether the emotions experiences by tourists or stalkers can be recreated. Put differently, what conditions or elements would need to be put in place to approximate such an experience as closely as possible? What allows the user not so much to feel as if they were there, but to experience a new mode of engagement with the past.

An analysis of virtual worlds, including virtual reality, demonstrates that categories developed within memory studies – communicative memory, cultural memory, and postmemory – now require substantial revision. Virtual reality, in particular, does not merely constitute a new medium of memory transmission, but introduces a radically different regime of temporality. This regime shifts the analytical focus from the question of what is remembered to the question of how past time is experienced. VR enables users to encounter the past in the mode of the present Although the Chornobyl Exclusion Zone is often described as "frozen in time," this notion should be understood as a metaphor reflecting the semiotics of ruins as carriers of their past forms. Visiting an abandoned swimming pool or theatre allowed tourists to draw on their imagination and reconstruct a vision of these spaces when they were still full of life. In virtual reality, however, it may

become possible not merely to observe the ruins of the pool but to enter the pool itself: immersing in the water as it might have been experienced when the facility was still fully operational.

**VR DOES NOT RELY** on temporal distance or narrative sequencing. Instead, it enables the synchronous coexistence of multiple temporal orders: the present of the user's body, the historical "once," and the time of archival media. The result is an atemporal experience whose outcome is not the memory of an event, but the memory of one's own immersion within a complex temporality. Immersive memory, therefore, is neither a record of the past nor its representation, but a situated experience of time in which the past is lived as present through affective engagement. This has far-reaching implications for understanding virtual reality as another medium of public history. The television series *Chernobyl* enabled many viewers to "see" the disaster for the first time and to grasp the dramatic consequences of radiation exposure. At the same time, the creators moved beyond individual stories, embedding personal fates within a broader narrative about the disintegration of a totalitarian system and the mechanisms of violence, dependence, and responsibility that emerge in situations of extreme crisis. Similarly, virtual environments– constructed through narrative design and shaped by the agency of those immersed in them – may serve important educational and cognitive functions.

## The future of Chornobyl memory

While personal and cultural memory have become a hybrid assemblage of digital practices,[9] the digital realm has increasingly reshaped contemporary mnemonic culture. An article by Andrew Hoskins advances the argument that the development of generative and agentic artificial intelligence leads to the end of "collective memory" as previously understood, irreversibly transforming our relationship with the past. According to Hoskins, the proliferation of autonomous AI agents and chatbots, that labels as "agentic turn," makes the formation of shared group memory increasingly impossible. Collective memory, once grounded in shared generational or media-based experiences (the era of broadcast transmission), is fragmented into individualized and synthetic versions of the past. People lose control over how the past is shaped, as it becomes difficult to determine what constitutes an authentic memory and what is the result of algorithmic remixing. Technology already enables the creation of so-called deadbots – memory robots of the deceased – as well as digital twins (AI twins) that emulate the behaviors and voices of both living and dead individuals. On the basis of archival materials, it would therefore be possible to recreate deadbots of witnesses to the disaster and walk with them through Prypiat, perhaps even through the city as it existed before the catastrophe. Although this remains a largely futuristic vision, contemporary technological developments are opening an entirely new future for engaging with the past.

The desire to revive the dead is among the oldest and most unsettling human longings. Forty years after the Chornobyl catastrophe, the question of memory strategies and tools – in the plural – stimulated by the development of new technologies of virtualization and artificial intelligence and activated in response to a geopolitical order straining at the seams, appears more urgent than ever.

Today, the Zone functioning primarily as a digitally imagined landscape, has not lost its role as a zone of memory. On the contrary, being a zone of memory, it continues to actualize our anxieties about the future.

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1 I deliberately use the spelling Chornobyl rather than Chernobyl, following the Ukrainian linguistic and cultural context of the disaster – an approach I elaborate on in my book *Heritage and Tourism in the Chornobyl Exclusion Zone* (2022). This choice reflects a conscious distancing from Russian-derived nomenclature that has long framed the catastrophe through a Soviet lens, despite its location in Ukraine. The shift gained formal recognition in December 2025, when the United Nations General Assembly adopted a resolution endorsing the Ukrainian transliteration Chornobyl instead of Chernobyl, a change increasingly adopted by international media and organizations in acknowledgment of linguistic accuracy and solidarity with Ukraine.

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Old Vilcha, in Polissia region. PHOTO: VIKTORIA NAUMENKO

# Remembering **Vilcha**

by **Viktoria Naumenko**

## A twice abandoned village

**Tetiana S.: My mum is 88 years old, and I still haven't told her that there's nothing left there [at the cemetery]. […] She keeps saying, 'Bury me there.'**
**Viktoria N. (interviewer): In Polissia?**
**Tetiana S.: No, here – in Vilcha of the Kharkiv region (crying).**[1]

This clarifying question frequently arises in conversations with residents of Vilcha. The reason is that there are two settlements with the same name in Ukraine. The first Vilcha is located in the Polissia region of Kyiv Oblast, on the border with Belarus. The second is in the Sloboda region of Kharkiv Oblast, on the border with Russia. What do these two settlements have in common?

Their shared history is one of forced rupture and continuation. The history of the first Vilcha, located approximately 40 kilometers from the Chornobyl Nuclear Power Plant, effectively ended ten years after the 1986 accident, when its entire population was resettled. At the same time, the history of the second Vilcha began precisely because of these resettlers – a new village was built for them in the Kharkiv region.[2] The first Vilcha was abandoned due to radioactive contamination. The second Vilcha


## abstract

This essay examines the fate of Vilcha, a village that was forcibly abandoned twice within a single generation. Originally located in Polissia, the village was evacuated after the Chornobyl disaster. Its inhabitants were resettled to a newly built village in the Kharkiv region. This second village of Vilcha was occupied and subsequently destroyed during the Russian-Ukrainian war. Based on three waves of oral interviews conducted between 2016 and 2025, this essay explores the experiences of forced displacement, memory, and loss. Vilcha emerges as a poignant example of repeated forced migration caused by both technological disaster and war.

**KEYWORDS:** Vilcha, forced displacement, repeated resettlement, Chornobyl disaster, Russian-Ukrainian War, oral history, memory.


New Vilcha, in Kharkiv region.

PHOTO: COURTESEY OF MYKOLA LIRSKII, COUNCIL OF VILCHA


The location of the two Vilcha villages in Ukraine.

SOURCE: WIKIMEDIA COMMONS

was almost completely destroyed as a result of the war. In both settlements, cemeteries were severely damaged during the hostilities of Russia's full-scale war against Ukraine. Today, life in both villages has ceased – they have both turned into ghost towns.

Yet there are still people whose life stories are inseparably connected to both Vilchas. This essay is about these people and their experience of double forced resettlement over the course of thirty years.[3] This is a generation that has been forced to leave their homes twice in their lifetime. They spent their childhood and youth in the first village, where they started families and had children. They spent the second half of their lives in the second village: their children grew up there, their grandchildren were born there, and they retired there. Their story is one of loss and discovery, pain and solidarity, despair and hope.

Vilcha was founded in Polissia at the beginning of the 20th century from two forest farmsteads. For decades, it remained a small but stable settlement with its own infrastructure and industry. The construction of the Chornobyl Nuclear Power Plant and the city of Prypiat turned Vilcha into an important transport hub in the region and gave its residents a sense of a predictable future. The disaster of 1986 radically altered the trajectory of the village's development and the fate of its inhabitants. Classified as a zone of mandatory resettlement,[4] Polissia's Vilcha lost its last resident in 1996. Since then, the only possibility of a symbolic return has been the annual memorial trips to the abandoned settlement.

## Polissia Vilcha as a space of memory

**As if I had flown here on wings[...].[5]**

My acquaintance with the people of Vilcha began with a journey to the cemeteries of Polissia Vilcha. In Ukrainian tradition, there is a custom of commemorating deceased relatives in the period after Easter – the so-called *Hrobky* or *Provody*. During these days, people visit burial sites, tidy up graves and the surrounding area after winter, and honor the dead at a shared table.

In May 2016, I joined one such trip to an abandoned settlement in the Kyiv region.[6] The purpose of my accompaniment was to conduct semi-structured interviews about the participants' expectations for the journey and the impact of the disaster on

their lives. Despite my research interest, I felt anxious. My interlocutors had lost their homes more than twenty years earlier and were now returning to the restricted zone to see the ruins of their former lives and to visit the graves of relatives and friends.

As soon as the bus entered the territory of the former Polissia district, memories began to come alive. Fifty people, all from Vilcha, first fell silent and pressed their faces to the windows, trying to make out familiar landscapes and recognize what was "their own". Gradually, the silence gave way to excitement: voices grew louder, and memories became more emotional. They recalled their lives before the disaster and their youth in Polissia Vilcha: school pranks, skating on homemade ice rinks in winter, and trips to the forest to gather blueberries and mushrooms. The space of the former settlement gradually turned into a space of memory – and, significantly, one filled mostly with bright and life-affirming recollections.

**UPON ARRIVING** in the village, the visitors first walked through the streets of Vilcha, which had been almost completely reclaimed by the forest. They were drawn to the places where their family homes had once stood, places saturated with so many memories. Here and there, the remains of buildings were still visible. On some of them, the name of the street – Oleksiivska – could still be read. Most of the houses, however, had been entirely destroyed; only wild fruit trees testified that people had once lived there.

The next important moment of the trip was the tidying up and care of family graves in two local cemeteries. The cemetery resembled an anthill, filled with people absorbed in their work. Some cleared graves overgrown with weeds, others painted memorial crosses and repaired fences, and some even installed new monuments. Afterwards, a communal meal began – everyone set the tables near the graves. People moved from one table to another, talking, reminiscing about the past, and laughing together.

The importance of this trip for the people of Vilcha in 2016 cannot be overestimated. For many of them, it would be their last visit to their Polissia home. On the way back – already returning to their settled lives in the Kharkiv region – they felt relief and elation. The passengers were radiant, smiling, and animatedly discussing what they had seen and whom they had met from other villages. If tears appeared in the eyes of the Vilcha's residents on the way there, they returned filled with joy. My anxious expectations did not come true. Yes, there was a lot of sadness when the residents of Vilcha could not even find traces of their former homes. Yet the overall mood remained bright and uplifted. "I feel recharged for the whole year now."[7]

## Creating a New Vilcha

**It's Not Ours.**[8]

The 2016 journey to Vilcha in the Chornobyl zone both began and ended in another Vilcha – in the Kharkiv region. This village, built on the site of a former collective farm field near the town of Vovchansk, was intended to become a new home for displaced persons and, above all, to protect them from the harmful effects of radiation.

Old Vilcha. PHOTO: VIKTORIA NAUMENKO

The residents of Polissia Vilcha were not evacuated immediately after the disaster in 1986. On the contrary, they were actively involved in the "liquidation" (as Soviet authorities called it) of the consequences of the catastrophe: a temporary hospital for irradiated soldiers was set up in the school, contaminated equipment was washed and unloaded at the railway station, and bread was baked for those mobilized to work in the affected area. Vilcha became one of the reception points for the first evacuees from the ten-kilometre zone around the Chornobyl Nuclear Power Plant.

**IN THE FOLLOWING** years, the need to resettle the population of Vilcha became increasingly clear, as it was evident that the land would remain unsafe for a long time. Gradually, the familiar sense of security eroded, and everyday life became defined by prohibitions: it was forbidden to keep livestock, eat homegrown fruits and vegetables, or gather mushrooms and berries in the surrounding forests. These restrictions undoubtedly caused anxiety, yet stable employment and centralized food supplies kept people from deciding to move. Only when children began to fall ill and previously healthy young people started to die suddenly did the "invisible" radiation become a tangible and very real threat. At that moment, the danger took on concrete form, and the decision to resettle became inevitable.

**"EVEN IN THIS NEW SPACE, THERE WAS SOMETHING THAT OFFERED A SENSE OF HOME — THEIR OWN PEOPLE."**

Most people perceived the forced move to a new village in another, eastern part of the country as one of the greatest tragedies in their lives. For a long time, the pain of losing their homes and the realization that they could never return hindered their ability to settle in the new place. The situation was further complicated by a nationwide socio-economic crisis: there was a lack of work, the hastily built houses needed repairs, and the economy had to be rebuilt from scratch in unfamiliar climatic conditions. Tensions were also heightened by the wary attitude of local residents, who were envious of the new houses and compensation payments.

Even in this new space, there was something that offered a

PHOTO: VIKTORIA NAUMENKO

New Vilcha.

PHOTO ANASTASIIA HRIAZNOVA

PHOTO: COURTESY OF MYKOLA LIRSKII, COUNCIL OF VILCHA

sense of home – their own people. Because the resettlement was carried out compactly, the community remained together: entire streets and extended families moved as a group. During this difficult period, it was precisely this unity and mutual support that became the main resource for the survival and moral resilience of the people of Vilcha.

**OVER TIME**, the second Vilcha became a true home for the displaced community. Children grew up here, grandchildren were born, gardens and vegetable plots appeared, and new social ties were formed. Carrying memories of their lost homeland and hopes for a safer future, Vilcha inhabitants gradually took root in their new surroundings, preserving symbolic continuity through the name Vilcha. As one of the residents put it:

> **Vilcha is our history. I still see the old village in my dreams. With my eyes closed, I can describe every path, every house, every broken branch. But fate has turned this settlement into our home. We truly want to see it thrive, and we believe in a happy future here, in the new Vilcha.**[9]

## Vilcha before the full-scale invasion: Life between two catastrophes

As a researcher, I visited Vilcha in the Kharkiv region several times, most recently in the spring of 2018. Unlike my 2016 journey to the abandoned village in Polissia, this encounter was no longer a journey into the realm of memory. It was an encounter with the life that continued.

Blooming gardens and open courtyards with low fences, through which flower beds were visible, created a sense not of isolation, but of trust in the world. Yet what struck me most was not the outward orderliness, but the human hospitality – the readiness to share one's space, one's time, and one's experience of losing and finding a home.

By that time, Vilcha had already become a refuge for new forced migrants from the Donetsk and Luhansk regions, who had fled the war after 2014.[10] The residents of Vilcha supported them not only with food and basic necessities, but also with their own stories of disaster and displacement. They tried to pass on what had once sustained them: faith in the possibility of putting down roots again, rebuilding everyday lives, and learning to call a new place home.

The residents of Vilcha willingly showed their homes, gardens, and flower beds, as if to prove that home is not merely a geographical location, but a state of being that can be cultivated even on unfamiliar soil. Their words still echoed with pain for Polissia, yet at the same time it was clear that the new village was where they had taken root. At that moment, it seemed that this Vilcha was final – that despite the war, the fate of forced resettlement would not be repeated here.

## Occupation and the loss of home once again

This settlement was also devastated by a new catastrophe – Russia's full-scale war against Ukraine. Located just eleven kilometers from the Russian border, Vilcha was occupied in the first hours of the invasion in February 2022. The following six months became a period of severe ordeal marked by fear, uncertainty, and moral exhaustion.

The residents of the village vividly remember the beginning of the shelling, the arrival of the occupying forces, searches, brutal beatings, detentions, and disappearances. The village lay on the route of Russian missiles and fighter jets heading toward Kharkiv where many inhabitants had relatives. Numerous families found themselves divided between the occupied and free territories. The absence of communication, shortages of water and electricity, and the lack of food and medicine became part of everyday life.

**DESPITE THIS**, the community once again rallied together. People supported one another with food, medicine, and information, and helped displaced persons from neighboring villages. Maia Yr. recalled:

> **We had no mobile connection at all, and it was in my garden, near that table, where people could catch an internet signal. [...] So there were always people in my garden – always. Even when I wasn't there, when I was at work. [...] We always had tea and our homemade treats, made from our own homemade flour.**[11]

Some residents were forced to leave the village to escape persecution by the occupying authorities. Others, mainly elderly people, chose to stay "until the very end", fearing that they would lose their homes for a second time.

The liberation of Vilcha in September 2022 was one of the happiest days in the lives of many residents.[12] After months of occupation, the return of Ukrainian authority was met with hope that normal life could be restored. Over the next two years, people worked tirelessly to rebuild their everyday existence. They planted gardens, reconstructed heating systems, and sought alternative energy sources, preparing for winter under the constant threat of renewed attacks. The determination not to lose their living space a second time was overwhelming.

Yet in the spring of 2024, a new Russian offensive brought this fragile recovery to an abrupt halt. Vilcha once again found itself on the front line, and its residents were forced to leave their homes. Even when the war ends, the prospects of return remain deeply uncertain. The scale of destruction is compounded by the geographical proximity to the Russian border and the likelihood of this territory being turned into a "buffer zone". For many families, this does not mean temporary evacuation, but a second and final loss of homes. Vilcha has once again been turned into a wasteland – a kind of "ghost town" that tragically repeats the fate of its Polissia predecessor.

## When there is nowhere to return to

> **I am already making plans for what I will do there: I need to mow the grass and clean up.**[13]

When I met with the residents of Vilcha in 2025, I listened to their stories of losing their homes for the second time. The most difficult question concerned the future. For many, it is now connected not to a place, but to people – their children and grandchildren. At the same time, a paradox repeatedly arose in our conversations: they recognize that the return is impossible, but at the same time they continue to talk about it. Between the recognition of final loss and the hope of return, a tense space of memory takes shape.

**THE PEOPLE OF VILCHA** now gather in Kharkiv and the Kyiv region. They remain in contact through chat groups, exchange photographs of their destroyed houses, and share news about the front line approaching their village. In this way, Vilcha continues to exist – not as a physical settlement, but as a community of people bound by the shared experience of two catastrophes.

Within a single generation, Vilcha has been forcibly abandoned twice. Its residents have been displaced twice – first by a man-made disaster, and then by war. Their story is not only a chronicle of loss, but also a testament to their capacity to recreate a sense of home even when it no longer has a geographical address.

Vilcha's fate has mirrored the major Ukrainian traumas of recent decades – from the technological catastrophe of the late USSR to Russia's war of aggression. Yet one constant remains in this tragic cycle – people who choose life together again and again. The residents of Vilcha have lost two physical addresses, but they have not lost their community or sense of belonging. Their experience shows that home is not a fixed point on a map, but a process of mutual care and solidarity that endures even when only ruins remain where familiar streets once stood.

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2 Vilcha (Polissia District, Kyiv Region) was officially removed from the register of settlements in August 1999; Vilcha (Vovchansky District, Kharkiv Region) was founded in June 1993.

3 The empirical basis of the essay includes three sets of oral history interviews with residents of Vilcha: 17 short structured interviews conducted during a research trip to the abandoned village in the Chornobyl exclusion zone (2016); 30 interviews from the project "Vilcha – a Resettled Village" (2017); and 26 interviews from the collection "Double Displacement: Vilcha, Ukraine" (2025), conducted within the framework of the "Documenting Ukraine" grant (Institut für die Wissenschaften vom Menschen, Vienna).

4 Following the Chornobyl accident, four zones were established according to levels of radioactive contamination: the exclusion zone, the zone of mandatory resettlement, the zone of guaranteed voluntary resettlement, and the zone of enhanced radioecological control. In 1986, only the thirty-kilometer exclusion zone was subject to mandatory evacuation. As information about the scale of the disaster became public, further resettlement followed.

5 Interview with Anzhela M., May 6, 2016. Author's private archive.

6 The trip was organized by the Chornobyl History Workshop (Kharkiv) with financial support from the International Education Center Dortmund (IBB Dortmund) and the Renovabis Charitable Foundation.

7 Interview with Raisa P., May 6, 2016. Author's private archive.

8 Interview with Anatolij G., Mai 6, 2016. Author's private archive.

9 Ivan Kel, quoted in: Mariia Sokolchuk and Ivar Matern, "Ivan Kel's Story," in *Vilcha – pereselene selo* [*Vilcha – a Resettled Village*], ed. Gelinada Grinchenko, Viktoriia Naumenko, and Svitlana Telukha (Kharkiv: Madrid, 2018), 124.

10 For accounts of the assistance provided to IDPs from Donetsk and Luhansk, see: *Vilcha – pereselene selo* [*Vilcha – a Resettled Village*], ed. Gelinada Grinchenko, Viktoriia Naumenko, and Svitlana Telukha (Kharkiv: Madrid, 2018).

11 Interview with M.Yr., January 26, 2025. Collection "Double Displacement: Vilcha, Ukraine." Author's private archive; to be deposited at Deutsches Gedächtnis Archive (FernUniversität in Hagen).

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13 Interview with Maia Yr., January 26, 2025. Collection "Double Displacement: Vilcha, Ukraine." Author's private archive; to be deposited at Deutsches Gedächtnis Archive (FernUniversität in Hagen).

*As our people extinguished the fourth reactor, as sacks fell onto the raging fire, and the heroes performed their military duty and left us, may their memory be eternal. And to those who are alive, Ukraine bows to the very ground.*
Maria Prymachenko, 1995.

# "This is how I dreamed of the fourth reactor"

## Maria Prymachenko and (not) naive images of Chornobyl

by **Oksana Semenik**

## abstract

Art in the Soviet Union was the mirror of the official communist party policy. However, Maria Prymachenko was successfully hiding the critique of the system behind "naive" pictures. She was one of the few artists who truly depicted the consequences of the Chornobyl catastrophe: from environmental issues to commemorating the dead, from illnesses to corruption surrounding liquidator certificates.

**KEYWORDS:** Maria Prymachenko, Chornobyl disaster, Ukrainian art, Russo-Ukrainian war, naive art.

No art exists outside of politics, even if you paint colorful animals, birds, and flowers in a quiet village far from the big cities. Politics can affect you in different ways: the government might decide to take all your food. Occupiers may come to your home and garden. Politics may force your teenage son to work on a collective farm instead of you, since you cannot work there due to a disability. And one day, a large nuclear power plant will be built near your idyllic village. And in ten years, the invisible result of hundreds of political decisions – uncontrolled radioactive contamination – will reach your land. The art of Ukrainian artist Maria Prymachenko (1908–1997) is often considered "naive" and "apolitical." Yet it is perhaps the best testimony to the Chornobyl disaster: from environmental issues to commemorating the dead, from illnesses to corruption surrounding liquidator certificates.

Prymachenko existed outside of systems and art schools and lived a few kilometers from the Exclusion Zone, in the village of Bolotnia in the Ivankiv district. She grew up, like all villagers, surrounded by folk art – *pysanky* (traditional decorated Easter eggs), embroidery, wooden sculptures, folk music, and folk beliefs. Her first artistic impressions came from traditional Ukrainian art and her own imagination. Later, she studied at the Lavra Workshops in Kyiv. In the mid-1930s, following the Holodomor, the Soviet authorities began "searching for talent in the villages." One of those searching for distinctive artists was embroiderer Tetiana Floru. She traveled to Ivankiv and immediately noticed an unusual embroidery. There, she was told about Prymachenko and directed to the village where the artist lived. According to various accounts, at Maria's home, Floru saw her drawings and decided to invite the artist to the newly-established workshops for folk artists from the village. In these workshops, located on the grounds of the Kyiv-Pechersk Lavra, folk and academic artists were to work and study side-by-side. In the 1940s, Maria Prymachenko returned to live in her native village, where she completely withdrew from the art world and lived as a single mother through World War II. In the 1960s, the generation of the young Ukrainian intellectuals called "The Sixtiers" (*Shistdesiatnyky*) revived interest in folk art and culture. While traveling through the Chornobyl region, Viktor Zaretskyi and Alla Horska (who was killed by the KGB in 1970 for her pro-Ukrainian stance) met Maria Prymachenko and helped her return to the art milieu. The Soviet authorities saw no threat in the "naive," "decorative" art of a "rural grandmother." "The Sixtiers" found not only inspiration in her magical-realist art but also safety in her home, where they could gather without KGB surveillance. All the well-known Ukrainian artists, poets, writers, museum curators, and even director Sergei Parajanov began to visit Bolotnia. Her colorful, almost conceptual art successfully conceals social and political issues behind naive images.

**"I GIVE FLOWERS TO THOSE WHO WORK SHIFTS AT THE NUCLEAR PLANT. GRANT THEM, LORD, STRENGTH AND HEALTH, A LONG LIFE, AND THE ABILITY TO RAISE THEIR CHILDREN AND GRANDCHILDREN."**

**A BRIEF NEWS REPORT** about the Chornobyl accident first appeared on Soviet television on April 28, 1986. It was not until May 14 that General Secretary Mikhail Gorbachev delivered a speech that focused on accusations of an "anti-Soviet campaign" by the capitalist media, rather than on discussing the consequences of the accident or cleanup plans.[1] All these topics were classified. Other topics that could not be discussed included: the true causes of the accident at the fourth reactor, information on radiation levels, results of soil and water measurements, information on the number and condition of the population affected by radiation, and so on.[2]

For a long time, the heroism of the liquidators remained the official and permitted topic in both the media and official Soviet art. Artists were even specifically sent on assignments to the Exclusion Zone by order of the Central Committee of the Communist Party of Ukraine to create portraits and "to boost morale." About a dozen artists worked in various parts of the Exclusion Zone: Prypiat, Chornobyl, the Chornobyl Nuclear Power Plant, and the villages of Kopachi, Stari and Novi Shepelychi, and Tovsty Lis. Some of the paintings created remained in the Zone forever – they were too contaminated by radiation.[3] Most of those who participated in the disaster consequences "liquidation" as artists have already passed away.

Oleg Veklenko, a renowned Ukrainian graphic artist and founder of the international environmental poster triennial "The 4th Block," was mobilized almost immediately – by May 3, he was already in the Exclusion Zone and remained there for two months. His duties included showing films from a special booth, painting ideological posters (as he himself recalled, for this he had to barter for or steal paint and boards on his own), and, of course, engaging in various tasks related to the cleanup of the accident. At the same time, Veklenko took documentary

*The eagle flew in, landed on the fourth block, and grew sad: there's nowhere to feed, poplars are growing on the fourth block.* Maria Prymachenko, 1995.

*This bird flies everywhere, searching for her husband. But he is nowhere to be found; his body has scattered across all of Ukraine. Flowers will grow, children will pick them, and carry them to the graves. But my grave has flown into the sky.* Maria Prymachenko, 1993.

photographs of his daily life and sketched portraits of the liquidators. The first exhibition of these portraits took place right in Chornobyl – at the entrance to the camp where the liquidators lived. At first, it was simply called "The Wall of Honor," but later the political department approved the title "Time Gives Birth to Heroes." Then, as Veklenko recalls in *Chornobyl: Sketches from life*, the command issued an order to display this "exhibition" in various locations throughout the zone.[4]

**UNOFFICIAL ART** had more freedom in expressing the consequences and imagery of the Chornobyl disaster. The theme of the liquidators' heroism, on the one hand, was fueled by the Soviet authorities. On the other hand, the desire to somehow support those affected by the accident and help mitigate the consequences was also sincere. Citizens raised funds for the victims, offered to host them in their homes, built new houses for the displaced free of charge, and volunteered to go work in the Exclusion Zone. There was a need for people in various professions: from builders to cooks, from nurses to laundry workers. For those artists who worked at the site of the accident, the heroes most often had names. For most artists outside of the disaster "liquidation" efforts, it was a tribute to abstract heroism.

Maria Prymachenko signed each of her works with almost poetic narratives, using her native Chornobyl dialect. Sometimes these signatures bear witness to historical events, and at other times they convey the philosophy and worldview of the artist and the people of Polissia. Prymachenko's floral compositions are always about dedication, wishes, or tribute. In particular, she dedicates a floral composition to the workers of the Chornobyl Nuclear Power Plant: *I give flowers to those who work shifts at the nuclear plant. Grant them, Lord, strength and health, a long life, and the ability to raise their children and grandchildren. Thank you, our dear workers*. Another work is dedicated to the liquidators – *As our people extinguished the fourth reactor, as sacks fell onto the raging fire, and the heroes performed their military duty and left us, may their memory be eternal. And to those who are alive, Ukraine bows to the very ground.*

It depicts a yellow helicopter in which a person, seemingly in a spacesuit, drops three sacks. We see fire rising from the reactor unit where a snake sits. The nuclear reactor appears as absolute evil, the devil, or even the Antichrist. For most artists who were not direct participants in the cleanup or did not live in areas close to the Exclusion Zone, the Chornobyl disaster took on mythological and even apocalyptic imagery. Hanna Chuchvaha, in her article *Memory, Trauma, the Maternal*, notes that:

> **[...] for many Belarusians and Ukrainians, Chornobyl is synonymous with an immeasurable trauma that goes beyond a simple association with the disaster zone and enters the existential realms of human birth and death.**[5]

According to Griselda Pollock, traumatic experience is primarily associated with the female gender, where the maternal-feminine is linked not only to life but also to death.[6] It was precisely the images of "Chornobyl Madonnas" that dominated Ukrainian art after the disaster. For example, the "Chornobyl Madonnas" by Ivan Marchuk, Vudon Baklyts'ki, and Ivan Zhupan. In Ukrainian literature, the seminal work that resonated even during the Soviet era was "The Chornobyl Madonna" by Ivan Drach, the poet from the generation of "The Sixtiers". The poem provides poetic images of contemporary Ukrainian (Chornobyl) women. For example, an elderly woman returning to her native village after

evacuation. In the section of the poem titled *Variation on a trite plot, or the old woman in cellophane – our mother*, he describes a fictional (but not entirely) story. Soldiers in a helicopter notice something strange: "two aliens from outer space" are walking around in cellophane suits. It turns out they aren't aliens at all, but an old woman and a cow, both wrapped in cellophane, who didn't leave during the evacuation.

> **'Why on earth did you wrap the cow in plastic, granny?'**
> **'What, haven't you heard about the radiation?'**[7]

Drach mocks the absurd and ineffective recommendations from the Soviet authorities. In 1986, Maria Prymachenko also depicted a cow in plastic wrap alongside an old man. As a conceptual artist, she creates allegorical images featuring animals, flowers, or people that, at first glance, appear merely decorative, and explains her idea on the back of the sheet. For example, a bird that at first glance appears ordinary, standing next to a frog, is actually discussing water contaminated with radionuclides ("The partridge speaks to the frog. The frog says: 'We are in trouble, nowhere to swim: the water is contaminated. Woe to us!"). And a large blue catfish, due to the danger of contaminated water, has crawled onto land in search for a clean body of water where it can live ("A Polissia catfish crawled out of the pond into the forest, looking for clean water. And we don't have any!"). She captions the cow in cellophane as follows: *Just as there was trouble with Reactor 4 in Chornobyl, an old man is herding a cow there. To protect it from radiation, he wrapped its legs, horns, and even its tail, but the cow is munching on grass – it won't listen to anyone. That's the kind of old man he is.*

The cow's tail, horns, and hooves are wrapped in cellophane, and its udder is protected by lead. Did Prymachenko realize that she was not merely criticizing the Soviet system – which failed to protect its citizens and covered up the disaster – but also illustrating the effects of external and internal radiation exposure? Even if the cow and the old man had been completely shielded by lead, the cow still ate contaminated grass and would produce contaminated milk. It is not known for certain whether Prymachenko read Drach, or whether, perhaps, Drach saw Prymachenko's work. But local residents of the Ivankiv district, which borders the Exclusion Zone, recall that shepherds were issued chemical protection suits.

**AND ALTHOUGH** Maria Prymachenko did not create her own "Chornobyl Madonna," she immortalized another, real mother – Hanna Khodemchuk: *The mother sits by the house, the mother sits by the garden, looking at her son's footprints, she weeps and says: "My son, my falcon, when will you fly to me, when I see you, I will only cry."* The day before the disaster, Valery Khodemchuk was at his mother's house in the village, working in the garden, pruning the trees. The ground was still damp, and his footprints remained. For a long time, his mother wouldn't let anyone into the garden, so as not to trample the footprints of her son, whose body had vanished and was buried forever in the ruins of the fourth reactor. Valery Khodemchuk became the first victim of the Chornobyl disaster. During the reactor explosion, he was in the pump room, almost at the epicenter. Beneath the new safe confinement now lie not only the ruins of the nuclear reactor, but also Valery Khodemchuk's grave. His death struck Maria Prymachenko not only because of the extraordinary story of a simple worker from a Polissia village whose name became known to the whole world – he was her nephew. The artist dedicated several works to "Valerik," as she called him. In 1989, she depicted a bird flying amidst nature: *This bird flies everywhere, searching for her husband. But he is nowhere to be found; his body has scattered across all of Ukraine. Flowers will grow, children will pick them, and carry them to the graves. But my grave has flown into the sky.* Prymachenko metaphysically senses Khodemchuk's demise: the atoms of his body scattered along with the radiation across all of Ukraine. And he is not buried beneath the rubble of the power plant, but in the sky. This bird is yet another depiction of the Chornobyl female figure: a bird symbolizing Valery's wife, Natalia Khodemchuk. In November 2025, Natalia also flew away into eternity. A Russian drone struck the woman's apartment. She died in the hospital from her injuries and burns.[8]

**"PRYMACHENKO NOT ONLY ENVISIONS THE REBIRTH OF THE CHORNOBYL LAND BUT ALSO ALMOST PRECISELY DEPICTS THE NEW SAFE CONTAINMENT STRUCTURE – ONLY IN THE PAINTING IT IS BLACK, WHILE IN REALITY IT IS LIGHT."**

The memory of the disaster was central to Maria Prymachenko's art. Her large-scale memorial work *This is how I dreamed of the fourth reactor* serves as a unique monument to the accident liquidators who lost their lives. The painting depicts a power unit adorned with flowers, with birds flying above it – the souls of the deceased; future generations come to it to honor the memory of the heroes. The flowers symbolize the artist's belief that the land of Chornobyl will be reborn. *This is how I dreamed of the fourth reactor. Flowers will grow on it. And children will carry flowers. It will stand as a monument forever beside it. Our heroes, the doves, will fly in; they saved us, they left us*, Maria Prymachenko captioned the painting, created in 1988. Prymachenko not only envisions the rebirth of the Chornobyl land but also almost precisely depicts the new safe containment structure – only in the painting it is black, while in reality it is light. The artist depicts a similar structure in yet another memorial work and further emphasizes the rebirth of nature: *The eagle flew in, landed on the fourth block, and grew sad: there's nowhere to feed, poplars are growing on the fourth block*. It is also striking that Prymachenko somehow knew that the abandoned city of Prypiat would be

*Just as there was trouble with Reactor 4 in Chornobyl, an old man is herding a cow there. To protect it from radiation, he wrapped its legs, horns, and even its tail, but the cow is munching on grass – it won't listen to anyone. That's the kind of old man he is.* Maria Prymachenko, 1989.

overgrown with poplars, many of which were planted during the construction of Atomgrad. In one of her interviews, Maria Prymachenko shares her vision of the future:

> **I had a dream that I am walking through a beautiful green field. The sun is shining, the birds are singing. It's as beautiful as paradise. Everything will be fine with us – and the radiation won't harm us. Ukraine will bloom again.**

Prymachenko felt a deep sorrow for the nature of her native, idyllic Polissia, which was facing a nuclear disaster. The artist's works addressing the environmental and socio-political themes of Chornobyl were censored. They were either excluded from exhibitions altogether or had their original titles replaced with neutral ones. For example, in the album *Maria Prymachenko*, published in 1989, the works from the Chornobyl series are ignored. Her works continue to be called "folk paintings," with the focus solely on fantastical beasts "that do not exist in nature," and she is described as "a peasant woman from a quiet Polissia village." And there is no mention that, after the Chornobyl disaster, Bolotnia is no longer an idyllic, quiet place. And the only work they did accept is a painting of a red beast opening its toothy mouth: *Mr. Reagan, look at this painting and think about how heavy, burdensome, and senseless this atomic thing is. Look at it and make peace with us, so there may be peace on Earth. The atom is beautiful, [but] you can play with it and say goodbye to your loved ones*. In it, Prymachenko addresses US' President Ronald Reagan, back in the year of the 1986 disaster, hinting at the end of the Cold War and nuclear arms. However, Soviet censors renamed it in the album to the more neutral *The threat of war*.

**THE CHORNOBYL** paintings were not purchased for Ukrainian museum collections under state commission. Almost all of them are in private collections, except for about ten "neutral" ones that did not criticize the Soviet authorities, did not address environmental issues, or were visually more typical of the artist's style. For example, another work depicting a bull and a frog from the Chernihiv Art Museum appears in catalogs with the abbreviated and neutral caption *The bull went to the Meadow*. In the artist's

original concept, the frog warns the bull not to eat the grass, as it is contaminated with radionuclides. The bull replies that he was born in Ukraine and lives in Polissia, and therefore he is not afraid of radiation. This reads as fatalism, an acceptance of one's fate – a life near the fourth reactor. After all, Maria Prymachenko herself, upon learning of the Chornobyl reactor explosion, as the matriarch of her family, decided not to leave her land and ordered her son, daughter-in-law, and grandchildren to continue working in the garden and vegetable patch. She wasn't afraid of radiation; she was only worried that her paintings would get dirty and she wouldn't be able to show them to people. Ukrainian poet Iryna Zhylenko of "The Sixtiers" generation, who lived in Kyiv in 1986, kept a diary of her daily life during the Chornobyl disaster.

> **In Kyiv, children are being sent to pioneer camps starting on the 15th [of May][…] Yesterday I saw how Vira's elderly mother was calmly picking onions and radishes from the garden. I told her she shouldn't do that. And she (a completely illiterate peasant woman, half-deaf) gave me a lesson in wisdom – not so much wisdom as a clear-eyed understanding of our situation. She said: 'The land is poisoned for a long time, not just for a year or two. We won't be able to escape it far or for long. No one needs us anywhere. And we ourselves won't be able to leave our land forever. We'll still have to eat the fruits of our land, because if we don't eat, we'll die.' That is what the old woman told me, and I understood that this was not pessimism, but the realization of an inescapable truth, and therefore (since there is no escape) –reconciliation with it and acceptance […].**[9]

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War came to the town of Ivankiv in northern Kyiv Oblast on February 25, 2022. The night before, Russian troops had invaded Ukraine through the Exclusion Zone. They seized the Chornobyl Nuclear Power Plant and its personnel, then advanced further from the Belarusian border – toward Bucha, Borodianka, Kyiv, and Ivankiv. On February 25, fighting broke out in the town. That same day, a shell struck the Ivankiv Local History Museum, where works by Prymachenko were housed. The fire engulfed the museum. The museum guard was the first to spot the fire. As the roof caught fire, the man pulled everything he could out of the flames. Fourteen of the artist's 25 paintings on display at the museum were saved. Local residents hid these works until the end of the Russian occupation. The fact that residents risked their lives to save the artist's works is the best testament to the pricelessness of Maria Pryimachenko's art.

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Note: All images are from the collection of Eduard Dymshyts, published with the courtesey of Prymachenko's family.

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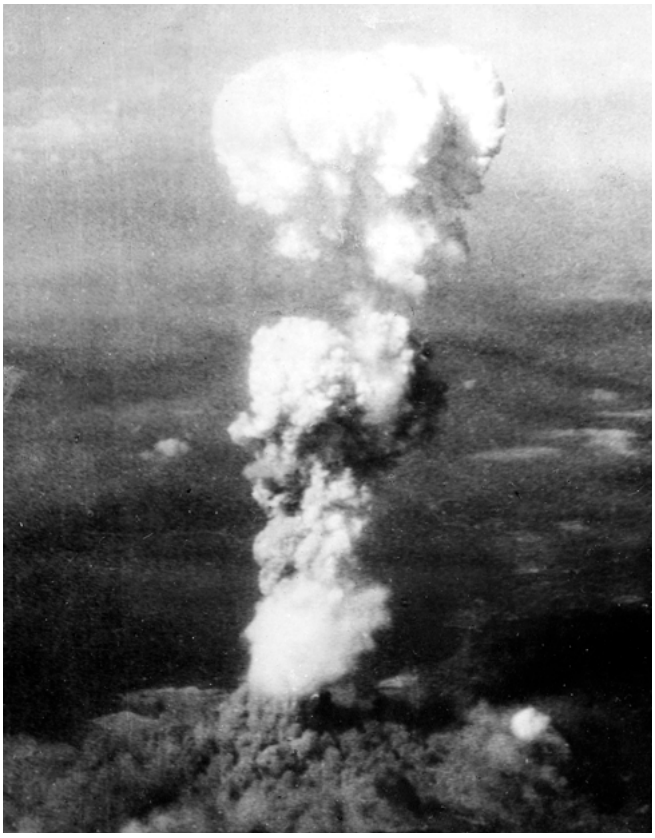
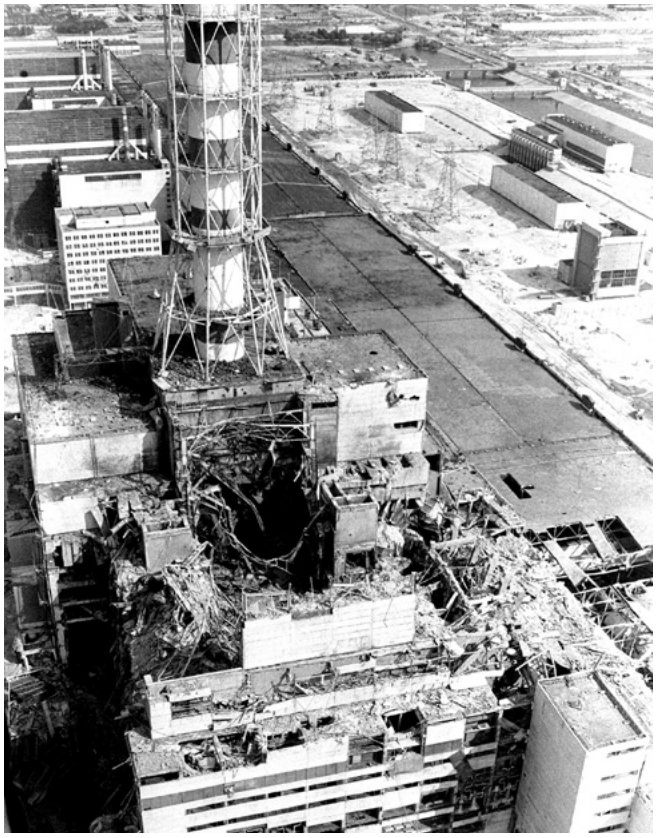


PHOTO: WIKIMEDIA COMMONS

Hiroshima , August 6, 1945.



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Chornobyl, April 26, 1986.

# Writing the **disaster** from **Hiroshima** to **Chornobyl**

## ATOMIC AND NUCLEAR TESTIMONIES AND THE AFTERLIFE OF DISASTERS

by **Florence Fröhlig**


### abstract

This essay examines the memorialization of two pivotal nuclear catastrophes – the atomic bombing of Hiroshima in 1945 and the Chornobyl nuclear disaster in 1986 – through the lens of testimonial writings and Maurice Blanchot's concept of "the disaster." Drawing on Japanese hibakusha testimonies and Chornobyl survivors' accounts, the essay contrasts political memory, which seeks closure and national integration, with cultural memory, which preserves trauma, ambiguity, and unresolved loss. Testimonial writings, rather than commemorating a concluded past, emerge from within the disaster itself, articulating a reality that defies assimilation into redemptive historical narratives.


**KEYWORDS:** Nuclear disaster, Maurice Blanchot, A-bomb literature, Chornobyl literature.

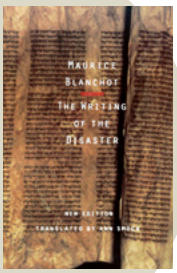
**40** years ago, on April 26, 1986, at 1:23:58 at night a series of explosions destroyed reactor number 4 of the Chornobyl Nuclear Power Plant. 2026 also marks the 35-year anniversary of the collapse of the USSR. The two events are associated, and the accident at Chornobyl is often cited as the event that brought about the final collapse of the communist regime.[1]

Another tragic nuclear catastrophe that has come to symbolize the end of an era is the dropping of the first atomic bomb over Hiroshima, a city of 350,000 inhabitants, at 8:15 in the morning on August 6, 1945, 80 years ago last year. President Truman's official release following the bombing proclaimed:

> **It is an atomic bomb. [...] The force from which the sun draws its power has been loosed against those who brought war to the Far East.[2]**

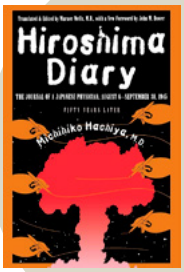
The use of the atomic bomb has long been represented – particularly within the dominant American war narrative – as a necessary measure that hastened the end of the Second World War in Asia and thereby saved countless (American soldiers') lives.

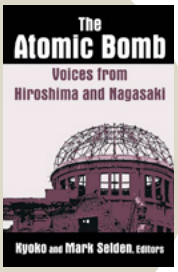
It is striking that both the atomic bombing of Hiroshima and the Chornobyl nuclear disaster have been interpreted in similar terms, as events that accelerated the collapse of existing political regimes, namely the militarist regime in Japan and authoritarian Soviet rule in Eastern Europe. In each case, the collapse has been framed as a historical turning point and celebrated as a return to (Western) civilization and values.




Maurice Blanchot.

Both disasters became powerful cultural symbols. However, whereas the Hiroshima bombing has been iconized through photographs of the atomic mushroom cloud – demonstrating the military use of the atom and American supremacy – the Chornobyl nuclear accident has been iconized through images of the ubiquitous rusted Ferris wheel at Prypiat, symbolizing the dangers of civilian nuclear energy production and Soviet technological and political failure. Yet both these tragic events transcend national and cultural boundaries and have become embedded in the political memories of humankind.




**IN THIS ESSAY,** I share reflections on the memorialization of these two nuclear disasters and discuss the discrepancy between cultural and political memory. Cultural memory is understood here as the memory shared within a social group and mediated through texts, rites, monuments, and commemorative practices, whereas political memory refers to the memory conveyed and sustained by institutions, nations, and states.[3] Both political and cultural memory, however, aim at a permanence of memory and are "founded on durable carriers of symbols and material representations".[4] Yet where political memory tends to stabilize meaning and integrate events into national narratives, cultural memory – particularly when shaped by testimonial voices – often preserves ambiguity, trauma, and unresolved loss. The tension between the two concerns not so much what is remembered but how the past is narratively organized: as closure or as an open wound.

This essay approaches Hiroshima and Chornobyl not primarily as historical events, but as instances of what Maurice Blanchot calls "the disaster": an occurrence that exceeds the logic of eventfulness and unsettles the very continuity of time. Although both catastrophes have been politically framed as turning points that precipitated regime change and reopened the path toward a renewed historical order, such narratives risk assimilating destruction into a progressive teleology. Within a narrative of historical progress, destruction is cast as the precondition for renewal, and the disaster is retrospectively justified by the regime change it is said to have enabled.

**BY READING** Japanese *hibakusha* writings and Chornobyl testimonies alongside Maurice Blanchot's reflections in *The Writing of the Disaster*,[5] I argue that these texts articulate a different temporality – not catastrophe as an event that passes, but catastrophe as an enduring condition.[6] My argument is that testimonial writings resist precisely this logic of redemptive history. Testimony thus emerges not as commemoration of a concluded past, but as writing from within a disaster that does not end.[7] In so doing, these texts shift attention from geopolitical transformation to existential rupture, thereby unsettling the political appropriation of catastrophe.

To contrast political memory with cultural memory in relation to both disasters, I examine four different testimonial writings. First, I draw on Hachiya Michihiko's *Hiroshima Diary*,[8] a personal account of the bombing by a Japanese survivor, a physician working at the Hiroshima Communications Hospital. The diary was not intended for publication but was eventually translated into English in 1955. The second text is an anthology, *The Atomic Bomb: Voices from Hiroshima and Nagasaki*,[9] which documents the experiences of victims from diverse social backgrounds through memoirs, poems, novellas, drawings, and photographs.

**FOR CHORNOBYL,** I am relying on the poems written by Lyubov Sirota, a civilian victim and poet who lived near the Chornobyl power plant and witnessed the accident, and especially her poem "To Pripyat", included in *The Chernobyl Poems* (1995).[10] The second source is the well-known book *Chernobyl Prayer: A Chronicle of the Future* (2005), in which the Nobel laureate Svetlana Alexievich has gathered testimonies from survivors.[11]

**"WITHIN A NARRATIVE OF HISTORICAL PROGRESS, DESTRUCTION IS CAST AS THE PRECONDITION FOR RENEWAL, AND THE DISASTER IS RETROSPECTIVELY JUSTIFIED BY THE REGIME CHANGE IT IS SAID TO HAVE ENABLED."**

PHOTO: WIKIMEDIA COMMONS

In the immediate aftermath of both disasters, the survivors' voices were silenced, either overtly through censorship or indirectly through intimidation and implied threats. Moreover, most information was blacked out by the authorities, and reporters were barred from the disaster sites. American authorities in Japan and Soviet authorities in the Soviet republics of Ukraine and Belarus censored information and blocked publication not only of scientific papers, articles, and books, but also of reportage, short stories, or even poetry describing nuclear disasters and their effects.[12] All information about each accident was classified as secret, including not only data on the extent of radioactive contamination, but also the results of medical analyses. This initial silencing is crucial: political memory begins not as commemoration but as suppression. Only later, once the event can be narratively controlled, does it reappear as a symbol. Testimony therefore emerges not merely as recollection, but as counter-memory – as an intervention into the state's management of visibility and invisibility.[13]

**ALTHOUGH WRITERS** continued to bear witness to the bombings in Japan, their works were not publicly disseminated. This did not, however, prevent the emergence of a clandestine body of literature written by bomb survivors, the *hibakusha*. This so-called A-bomb literature (*Genbaku Bungaku*) was banned from public circulation – people read it by wrapping the books in a newspaper – and remains largely unknown in the West.

A similar pattern of suppression occurred after the accident at Chornobyl NPP, when the Soviet Union tried to conceal the accident and marginalize survivors' testimonies. In response, a distinct genre known as "Chornobyl literature" emerged. In her poem "To Vasily Deomidovich Dubodel" (a Chornobyl victim), Lyubov Sirota (1995) reflects explicitly on censorship and the silencing of the catastrophe:

Lyubov Sirota.

**But thousands of 'competent' functionaries**
**Count our 'souls in percentages, [...']**
**They keep trying to write off.**
**Our ailing truths**
**With their sanctimonious lies.**
**But nothing will silence us!**
**Even after death,**
**From our graves**
**We will appeal to your Conscience**
**Not to transform the Earth into a Sarcophagus![14]**

The testimonies were acts of resistance, not only against past governmental censorship but also against official narratives and the politicization of memory. They conveyed very private and intimate accounts of the catastrophe, offering an alternative to official memory.

Testimonial writings, usually composed in the first-person, arise from the eyewitnesses' urgent need to testify. They also reveal the difficulties the authors faced in finding adequate words/language to convey their experiences, and in identifying meaningful comparisons with which to describe the disasters. One of the survivors interviewed in Alexievich's book observes:

**What I'm telling you, it's not coming out right ... The words are all wrong ... I'm living in a real and unreal world at the same time.[15]**

Following Blanchot, the disaster destroys the very subject who might testify.[16] Yet testimonies nonetheless persist; writing thus emerges from a place where language has already failed. In *hibakusha* or Chornobyl testimonies, survivors often say that what they experienced "cannot be described". Language falters before radiation, burned bodies, invisible contamination. This difficulty resonates strongly with Blanchot's idea that the disaster is precisely that which escapes experience even as it is being lived.[17]

The often-experienced lack of adequate words is further intensified by the affective nature of trauma, which "closely ties nuclear catastrophes' literature to the philosophical potential of poetic language".[18] Testimonial accounts of the Chornobyl disaster bear witness to the efforts of eyewitnesses to address the uncanniness of radioactivity, thereby exposing the limits of cognition, as the two excerpts below show:

**What had happened was something we didn't know about. A different kind of fear. This was something you couldn't hear or see. It had no smell, no color, and it changed us physically and mentally.[19]**

**We were preparing for war, nuclear war, building nuclear shelters. We wanted to hide from the fallout as if it were**

> **shrapnel from a shell. But it was everywhere, in the bread, the salt … We breathe radiation, we eat radiation.**[20]

Even if all eyewitnesses were confronted with the limits of representation, the atomic and nuclear disasters did not affect them in the same way. When reading the testimonies, I was struck by the disparity in how the atomic bomb and the nuclear explosion hit the populations.

**THE HIROSHIMA** testimonies are marked by excessive visibility: light, heat, mutilated bodies, and the overwhelming presence of death. The disaster appears as an instantaneous apocalypse, condensed into a single blinding flash. The atomic bomb killed people in three different ways: by heat rays, explosion blast, and radiation rays. The casualties were immediate and dramatic, and survivors' accounts attest to the same haunting images of nuclear destruction: first a stunning flash, followed by a colossal blast that tore away the clothing and peeled the skin of many victims, leaving them naked or semi-naked. The accounts convey a picture of apocalypse or hell: corpses "frozen by death while in the full action of flight! A dead man on a bicycle," youngsters huddled together awaiting death, mothers with dead children, infants with dying mothers, corpses without faces, and the abject smell of burnt bodies: "Burned people smell like drying squid or look like boiled octopuses," as one witness mentioned.[21] And everywhere flies and maggots:

> **Maggots … were lapping up blood and eating Yoko […] What a clever fly! Wasting no time, it had procreated in the waste left by the destruction. The maggots swarming in Yoko's open wounds soon become flies, and it would be their turn to create new lives.**[22]

In Chornobyl, as all eyewitnesses stressed in their testimonies, the accident was initially invisible to most of the affected victims and their families. The event and the scale of the hazard it presented were initially hidden from the public. And therefore, in contrast to the bombing of Hiroshima, the consequences of the explosion of the nuclear reactor at the Chornobyl Nuclear Power Plant appeared less immediate and spectacular:

> **It happened late Friday night. That morning, no one suspected anything. I sent my son to school; my husband went to the barber's. […] I can still see the bright crimson glow; it was like the reactor was glowing. This wasn't any ordinary fire; it was some kind of emanation. It was pretty. I'd never seen anything like it in the movies. That evening everyone spilled out onto their balconies, and those who didn't have them went to friends' houses. We were on the ninth floor; we had a great view. People brought their kids out […] People came from all around on their cars and their bikes to have a look.**[23]

When reading the accounts of the Chornobyl disaster, we initially sense calm, contrasting with the noisiness and spectacularism of the burning bodies after the bombing of Hiroshima.

> **In the morning, I went out into the garden, and something was missing; the usual sounds were gone. Couldn't hear a single bee – not one! Eh? What was that about? And they wouldn't fly out on the second day. Nor the third. Later, they told us there was an accident at the power plant, which wasn't far off. But for good while [sic] we didn't know. The bee knew, but we didn't.**[24]

The noise and panic came several days later, when the army was sent to put out the fire and evacuate the neighboring population.

> **The planes are flying and flying. Every day. They fly real, real low right over our heads. They're flying to the reactor, to the station. One after the other. While here we have the evacuation. They're moving us out. Storming the houses […] The livestock is moaning, the kids are crying. It's war!**[25]

While the consequences of the disaster at Hiroshima were directly related to wartime violence and had immediately visible casualties, it took some days for the residents of Prypiat to grasp the consequences of the catastrophe. Yet references to wartime life are common in Chornobyl testimonial accounts. Witnesses describe experiences of "evacuation, grief and loss, collective brotherhood, opportunities for heroic action, and even a sense of becoming war veterans", as Johanna Lindbladh notes.[26] The persistent recourse to war metaphors can be understood as a way of anchoring them in something to which witnesses can relate. However, this reveals a paradox: in order to render the unprecedented thinkable, witnesses resort to the familiar vocabulary of armed conflict. At the same time, these metaphors simultaneously fail, because radiation does not behave like an enemy that can be confronted or defeated. Unlike war, which presupposes antagonists, radioactive contamination is impersonal and omnidirectional. Thus, the metaphor both enables and limits comprehension. And the repeating pattern of trauma in the Chornobyl accounts emerges precisely from the shock the eyewitnesses describe upon realizing the consequences of radiation for their own bodies.

**"THE RELATIONSHIP TO ANIMALS, FOOD, SOIL, AND THE MOST ORDINARY GESTURE OF SURVIVAL BECOMES CHARGED WITH ANXIETY AND MORAL HESITATION."**

Besides physical harm, testimonial accounts address the emotional impacts of disasters on survivors' lives. The most poignant testimonies are those in which survivors describe witnessing the suffering and deaths of loved ones. In accounts of Hiroshima, the emotional trauma further encompasses the incapacity of rescuing a family member lying beneath the rubble of a house when the fire spreads, or the shock of seeing corpses eaten by maggots. The testimonies documented affective disorders and shifts in attitude toward life, with many witnesses from both disasters stating that they could no longer bring harm to animals.

> **Slugs were breeding there in swarms. My mother and Teiko diligently dropped them in a can of salt water. I looked in the can. They were half-melted, but not completely melted. [...] After once eyeing this sight, I had begun to suffer from an association. It was about human beings heaped up in a mound of death, half burnt but not completely melted, with no energy to show any sign of resistance.**[27]

Such moments indicate that nuclear catastrophe alters not only political belonging but also ontological orientation. The relationship to animals, food, soil, and the most ordinary gesture of survival becomes charged with anxiety and moral hesitation. The everyday world is no longer self-evident.


Svetlana Alexievich.

**IN ALEXIEVICH'S WRITINGS**, the most dramatic accounts are those of the liquidators' wives and of the liquidators who survived but witnessed the lingering deaths from severe radiation among their colleagues. Toward the end of his monologue, one soldier explains how his friends died: one got fat "like a barrel", another one skinny and black "like coal"; he then remarks that "I was in Afghanistan, too. It was easier there. They just shot you"[28]. The comparison with Afghanistan is telling – conventional warfare, however brutal, offers a recognizable structure of violence: one is shot, one dies. Radiation, by contrast, produces a slow and disfiguring death that erodes the boundaries between the living and the dying. Testimony repeatedly returns to this prolonged temporality of suffering.

Even though the atomic and nuclear disasters did not affect the population in identical ways, these events clearly constitute a turning point in the lives of the eyewitnesses, who were pitched into a new reality that changed their perceptions and disrupted their sense of reality.

> **[...] in the space of one night, we shifted to another place in history. We took a leap into a new reality, and that reality proved beyond not only our knowledge but also our imagination.**[29]

Atomic as well as nuclear catastrophes represent an existential shock for the victims, and their consequences are "inherently irreversible".[30] Testimonial accounts consistently emphasize the disruptive character of such disasters on the lives of the narrators, bearing witness to lingering deaths, lifelong bereavement, physical harm from radiation, keloid scars, malformed children, and ceaseless psychological trauma among those who escaped immediate death. These testimonials further show how the disasters permeated their intimate lives, destabilizing their routines, relationships, and basic sense of orientation in the world.

Read alongside Maurice Blanchot's reflections in *The Writing of the Disaster*, nuclear catastrophe appears not merely as a historical event but as what Blanchot calls the disaster: that which exceeds the logic of occurrence and unsettles the very possibility of experience. The disaster, he suggests, "does not come" – it has always already taken place, undoing temporal continuity and leaving the subject exposed to an aftermath without conclusion.[31] The testimonies from the atomic bombings of Hiroshima and Nagasaki and the Chornobyl nuclear disaster repeatedly articulate this temporal dislocation: survivors speak from a present that is no longer fully present, from a world that continues and yet has irrevocably ended. In this sense, nuclear catastrophe constitutes an apocalypse without eschatology – an ending without revelation or redemption.

Moreover, radiation itself seems to embody what Blanchot elsewhere describes as the neuter: an impersonal force that erodes distinctions between subject and object, life and death, war and peace. Invisible, odorless, and omnipresent, it escapes sensory cognition while penetrating bodies and landscapes alike.[32] The disaster thus no longer belongs solely to the realm of the spectacular – the flash over Hiroshima – but persists as contamination, latency, and deferred illness. The witnesses struggle to articulate not only the horror of destruction, but also the experience of being dispossessed of mastery over perception and language. Their insistence that "the words are all wrong" enacts what Blanchot understands as writing from the disaster: a mode of testimony that arises where language falters and the speaking "I" is itself destabilized. Testimonial writing, then, does not restore coherence to the past; instead, it preserves the trace of an encounter with the impersonal, with a reality that resists assimilation into political narratives of progress or of the end of the disaster.

**SEEN IN THIS LIGHT**, the tension between political and cultural memory becomes even more pronounced. Political memory seeks to stabilize the disaster as a completed historical episode – a turning point that clears the way for a linear historical narrative. In contrast, the testimonial voices, writing from within what Blanchot calls the disaster, resist such narrative foreclosure. Their accounts do not commemorate an event safely consigned to the past; they articulate a persistence, an ongoing ex-

posure that continues to unsettle the present. Cultural memory, shaped by these testimonies, thus preserves the experience of living on in the disaster's interminable aftermath.

> **We drank juice from birch and maple trees. We steamed beans on the stove. We made sugared cranberries. And during the war, we gathered stinging-nettle and goose-foot. We got fat from hunger but didn't die. There were berries in the forest, and mushrooms. But now that's all gone. They don't let you eat the mushrooms or the berries. I always thought that what was boiling in your pot would never change, but it's not like that.** [33]

If testimonial accounts make visible the physical, emotional, and existential impacts of atomic and nuclear catastrophes, they also blur the boundary between the private and the public. The polyphony of voices conveys a shared memory and shapes the cultural memory of the events without creating any official history. In this way, the discrepancy between cultural and political memories becomes starker. Whereas political framings of such disasters foreground the collapse of allegedly undesirable and backward political regimes and promise a resumption of a "normal" (Western and modern) course of history, the testimonial writings evidence instead the collapse of the victims' lives, which are irreversibly marked by the events and will never return to normal. In line with Blanchot, disaster in the testimonial writing is not the end of the world, but life continuing after the end. The world goes on, but not as before: there is no return, nothing can be erased. In this sense, cultural memory, as articulated through testimony, rejects the logic of "after" on which political narratives depend. This contrasts with theological apocalypse. Nuclear disaster does not culminate in transcendence; it leaves behind a "ruined time". For witnesses, there is no clean temporal break between past and present, no stable post-catastrophic order. The disaster persists not as a monument, but as a lived interruption. As Lyubov Sirota wrote:

> **Nothing can be erased, nothing subtracted, nothing cancelled, nothing corrected!**[34]

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## Peaceful atom, haunted legacy.

# ECHOES OF WAR(S) IN CHORNOBYL DOCUMENTARIES

by **Stanislav Menzelevskyi**


## abstract

From a cinematic perspective, the Chornobyl accident became one of the most generative episodes in Ukrainian film history. The explosion of Reactor No. 4 triggered an unprecedented surge in film production: between 1986 and 1998, around forty documentaries were produced, alongside only one feature film. This essay examines one of the earliest attempts to represent the disaster, Volodymyr Shevchenko's *Chornobyl. Chronicle of the Hard Weeks* (1987), now regarded as a key Chornobyl film. Focusing on its pervasive militarized rhetoric, the essay investigates how wartime language and memory structure the film's interpretation of what was fundamentally a civilian, technological catastrophe.

**KEYWORDS:** Chornobyl accident, Ukraine, cinema, war, chronicle, Shevchenko.

Nuclear power was indeed "born violent," as Robert Jacobs puts it, highlighting the scientific and technological continuity between military and civilian applications of the fission reaction.[1] Global narratives of a clear separation between military and civilian uses were largely rhetorical. Nuclear Power Plants (NPPs) and their reactors didn't appear as autonomous, "peaceful" technologies, but rather as byproducts of the larger technological system, the global nuclear arms race, and the post-WWII military-industrial complex that facilitated it. It is symptomatic that explicitly military-affiliated publishers issued some of the earliest popular Soviet books on atomic energy: the Volunteer Society for Cooperation with the Army, Aviation, and Navy, and the Military Publishing House of the Ministry of Defense.[2]

**WHILE SOVIET LEADERSHIP** proclaimed the peaceful use of atomic energy a top priority in the mid-1950s, envisioning the USSR's global ideological leadership in developing civilian nuclear applications, they assigned all military ambitions to the "American war machine"[3] and "cruel and inhuman politicians"[4] of the West. The Hiroshima and Nagasaki bombings, cast as quintessential acts of imperialist violence, quickly became staple tropes across Soviet media.[5] The official bureaucratic formula for this peaceful technological transition to "atomic-powered communism"[6] was encapsulated in the slogan "may the atom be a worker, not a soldier," which circulated broadly across cultural and media landscapes.[7] Soon, these words would adorn a nine-story building in the center of Prypiat, and the atom was tamed to "work for communism," at least until 1986, when the atom for several years became a soldier once again, an enemy soldier.

This is precisely the soldier-worker/war-peace oscillation I would like to highlight in several Ukrainian documentaries about Chornobyl, which unexpectedly manifested the same umbilical connection between atomic technological ambition and militaristic discourse, drawing on the language and memory of wartime experience.

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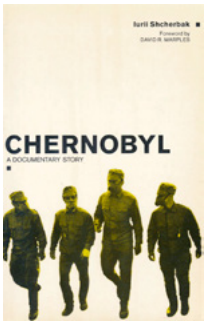
*Chornobyl. Chronicle of the Hard Weeks*, filmed by Ukrkinokhronika (Ukrainian Newsreel and Documentary Film Studio) in 1986, became not the first but subsequently canonical Chornobyl film, defining the representational strategies of the first post-accident years.[8] The filming of the accident appeared challenging for


Film stills from the documentary *Chornobyl: Chronicle of the Hard Weeks* (1986). Bottom left, the director Volodymyr Shevchenko.

several reasons. To start with, there was no iconic atomic mushroom cloud, no visual documentation of the explosion, only its aftermath – the ruins of reactor number 4. The subject matter seemed to be even more elusive: how to represent radiation that is "invisible" to the human eye, that has no color, odor, or any other perceptible form? On top of that, film directors faced not only party censorship, but also fundamental artistic and ethical dilemmas: how, if it were even possible, to represent the tragedy and narrate the trauma of such magnitude. "It's impossible to describe! It's impossible to write down,"[9] summarized the issue one of the disaster's witnesses. A similar imperative is given by journalist Anatolii Shymanskyi while recalling his immediate experience after Chornobyl: "Instead of writing, you should record. Document".[10] Eventually, Chornobyl raised a crucial question for the environmental humanities:

> **How can we turn the long emergencies of slow violence into stories dramatic enough to rouse public sentiment and warrant political interventions?**[11]

**THE DOCUMENTATION SHAPED** the post-1986 discourse, turning into a broader cultural phenomenon of the era; a mission and an obsession of Ukrainian intellectuals, a compulsive civilian and humanistic duty, performed in numerous iconic Chornobyl texts. For example, Iurii Shcherbak, one of the leaders of the Ukrainian environmental movement, confesses in his foundational book *Chornobyl: A Documentary Story* (1989) that after the accident, he was thinking of giving up writing because all "traditional literary forms, all the subtleties of style", all that seemed "artificial and useless" back then.[12] Instead, using a cinematic metaphor, he proposes to his readers an "assemblage" ("montage") of the documents and facts.[13]




*Chornobyl: A Documentary Story* by Iurii Shcherbak.

The Chornobyl experience seemed to slip away from symbolization. Yet the camera could still roll. Ultimately,

*Chronicle*... proposed a universal solution, the pathos of which is encapsulated in both the title of the film and the studio name – chronicle – implying the renunciation of artistic reflection in favor of straightforward documentation.[14] Catastrophic events indeed required urgent filmmaking. *Chronicle*..., contrary to the established logic of the cinematic production process, was greenlit by the studio without a script.[15] It sought to capture what was still too raw to narrate, documenting the events and lessons of the tragedy for future generations. Ultimately, chronicle documentaries became a dominating genre of the Chornobyl cinema in the few years after the accident. It was only in 1990 that the Dovzhenko Film Studio in Kyiv produced the first Soviet fiction film about Chornobyl – *Rozpad* (directed by Mykhailo Belikov).[16]

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The film crew began shooting *Chronicle*... on May 14, 1986, 18 days after the accident, missing the first stages of the containment efforts, when Mikhail Gorbachev broke the silence and mentioned the explosion for the first time during the TV address. By August 1986, the *Chronicle*... crew filmed around 20,000 meters (12 hours) of footage. Not until later did Shevchenko get to working on the script and voice-over narration with his regular collaborator, Ihor Malyshevskyi. Reflecting on their shared focus, the latter once confessed:

> **For some reason, I can so easily picture Volodia on a battlefield. Perhaps it's because most of what we created together was about the war.**[17]

*Chronicle*... was finished by October 3, 1986, and initially greenlit by the Soviet Goskino. Then the film was reviewed by USSR Gosatomenergonadzor (USSR State Committee on Supervision of Safe Conduct of Work in Atomic Energy). 152 remarks and four rounds of editing later, the film was shortened to less than an hour. The first public screening of the film took place at the Kyiv House of Cinema only five months later, on February 14, 1987, an event for which Shevchenko was released from the hospital, where he was receiving treatment for what was diagnosed as "bronchitis" caused by excessive radiation exposure.[18] The general public was able to view the film with an even more significant delay. Initially, there were only four distribution copies for the entire republic, reflecting state reluctance and the political tensions surrounding its subject matter.[19] The director Volodymyr Shevchenko died on March 29, 1987. According to the urban legend, his film camera has been buried as well, due to the inability to decontaminate the film equipment. Subsequently, *Chronicle*... was even – somewhat metaphorically – dubbed "the most dangerous film in the world".[20]

Ultimately, *Chronicle*... became *the* Chornobyl film, gaining significant festival circulation, critical recognition, and broad international television distribution.[21] In the years that followed, several industry awards were named after Shevchenko. Ranked 49th–50th in the top 100 Ukrainian films, the film solidified its lasting artistic and historical importance, as well as its influence on generations of Ukrainian and international filmmakers".[22]

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And here is the main question: how was *Chronicle*... organized and rhetorically designed to position its audience in ways that secured such acclaim? Compositionally, it is heavily voice-overed footage of the first months of the liquidation efforts (cleaning the area of radioactive debris, sealing problematic areas with concrete, etc.), interviews with experts, doctors, local residents, and politicians.[23] The film also covers the evacuation of the Exclusion Zone, the resettlement of the people, and panoramas of the newly constructed sarcophagus over the destroyed reactor. The *Chronicle*... closure is a didactic warning to the world community and future generations:

**"THE FIRST PUBLIC SCREENING OF THE FILM TOOK PLACE AT THE KYIV HOUSE OF CINEMA ONLY FIVE MONTHS LATER, ON FEBRUARY 14, 1987."**

> **Let us remember, in sorrow and joy, that the atom has two faces. [...] its other face, similar to the one whose sinister mushroom has for decades been hanging over the consciousness of the present-day mankind, over its perception of the world.**

**REVIEWS OF THE FILM**, while highlighting the heroism and dedication of the production team, consistently return to one of its central leitmotifs, cementing the *Chronicle's* reception in antiwar and non-proliferation terms. In this fog of peace, critics positioned the film as both a historical lesson about the technological disaster and a global call for disarmament:

> **This is a cautionary film, a warning bell—no one and nothing will survive a global nuclear catastrophe, which we can and must prevent today.**[24]

When *Chronicle*... was screened in Moscow in October 1987 as part of a Ukrainian film festival during the Days of Ukraine at VDNKh (Exhibition of Achievements of National Economy), it was indeed promoted as "a film about the struggle for peace, a work addressing internationalism and the friendship of peoples".[25] Still, the film's most striking antiwar framing was again evident in the Russian capital, at the XV Moscow International Film Festival in July 1987. Opened by Gorbachev himself, the event was designed to showcase the successes of democratic reforms in both the country and its film industry. It was also one of the first occasions where *Chronicle*... was presented to the international film community as a truly global phenomenon, a movie about the universal tragedy of a planetary scale. What is remarkable is that this universal agenda, inspired by the film, was shared by the film's authors, Soviet industry bureaucrats, and foreign guests alike. If *Chronicle*... cinematographer Volodymyr Taranchenko claims the topic covered in the film is relevant

worldwide and "very important for the future existence of humanity", then the new Head of the USSR State Film Agency Aleksandr Kamshalov sharpens the message into geopolitical terms, stating that:

> **[…] the harsh lessons of Chornobyl advocated for a nuclear-free world […] for the humanism of cinema, for peace and friendship between peoples!** [26]

But it is the acclaimed American film director Stanley Kramer who took the film to the highest level of universalist peace pedagogy. Inspired by *Chronicle…*, he decided to make his next film about Chornobyl and wanted this production:

*Rozpad* (1990), directed by Mykhailo Belikov, was the first Soviet fiction film about Chornobyl.

> **[…] to be not Soviet, not American, not Soviet-American, but global. I want every viewer to understand that the tragedy of Chornobyl can happen anywhere, to anyone, and at any time".**[27]

**IT IS WORTH NOTING**, however, that the film's reception was marked from the outset by a certain ambivalence, one that partly mirrored the dramaturgical structure and rhetorical modality of the film itself. This paradoxical convergence may be summarized by the canonical Soviet Cold War formula of the "struggle for peace," in which a pacifist teleology is articulated in explicitly militaristic terms. If we look beyond the neutral documentation mission, Shevchenko's movie is a classic example of what Bill Nichols calls the expository mode of documentary filmmaking.[28] The expository mode of non-fiction representation is the most conservative and authoritarian way of organizing a film argument, which employs didactic narration, direct address, voice-over, and non-synchronized sound. It aims to present an epistemic truth, to persuade the viewer rather than challenge the status quo. The expository mode aims to present a clear and ideologically coherent narrative to the viewer, with the filmmaker serving as a neutral mediator. From this perspective, *Chronicle…* can be read as a conventional Soviet propaganda film that normalizes catastrophe through an emphasis on administrative competence and heroic sacrifice in the struggle against radiation. What made the film globally resonant, however, was its appeal to the universal grammar of war and the affective structures of empathy it mobilizes.

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In the first three years after the accident, the optimistic official narrative was structured around "liquidation": the normalization of the Chornobyl accident and the success of cleanup activities.[29] What scholars would later identify as the state media strategy (focus on the heroic deeds of the emergency workers, the familial solidarity of the Soviet people, and the efficiency of the central and local authorities)[30] was early and clearly manifested in *Chronicle…*:

> **[…] the Chornobyl accident highlighted the wonderful qualities of Soviet people: responsibility, decency, courage, selflessness, nobility, generosity.**[31]

**WHILE NOT DENYING** the selflessness of many cleanup workers, related sometimes to lack of knowledge as well as to the notion of public duty, it is worth noting a curious semantic slip. The official use of the term "liquidation" (*likvidatsiia*) encoded Soviet post-accident governance within a militarized semantic field, aligning the Chornobyl disaster with the warfare rhetoric. In the absence of an officially designated perpetrator – and under conditions in which blaming the Party was impermissible–the catastrophe was narrativized as a people's war against an unprecedented enemy: radiation itself.[32] The rhetoric proved so tenacious that it outlived the Soviet Union itself, continuing to reverberate decades later in the imaginaries of European intellectuals for whom liquidators are "soldiers of celestial fire".[33]

Historical irony once again twisted the wish of the pioneer of the Soviet atomic bomb project, Igor Kurchatov, who is believed to have coined the formula of the peaceful atom being a worker, not a soldier. Hence, *Chronicle…* is saturated with warfare references throughout: "a deadly enemy[…] invisible, carried out its dark deed in the body of man. Radiation, it has no odor, no color, only a voice".[34] In Shevchenko's film, the "deadly enemy" gained

a voice of the Geiger Counter, which afterward became the main feature of post-accident film soundscapes.

A simple question remains, however, why does the film envision Chornobyl as a war zone, a battlefield. Such reasoning might be expected from a documentary like *The Chornobyl Operational Zone* (1987), commissioned by the USSR Ministry of Defense – but not from a newsreel and documentary film studio production. *Chronicle…* aesthetic choices are hardly self-evident and, in fact, were largely essentialized *a posteriori*, given that warfare rhetoric gradually vanishes from Chornobyl cinema after 1988. Already in *Rozpad* (1990), this military-patriotic pathos is openly mocked, particularly as manifested in one of the canonical episodes of Chornobyl iconography – the hoisting of the red flag over the fourth reactor, an image that inadvertently resembles the raising of the Soviet banner over the Reichstag. This episode is absent from Shevchenko's film but appears in *Chornobyl: Two Colors of Time* (1986–1988).

"At the alarm, our army took its stand on the defensive line of misfortune. They went as if beyond the front line – but without ammunition, carrying only dry rations," the narrator of *Chronicle…* comments over a montage of military vehicles and people boarding APCs. It is true that more than half of the cleanup workers were military personnel.[35] It is also true that the extensive use of military equipment (as well as its abundance in the film) offered protection against alpha and beta radiation, radioactive dust and contamination, but not against gamma radiation. Yet the expansion of war references went beyond this immediate logic. Numerous witnesses compared Chornobyl to World War II because the memory of the war remained vivid, especially in the devastated regions of Ukraine and Belarus, and was continually reinforced through established practices of commemoration.[36] The 1985 40th anniversary of victory in the Great Patriotic War was a particularly largescale example: it featured a major parade on Red Square in Moscow – the first such parade since 1965 and the last of comparable scale in Soviet history – alongside films such as *Battle of Moscow* (1985, dir. Yuri Ozerov) and *Come and See* (1985, dir. Elem Klimov), as well as exhibitions, television programs, and commemorative medals. Operating within the established framework of war-oriented commemorative practices and cinematic tradition, the *Chronicle…* team undoubtedly drew on their extensive experience in the war-film genre to shape the narrative and iconography of their production.

**AT THE SAME TIME**, comparing Chornobyl to a war not only highlighted Soviet "cult of war",[37] but constituted the accident as a universal traumatic experience, manifesting the historical rupture of "before" and "after." As one of the witnesses in Shcherbak's documentary novel describes it: "It was reminiscent of the war. Every one of us in the Town Committee has kept until now this sense of a boundary: before the war and after the war. We simply say: that was before the war."[38]

It is no surprise that the heroism of liquidators, as well as filmmakers, became a modernized version of the feats of the Soviet army during the Great Patriotic War, while the experience of horizontal mobilization and solidarity was appropriated by the official Soviet heroic narrative. A 1987 article in Ukrainian press emphasized this solidarity in the following terms: "In those fraught days, the artists – chroniclers, historians, fighters all at once – set aside every other task and bent themselves to a single aim: to give their compatriots the unvarnished word of truth."[39] Eventually, *Chronicle…* was described as the most tragic postwar cinematic chronicle, and its creators were proclaimed "worthy heirs to their predecessors, the frontline cameramen who filmed in the fire of the Great Patriotic War".[40] After the preview of *Chronicle…* filmmaker, film actress, and social activist Dzhemma Firsova raised a question of whether the documentary *Defeat of the Nazi Army Near Moscow* (1942) would have been as effective if it were shown six months after the events depicted.[41] The film's aesthetic and moral urgency clearly derived from wartime experiences and iconographies. Not coincidentally, *Chronicle* was awarded the Oleksandr Dovzhenko Golden Medal, an All-Union Goskino prize for the best military-patriotic film (1987).[42]

**"THE HEROISM OF LIQUIDATORS, AS WELL AS FILMMAKERS, BECAME A MODERNIZED VERSION OF THE FEATS OF THE SOVIET ARMY DURING THE GREAT PATRIOTIC WAR."**

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And yet, contrary to the sense of traumatic rupture often identified as the main trigger for the unprecedented militarization of Chornobyl's representation in *Chronicle…* and in the immediate post-1986 culture more broadly, such rhetorical framing had a longer genealogy and must be considered within an earlier cinematic tradition. A significant corpus of Ukrainian films produced between 1974 and 1986, depicting the construction of the Chornobyl NPP and the city of Prypiat, pioneered the iconography of nuclear modernity before the disaster – one that was later overshadowed by the technological skepticism and dystopian consensus of the post-1986 era.[43] Although these pre-accident Ukrainian films were made in a utopian mode of technopolitical optimism and progress, avoiding the explicit military imagery characteristic of *Chronicle…*, they nevertheless still echoed the experience and memory of war.

One of the first Chornobyl films, *Chornobyl NPP*–produced twelve years before *Chronicle…* but written by the same Ihor Malyshevskyi – already establishes a pattern of avoiding any association between nuclear technology and its military applications, containing only one explicit reference to the atom in a wartime context, voiced by a schoolchild: "In the past, Russian spies and partisans used the atom to blow up trains," which the


Film stills from *Chornobyl: Chronicle of the Hard Weeks*, Volodymyr Shevchenko, 1986.

film frames ironically as a naïve, historically displaced remark. In pre-1986 movies the memory of the war is typically invoked in two, non-technological, ways: first, through direct references to the wartime history of the region, and second, through the biographies and army-related experiences of the construction workers building the ChNPP and the town of Prypiat. In this context, the "peaceful atom" is imagined rather as a therapeutic force, intended to bring generations together, heal wartime traumas, and repair infrastructures damaged by the war.

**THIS NARRATIVE STRATEGY** is fully articulated in *Morning of Atomohrad*.[44] Produced in the same year as *Chornobyl NPP*, but by a different studio – *Ukrtelefilm* (the Ukrainian Studio of Television Films), which enjoyed a far wider reach due to its television distribution – *Morning of Atomohrad* largely defined the pre-accident iconography of Chornobyl in Ukrainian cinema. The film was originally envisioned to open, somewhat surprisingly, with wartime newsreel footage of the Prypiat River being crossed by soldiers of the 1st Partisan Army of General Kovpak, situating the regional history within a larger historical narrative: "[…] while on the banks of the quiet Prypiat River […] the Soviet Army was advancing, liberating Ukraine." This scene was ultimately left out, but it was replaced with an equally evocative moment. Near a World War II monument, Komsomol members – who are also construction workers of the Chornobyl NPP and the town Prypiat – take an oath, in the name of the sun and the Motherland, to always remember the military valor of their fathers and the names of all those to whom they owe their lives and happiness. Veterans attend the ceremony, casually asking about the ongoing construction of the nuclear plant. Through this random and informal exchange, the generational gap is bridged, linking the partisans of the Great Patriotic War with the Komsomol builders who are going to shape the Soviet nuclear future.

From there, the film unfolds as an almanac of worker biographies, many of whom served in the army or were affected by the war. Among the former are two brothers, Ivan and Mykhailo, former tank drivers, who connect soldierly skills to those needed for construction:

> **Now, all these qualities are helping us in our work on constructing the nuclear power plant.**

Among the latter is Maria Serdiuk, a house painter. Orphaned in childhood, she was raised in Makarenko's labor colony, took part in the collectivization campaign, and survived Auschwitz. Maria not only appears in the film; she is also the subject of the poem "Maria from Ukraine – No. 62276: From Auschwitz to the Chornobyl Nuclear Plant",[45] part of the cycle "Breath of the Atom" (which also includes a poem about Ivan and Mykhailo, *The Welders Are Kings)*, by the renowned Ukrainian poet Ivan Drach. In *Morning of Atomohrad*, Maria is featured in a deliberately staged scene as a survivor, her presence is a symbol of endurance. Her voice addresses the young female workers, casting the horrors of war in the light of the peaceful atom:

> **And what we are building here, the first stream of our atom, let it serve peaceful purposes, bringing us happiness and beauty, so that we never again know about such horrible things as war, explosions, and worries.**

**SADLY, THAT HOPE** never materialized. In 2022, the Russian army launched a full-scale invasion of Ukraine, and Prypiat area once again became a site of military offence. Entering from Belarus, Russian forces seized the Chornobyl NPP (later also capturing the Zaporizhzhia NPP, which they still control). Nuclear energy returned to its military origins: for the first time in history, a nuclear power plant was occupied by an invading army and essentially weaponized. The Russian invasion, unlike the explosion of the fourth reactor in 1986, was recorded by an anonymous Ukrainian resident and by the station's surveillance cameras. Using

smartphone footage, panoramic views of the plant, testimonies from Ukrainian personnel who survived the occupation, and the station's own surveillance recordings, Oleksiy Radynskyi created *Chornobyl 22* (2023) and *Special Operation* (2025), contributing to a broader Chornobyl filmography and documenting the most recent iteration of the linkage between the nuclear power plant and military action – between atom and soldier. "We called the accident a war," recalls one of the Ukrainian survivors of the occupation, "before the war, that meant before the accident." Therefore, preventing any recurrence of the 1986 catastrophe became one of the principal objectives of the Ukrainian personnel during Chornobyl site occupation. Using all their technical and professional expertise, they resisted, manipulated, and pressured the Russian soldiers. A tactical victory was achieved, as Russian army withdrew from the exclusion zone in the end of March of 2022. But the war continues.

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3 K. A. Gladkov, *Energiia atoma* [Energy of the atom] (Moscow: Detskaia Literatura, 1968), 167.

4 Yu. I. Koryakin, *Biography of the Atom: Stories on the Discovery and Use of Atomic Energy* (Moscow: Gosatomizdat, 1961), 3.

5 Eventually, marking the twentieth anniversary of the Soviet peaceful atom, Mosfilm released two ideologically charged films: *Take Aim* [Vybor tseli, 1974/76] and *Moscow, My Love* [Moskva, liubov moia, 1974]. In both films, Hiroshima functions as a traumatic core and a kind of MacGuffin, but they develop the theme in different genre directions. While *Take Aim* remains a historical epic focused on the Soviet nuclear project, Moscow, *My Love* ventures to fuse this traumatic memory with the celebration of Russian high culture, ballet in particular.

6 Paul R. Josephson, "Atomic-Powered Communism: Nuclear Culture in the Postwar USSR", *Slavic Review* vol. 55, no. 2 (1996): 297–324.

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8 Practically in parallel, Ukrainian studios commissioned *Chornobyl: Two Colors of Time* (1986–1988, dir. Ihor Kobryn), *Pain and Courage of Chornobyl* (1986, dir. Israel Goldstein), and *Chornobyl: Breaking Bread* (1986, dir. Oleksandr Kosinov), while the central Russian studios produced *The Bell of Chernobyl* (1986, dir. Rollan Serhiienko) and *Warning* (1987, dir. Vladimir Osminin and Elena Pozdnyak).

9 Svetlana Alexievich, *Voices from Chernobyl: The Oral History of a Nuclear Disaster* (Normal, Ill.: Dalkey Archive, 2005), 12, 19.

10 Alexievich, *Voices From Chernobyl*, 124.

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12 Iurii Shcherbak, *Chernobyl: A Documentary Story* (New York: St. Martin's Press, 1989), 6.

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15 Ihor Malyshevskyi, *Volodymyr Shevchenko. From Kulunda to Chornobyl* (Kyiv, Mystetstvo, 1988), 12.

16 The title was deliberately left untranslated for international distribution, preserving a sense of unfamiliarity. It also appears in transliteration from Russian as Raspad. The word carries multiple layers of meaning that are lost in translation: radioactive decay, the breakdown of the social fabric, and the disintegration of the USSR.

17 Among the latest films of the creative duo were the wartime trilogy *Soviet Ukraine. Years of Struggle and Victory* (1974–1977); the wartime documentary *Battle for Kyiv* (1973); and the WWII feature film *Counterstrike* (1985). Moreover, both Volodymyr Taranchenko and Viktor Kripchenko, cameramen on *Chronicle...*, brought experience from WWII-related projects: Taranchenko as an assistant to the war cameraman Valentyn Orliankin, and Kripchenko through his work on the abovementioned *Soviet Ukraine: Years of Struggle and Victory* (1974–1977). In Malyshevskyi's memoirs of Shevchenko, one recurring theme is not only Volodymyr's childhood experience of war and occupation, but also his extraordinary knowledge of the historical and technical details of WWII. Malyshevskyi, *Volodymyr Shevchenko*, 13.

18 Although Shevchenko's external radiation dose exceeded the permissible limit, reaching 126.3% of the level established by the temporary sanitary safety regulations for Chornobyl-related work, the press reported cautiously, avoiding mention of his diagnosis and instead focusing on his personal courage and the fulfillment of his civic and professional duties, as well as his obligations as a Communist and an artist. Bronchitis appears in Shevchenko's own diary, though Malyshevskyi interprets it merely as a "reassuring" diagnosis. In subsequent literature, however, the canonical diagnosis becomes lung cancer. See: Anatolii Karas, "Diktatura (khuodno-dokumentalna povist')", *Viche*, no. 10 (2006).

19 Malyshevskyi, Volodymyr Shevchenko, 139–14.

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24 *Chornobyl: Khronika tiazhkykh tyzhniv* [*Chronicle of the Hard Weeks*]. *Vechernii Kyiv*, no. 92, April 20, 1987.

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26 V. Borshchov and I. Dumkin, "Chornobyl: Khronika tiazhkykh tyzhniv", *Na ekranakh Ukrainy*, no. 28, July 11, 1987.

27 Ibid.

28 Bill Nichols, *Representing Reality: Issues and Concepts in Documentary* (Bloomington: Indiana University Press, 1991), 33–38; Bill Nichols, Introduction to Documentary (Bloomington: Indiana University Press, 2010), 84–86.

29 Kyiv Studio of Popular Science Films, among others, produced four "optimistic" pictures aimed to restore devalued legitimacy of the Soviet scientific project, to normalize the accident and define it as a series of acceptable errors: *Radiational Shield of Kyiv* (1986, dir. Yurii Tyshchenko); *Nuclear Station Engineer* (1987, dir. Mykhailo Tkachuk); *Special Processing Site* (1987, dir. V. Kravchuk); *Radiation. The Defensive Line* (1987, dir. Ihor Ponomairov).

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31 *Chronicle of the Hard Weeks.*

32 The verdict in the Chornobyl trial was announced on July 29, 1987.

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34 *Chronicle of the Hard Weeks.*

35 See: Svetlana Bodrunova, "Chernobyl in the Eyes: Mythology as a Basis of Individual Memories and Social Imaginaries of a 'Chernobyl Child'", *Anthropology of East Europe Review* vol. 30, no. 1 (Spring 2012): 22; *Chornobyl: Breaking Bread* (1986, Ukrkinokhronika, dir. Oleksandr Kosinov).

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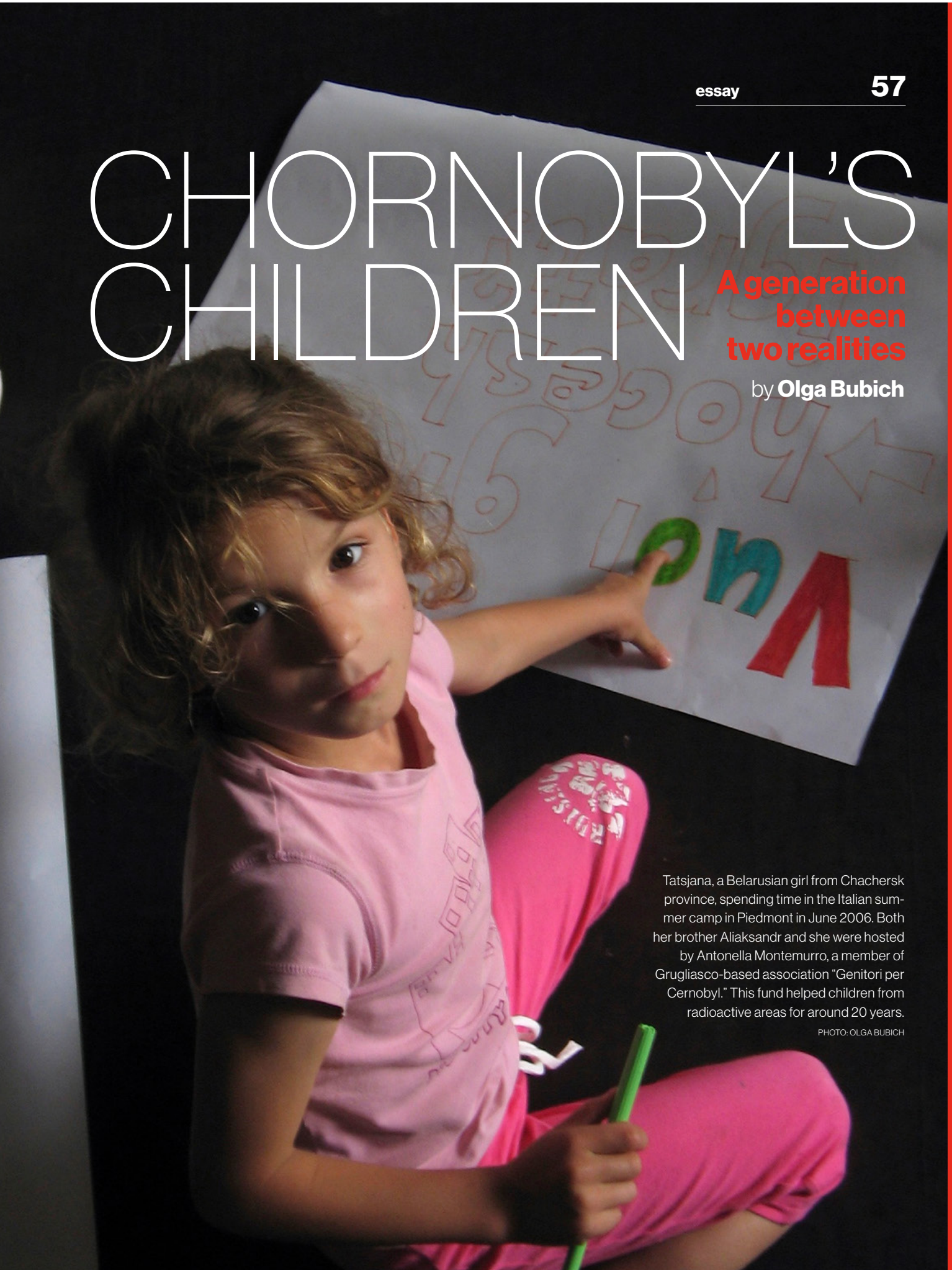
# CHORNOBYL'S CHILDREN

## A generation between two realities

by **Olga Bubich**



Tatsjana, a Belarusian girl from Chachersk province, spending time in the Italian summer camp in Piedmont in June 2006. Both her brother Aliaksandr and she were hosted by Antonella Montemurro, a member of Grugliasco-based association "Genitori per Cernobyl." This fund helped children from radioactive areas for around 20 years.

PHOTO: OLGA BUBICH

Children from Buda-Kashaliova province taking part in a Dutch humanitarian program, ready to board the plane for the first time in their lives. Spring, 2013 .

PHOTO: OLGA BUBICH


## abstract

After the collapse of the USSR, rural Belarus faced severe economic and social crises and psychological issues. International humanitarian Chornobyl Children respite programs enabled hundreds of thousands of children to spend time abroad in Europe and North America. Although designed to improve health after the 1986 disaster, these initiatives gave encounters with other ways of living and thinking. Personal testimonies and long-term observations suggest that the experience significantly influenced the youth's aspirations, self-perception, and life trajectories. These projects became a transformative encounter with a bigger world.

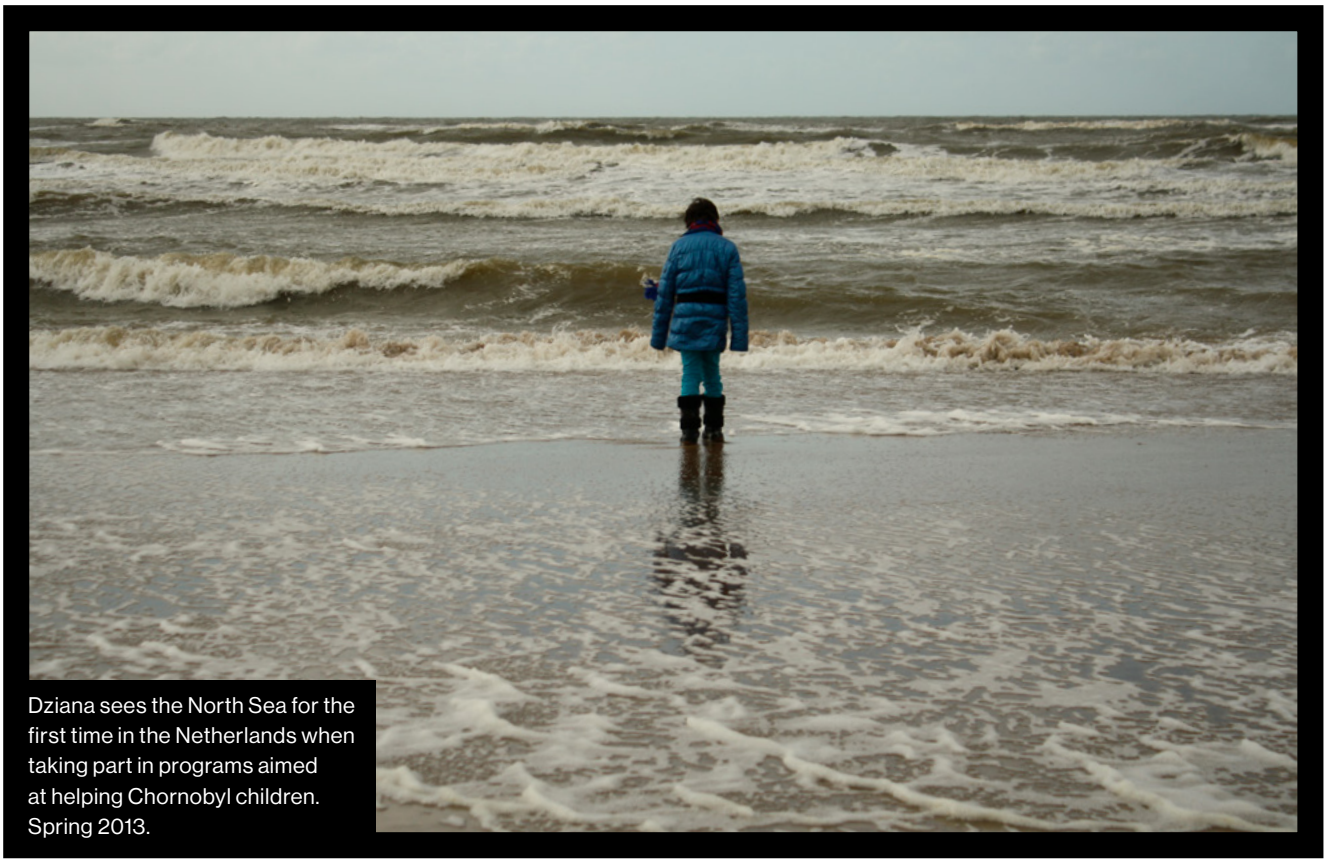
**KEYWORDS:** Belarus; "Chornobyl Children" programs; post-Soviet social transformations; Chornobyl aftermath.

Large families, joblessness, underpaid manual labor at factories; *kolkhozes*, or dairy farms; poverty, limited access to education and healthcare; alcohol abuse and domestic violence – these are the stereotypes often associated with former post-Soviet states during the first decade after the collapse of the USSR. Unfortunately, they were close to reality. Visiting the rural areas of Belarus, Aliaksandr Lukashenka, the country's only president since 1994, mostly did so in a "Potemkin village" format, ignoring the actual economic and social collapse. From 1993 to 2002, average yearly inflation reached 247.2%, while salaries and pensions stayed below 100 USD.[1] The suicide rate between 1990 and 1995 was 32.28 per 100,000 – the sixth highest in the WHO European Region – with cases among males (mostly related to binge drinking) being five times higher than among females.[2]

However, a parallel reality began to emerge at approximately the same time, thanks to humanitarian respite programs launched in more than a dozen countries for the so-called "Chornobyl Children." These programs operated across various periods and countries in Italy, Ireland, Germany, Switzerland, Canada, the USA, and other European and North American states.[3] Overall, around 1 million children are estimated to have participated, traveling abroad for a temporary stay to improve their health. For many, given the world they were accustomed to, participation in these initiatives meant much more than a strengthened immune system or the intake of radiation-free food and air.

## Half a million Belarusian children

The first and largest Belarusian initiative of this kind was the "For the Children of Chernobyl" charitable fund, which operated from 1989 to 2012. It was headed by Gennady Grushevoy – a



Dziana sees the North Sea for the first time in the Netherlands when taking part in programs aimed at helping Chornobyl children. Spring 2013.

PHOTO: OLGA BUBICH

Belarusian academic, politician, and human rights defender also involved in the Belarusian Popular Front movement. Its network was impressive: by the mid-1990s, the fund's teams were active in over 20 cities and towns in Belarus, managing more than 40 long-term programs for charitable, medical, and humanitarian outreach.

Children from areas contaminated by the 1986 catastrophe were offered respite from lingering radiation. Some stayed with host families, developing lifelong personal bonds, while others lived in groups with chaperons in communal accommodations. Medical checkups were regularly arranged, often alongside essential dental care.

**FOR SOME INTERNATIONAL** associations, aid went beyond the initial scope of respit from radiation. It evolved into targeted support, from assistance for low-income families to long-term partnerships with local schools, hospitals, and crisis centers. Support often came through the purchase of equipment, furniture, or medication which were a tangible investment in the long-term functioning of local infrastructure. Although the exact number of participants is difficult to determine, researchers estimate the figure at half a million – roughly 7% of the country's population.[4] While Grushevoy closed his fund in 2012, stating it had "fulfilled its social mission" and that grownups must now be "in charge of their own destinies",[5] many other NGOs continued their work until 2020, when they faced a prolonged hold caused first by the pandemic and later by a crackdown on civil society.

## "I have no idea where I would be now"

It was in June 2000, when carrying a bulging folder with all sorts of documents required to navigate notorious Belarusian red tape and coordinate the humanitarian trip, I met the first group of mine at the airport. Watching them clutching chocolate boxes and poorly hidden, jingling vodka bottles that their parents had handed them as souvenirs for Italian host, I could hardly imagine the amount of work I was to face. Forty-nine minors, two group

**"CHILDREN FROM AREAS CONTAMINATED BY THE 1986 CATASTROPHE WERE OFFERED RESPITE FROM LINGERING RADIATION."**

Planning to establish new contacts and create projects of targeted help, some associations visited schools in rural areas.

PHOTO: OLGA BUBICH

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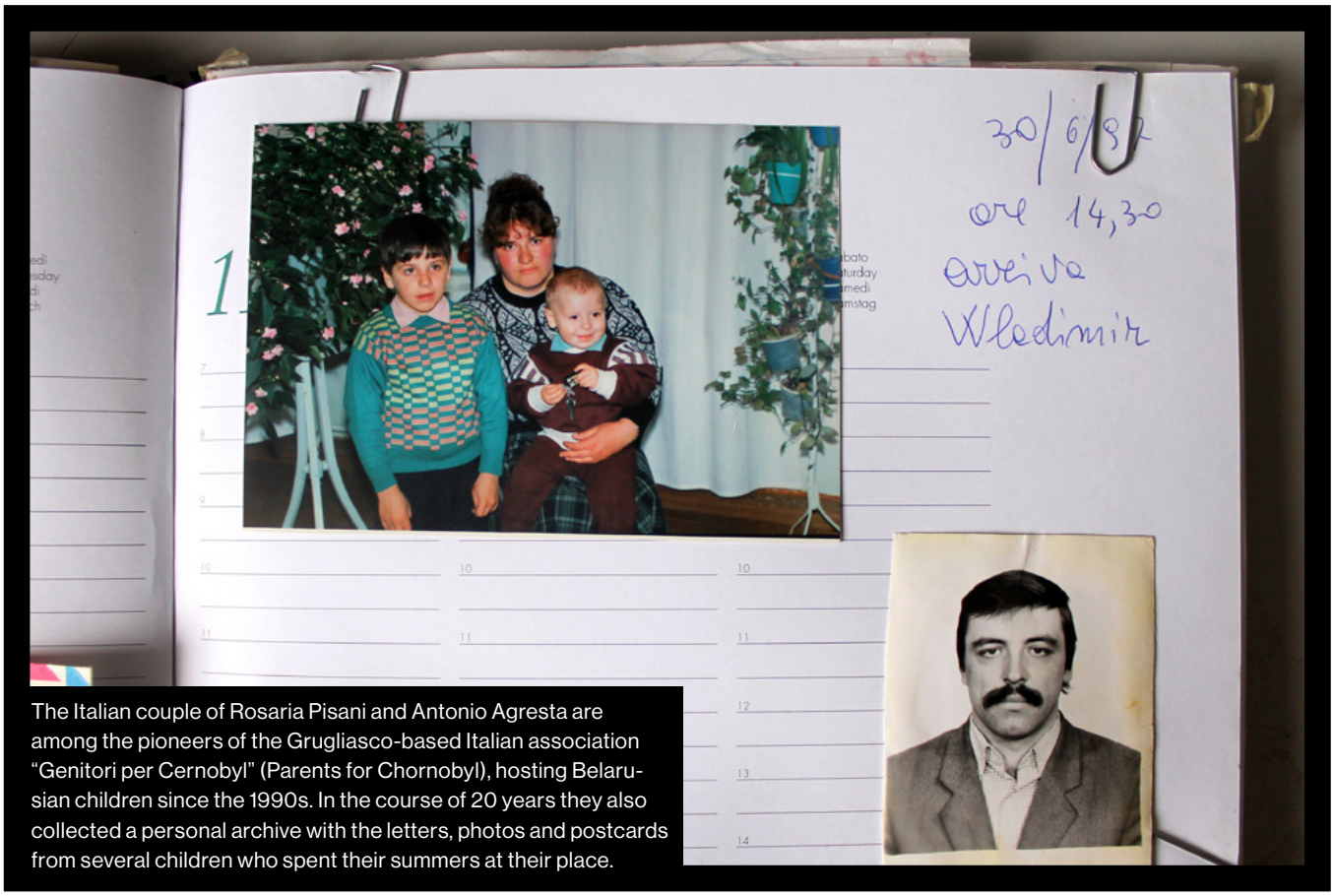


The Italian couple of Rosaria Pisani and Antonio Agresta are among the pioneers of the Grugliasco-based Italian association “Genitori per Cernobyl” (Parents for Chornobyl), hosting Belarusian children since the 1990s. In the course of 20 years they also collected a personal archive with the letters, photos and postcards from several children who spent their summers at their place.

PHOTO: OLGA BUBICH

leaders, and 40 days in a small Italian town – this is the scenario I would then repeat each year for around two decades. However, during these years what I witnessed was not only health-related, but social and psychological changes in the growing children – the mindsets of the entire generation of Belarusians underwent transformations due to the unique intensive exposure to what one of the former participants of such a project defined as "the world that was bigger than I."

When looking at Belarusian youth today, one might conclude that the technological revolution and internet access have bridged the gap between them and their global peers. However, in the late 1990s, the divide was stark, especially in the case of the children from rural areas. Many families I worked with lacked basic sanitary facilities, let alone rotary telephones and landlines – to say nothing of a mobile connection. Even ten years later, while accompanying Dutch host families to the southern district of Buda-Kashaliova, I still saw homes using traditional Russian stoves and horse-drawn transport for daily needs. For children in these areas, going to school often meant a daily, several-kilometer journey on foot through forests or along desolate highways.

**ULADZIMIR**, a former participant in an Italian program, recalls that due to his village's remoteness, he and his sister Alena were sent to a *internat* – a boarding institution for orphans and "social orphans" (children from disadvantaged families whose parents, however, despite of their negligence, were not deprived of parental rights – mainly to allow the state to show good statistics). For these children it was their only way to receive basic education.

He remarked:

> **We lived in a small remote village with no job opportunities for my parents or school for my brothers or sister. The only company I had was that of Alena and one more girl next door. I didn't have a clear idea of what the world beyond looked like. In 2000, I was lucky to be added to the list of kids who went to Italy, back then I was only eight years old and everything happening to me seemed like a dream or a fairy-tale.**

Uladzimir's stays in Tuscany dramatically changed his trajectory. He eventually managed to relocate to Minsk where he graduated from a polytechnical university. Many orphaned children from his internat moved to Italy upon reaching adulthood. Since international adoption has been virtually banned in Belarus since the early 2000s,[6] these programs were the only way to reunite with host families who cared for them. Some even chose to Italianize their names, eager to turn the page on their previous traumatic lives.

Darya, now a translator for an international firm, reflects on an "alternative" scenario:

> **I often think about the 'whats' and 'whys' of my life. If I had stayed and never seen the world outside? School, university, two years of obligatory state service, a salary hardly enough to buy food and, if lucky, a pair of tights. A husband (probably drunk), kids, a rented apartment. A typical life many my age have – some better, some worse. Many are already divorced, and if single, stigmatized as spinsters.**

## Freedom and the invisible infrastructure of change

The memories shared by Chernobyl Children programs participants are strikingly similar: the fear of the unfamiliar, strange new food, the shock of well-stocked shops, the first time swimming in the sea, and the discovery of new languages. Now, as adults, they ask: *Why were our lives so different? Why were we so "unfree"?*

Katya, now an office worker in Hrodna, recalls:

> **Antonio and Rosaria, my hosts, didn't let their age stop them from being 'crazy.' We pushed each other in shopping carts around the mall, went to late-night discos, and danced in giant bunny costumes. In Belarus, people of that age just stay home and watch TV or go to doctors. Living with this family showed me that Italians are much more relaxed than we are; they don't worry about what others would say about them. In Italy, I felt so free.**

**"THE POVERTY AND STAGNATION OF THE HOMETOWNS OF CHORNOBYL CHILDREN WERE NOT INEVITABLE 'NATURAL LAWS,' BUT RATHER PRODUCTS OF A SPECIFIC SOCIO-POLITICAL ENVIRONMENT."**

These and other stories I witnessed and collected while volunteering for NGOs show that, even without it being a conscious goal, Chornobyl Children programs turned into something more than a temporary escape from post-Soviet economic and emotional austerity. They became a form of informal diplomacy – a window of opportunity to learn both about "a bigger" world and about themselves. It would not be an exaggeration to say that many children found role models in the people who hosted them. Through the comparative lens present in the accounts similar to those of Darya's and Katya's, critical evaluation of one's own realities was stimulated.

"**IF YOU HAVE** a goal and can pull yourself together, everything is possible," summarizes Aliaksandr. Now 40 years old, I first knew him as a boy from a traumatic home defined by violence and heavy alcohol abuse. Surrounded by the trust of his host family, he grew into a self-sufficient man who now drives to Minsk

One of the teenage girls from Belarus during her summer visit to Italy as a part of the humanitarian programs, 2010s.

PHOTO: OLGA BUBICH

in a white suit for business. Stories like his show that the legacy of learnt helplessness and perception of life as "survival mode existence" which is often inherited together with other attitudes from previous Soviet generations, can be questioned and altered. The poverty and stagnation of the hometowns of the children were not inevitable "natural laws," but rather products of a specific socio-political environment. The cycle of rural poverty could be broken as a result of conscious efforts invested into education, individual agency, and community support.

## Conclusion

Ultimately, the international Chornobyl Children programs represent one of the largest unplanned social experiments in modern history. They proved that while a state can control its borders and its narrative, it cannot easily erase the memory of a "bigger world" once a child has experienced it. For 7% of the population who crossed physical borders and questioned internal frontiers, mental, emotional, and psychological were also crossed.

Even as these programs remain on hold, the transformed mindsets of a half-million Belarusian adults form a resilient counter-narrative based on inner freedom, empathy, and solidarity they encountered in strangers as children. These foreigners gradually became family. Ultimately, my hope for this new generation is that, in order to cherish such values, they won't have to go through another radioactive catastrophe.

**Olga Bubich** is a Belarusian Freelance Journalist, Photographer and Memory Researcher, temporary based in Berlin.

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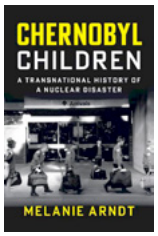
review

# The Chernobyl Children.

## A generation growing up with radiological contaminations

**Chernobyl Children: A Transnational History of a Nuclear Disaster**

Melanie Arndt, transl. Alastair Matthews (Cambridge University Press, 2025), 368 pages.




On April 26, 1986, children across the Western Soviet Union woke up to a normal late winter Wednesday. As they headed to school, or helped their parents, or tended to animals, radioactive particles were falling out of the sky and settling onto the trees and shrubs, and into the soil. Following the early morning explosions in reactor number four at the Chernobyl Nuclear Power Plant on the border of the Ukrainian and Belarusian Soviet Republics, a fire burned for several weeks, streaming a river of particles into the sky to spread downwind and contaminate children and families and pastures. At first no one knew a thing. The events of that morning, and the journey that those radioactive particles began during the disaster would shape the lives of those children in profound and complex ways.

For historian Melanie Arndt the children of Chernobyl, defined in multiple ways, serve as guides to the unsteady history that has unfolded since that day: from embodying the ideology and then collapse of the former Soviet Union, the emergence of a post-bipolar transnational order, and ultimately the solitude with which each of us has entered the Anthropocene.

**ARNDT'S DEEPLY RESEARCHED** and profoundly compassionate 2020 study of the "Chernobyl children" has been translated from its original German into English by Alastair Matthews. The book is an essential guide to how nuclear crises cannot be contained by the timeframe of their initial disasters, but slowly morph into international, transnational, and deep-time ecological continua of ongoing disaster. While such a study could become bogged down by this overarching narrative, Arndt's work achieves a powerful humanity by remaining close to the people who lived this history as she slowly expands her scope.

From the start there were shifting definitions foisted on the children by various state and institutional interlocutors. Arndt describes the "uncertainties surrounding what is meant by the terms 'Chernobyl child' and 'affected'" (14) and thus the uncertainties about who was included, and what being affected might mean for subsequent health outcomes. Against this managerial framework she engages us with many of the harms experienced by the children, what their resilience shows us, and their ultimate journey from signifiers of pure Soviet children to children of a wounded planet.

The "First Chernobyl Children" were the roughly 17,000 child residents of Prypiat, the energy worker town adjacent to the Chernobyl Nuclear Power Plant, who were evacuated two days after the explosions. Of Prypiat, Arndt writes, the:

> **[...] inhabitants had an average age of twenty-six, and there were numerous facilities for children and young people, including thirty-five playgrounds, fifteen kindergartens, five middle schools, one vocational school and one art school. (89)**

It was a young city, but it was mere kilometers away from the fatally wounded reactor that was belching fallout over the city and region even as children were allowed to play outside for several days.

In the following weeks and months, hundreds of villages would be evacuated, and it would become clear that tens of thousands of children, at a minimum, had been exposed to worrying levels or radiation, and that these levels extended far outside of the immediate zone of the disaster. Large populations of children were now being restricted from playing outside or in the woods. During the early months of the disaster, when the scale of the contamination was unclear, supporting the children became a means of enacting and performing state care by Soviet officials.

As decisions were slowly taken at the republic or oblast levels to evacuate children, toddlers and babies, tens of thousands were evacuated in the late spring and summer of 1986 from both the Belarus and Ukrainian Republics, many placed in holiday facilities or pioneer camps. Arndt tells us:

> **These stays were primarily paid for by enterprises and trade union organizations, which also operated many of the facilities. In addition, a number of ministries, including the Ministry of Health and Education, as well as the Komsomol and various agencies, not only allowed Chernobyl children to stay at facilities they ran but also footed the bill. (99)**

However, she notes, not all intended to join the programs were able to find slots, allowing for the corruptions of the old system to steer and taint many efforts.

As the Soviet Union declined in the years immediately after Chernobyl, funding and infrastructure to continue the programs, even at the republic and oblast levels faltered. Some of the groups supporting various cohorts of the children began to reach out to supportive socialist and communist countries to help fund or receive and host various groups of the children. Cuba, with its strong national emphasis on healthcare, began bringing Chernobyl children to the island nation for medical care in 1990, continuing until 2011:


Children gather for a parade celebrating the success of the Chernobyl power plant in April 1986, a few weeks before the accident. Plant director Viktor Brukhanov (in hat and tie) and the plant's Party secretary Sergey Parashin (in glasses) are visible on the far right. At the time, children made up more than a third of Prypiat's population.

PHOTO: PETR VYHOVSKY/PRIPYAT-CITY.RU

> **[…] the legacy of the Cuban efforts to support the Chernobyl children can still be felt in Ukraine – and not only there – today. (140)**

At about this time, philanthropic groups in the United States and Europe began to fund numerous Chernobyl children's charities, and to welcome children for visits and medical treatments in Western countries. Arndt calls this period one in which the "children" went from being "Soviet Chernobyl Children" to "Children of the Whole Planet," seeing the participants becoming poster children for various causes or issues each charitable group was advancing. In this role, the children were repositioned as innocent victims of the brutalities of modern politics and technology. They were wounded innocents standing as sentinels, warning the people of the world about the risks and dangers of the late Cold War, and post-Cold War worlds. Many of the support groups sought increased awareness of the plight of the Chernobyl children in the press, and public awareness of the Chernobyl children as a group of innocents rose worldwide.

**PART OF WHAT** was being advanced was notions of the trans-nationality with which the children could be cast, not solely as victims of inferior Soviet technology, but human recklessness and lack of care for the most vulnerable among us. Rather than individuals, they were placeholders for emerging Western concerns about collapsing ecological wellness, or extensions of religious service work. Witnessing the health impact of the radiation on the children, and the bright resilience with which they entered the future from their dystopian origin story was imagined as compelling concerned citizens to think beyond the bipolar death struggle of the Cold War. The children stood as refugees of that bipolar struggle, and as harbingers of the world emerging in its wake.

Arndt presents a solid institutional history of these various groups, many of which suffered through funding, embezzlement, and mismanagement scandals, detailing how the concerns of the "children" were often left behind as organizations slowly disbanded.

> **The opening and subsequent collapse of the Soviet Union also released an unprecedented wave of humanitarian activism in civil society in the West. The Chernobyl children presented countless individuals and initiatives in the West with new ways to get involved, both at home and in the uncharted territory of their former enemies. (221)**

She describes the support movements in multiple host countries, for example that of Ireland, and of charitable efforts such as that of the YMCA in Michigan. Links between various of the participants, and residents of host countries, or of activists focused on nuclear industry sites, for example Nadja Neal Hinson who's activism around the contaminations of the Hanford plutonium production site in Washington State led her to work on behalf of specific groups of the children and to speak out about how their plight is linked to the harms experienced by the Hanford downwinders (184–192), dot this section.

**WE SEE THE INITIAL** period of high hopes and cooperation across various boundaries give way to the politics unfolding in the wake of the collapse of the Soviet Union, and specifically about how the autocratic and insular turn of Belarusian leader Lukashenka cut off Belarusian children from international cooperation. While detailing the complex web of national, international, religious, and philanthropic attempts at intervention, Arndt demonstrates that children were the vector that made this event transnational, but that in the end, while many did receive care and aid, they were also placeholders for players with larger concerns.

*Chernobyl children* is a solid history of the organizations that played key roles in these efforts as they unfolded, and of the specific people who participated as children and what their experiences were like, but the real power of the book comes as Arndt contemplates the larger implications of these histories. Ultimately, we are confronted with the unwillingness of governments to address the long-term consequences of radiological contaminations, and

## Continued.
# The Chernobyl Children

the inadequacy of these aid or philanthropic organizations to grapple with the legacies of nuclear disasters.

Arndt demonstrates how the universal innocence of children undergirded the defining and success of children as communicators of harm and as coal mine canaries of nuclear risk. Regardless of what you think about politics, about the bipolar landscape of the Cold War world, children occupied a space above these concerns. Unable to have made choices that led to the consequences of their illnesses, foregrounding children was an effective strategy by many to universalize various issues.

**RECENT CHERNOBYL** histories, often seeking to achieve a cinematic quality in the telling, obsess like nativity stories around the moment of creation (disaster) rooting the books to the years of the physically destructive events, giving barely a nod towards the Red Forest and the deep consequences unfolding less visually. Chernobyl children give us characters who inhabit this part of the story: bit players in the initial events, victims of a specific moment in time and technology, perhaps among the first people living in a world slowly coming into view: "They embody what it means to be at home on a damaged planet," reveals Arndt (285).

Nuclearity, according to Gabrielle Hecht, in part raises mundane things out of time, and so the Chernobyl children occupied a liminal place in history and technology once they were tainted by the radiation spewing from reactor no. 4.[1] No longer optimistic Soviet children creating a socialist future, no longer transnational recipients of a sort of postwar charity, now they inhabited a world, and even bodies, marked by uncertainty.

Today the "children" are adults, but most of the fallout particles distributed in 1986, are now deeply embedded into the ecosystems of Central Europe and just starting their lifecycles. It is the very nature of radionuclides, which embed into the ecosystem once deposited, and then transport as does any chemical within that ecosystem: transporting spatially, via water, biota and wind, and transporting deeply into time. Many will remain active, radiating energy as the particle decays, for hundreds, thousands, or even billions of years, meaning that most of those who might experience harm

Evacuation of children from Prypiat city in May, 1986.

SOURCE: CHERNOBYL.COM.UA

from the Chernobyl distribution may not yet be born. This is the deep-time nature of the threat, putting the Chernobyl children at the front of what may be a long line of those who experience radiogenic illness in its deep wake.

Still, Arndt reminds us that:

> **Those who have to live with Chernobyl on a daily basis for the rest of their lives, with the vague sense of uncertainty and the existential fear of illness and pain that this brings, have often been rendered invisible, left behind after the initial headlines fade. Only recognizing the importance of the long view – the seemingly unspectacular personal trajectories and intimate relationships between the body, health and the environment – can we start to understand what living on a damaged planet entails. (11)**

In writing about *Slow violence* (2013), Rob Nixon warns us that environmental violence often occurs over years and decades and is difficult to understand as violence.[2] Arndt invites us to envision big history, to slow down and see the forest; to imagine a timeframe that leaves nation states, and certainly political or economic systems of social organization, receding far away on the horizon of the past, as we join the Chernobyl children in facing and determining our future.

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## references

1 Gabrielle Hecht, *Being nuclear: Africans and the global uranium trade* (The MIT Press, 2012), 14.

2 Rob Nixon, *Slow violence and the environmentalism of the poor* (Harvard University Press, 2011), 2–3.