The Chernobyl Herbarium

Fragments of an Exploded Consciousness

Second Edition

Michael Marder
with artworks by *Anaïs Tondeur*

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Critical Climate Change

Series Editors: Tom Cohen and Claire Colebrook

The era of climate change involves the mutation of systems beyond 20th century anthropomorphic models and has stood, until recently, outside representation or address. Understood in a broad and critical sense, climate change concerns material agencies that impact on biomass and energy, erased borders and microbial invention, geological and nanographic time, and extinction events. The possibility of extinction has always been a latent figure in textual production and archives; but the current sense of depletion, decay, mutation and exhaustion calls for new modes of address, new styles of publishing and authoring, and new formats and speeds of distribution. As the pressures and re-alignments of this re-arrangement occur, so must the critical languages and conceptual templates, political premises and definitions of 'life.' There is a particular need to publish in timely fashion experimental monographs that redefine the boundaries of disciplinary fields, rhetorical invasions, the interface of conceptual and scientific languages, and geomorphic and geopolitical interventions. Critical Climate Change is oriented, in this general manner, toward the epistemo-political mutations that correspond to the temporalities of terrestrial mutation.

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Эта книга посвящается земле, животным, воде, людям, воздуху и растениям, пострадавшим от Чернобыльской катастрофы

Ця книга присвячується землі, тваринам, воді, людям, повітрю і рослинам, постраждалим від Чорнобильської катастрофи

Гэтая кніга прысвячаецца зямлі, жывёлам, вадзе, людзям, паветры і раслінам, якія пацярпелі ад Чарнобыльскай катастрофы

Chernobyl exploded my brain. I started thinking.

Oleg Vorobey, liquidator; quoted in Svetlana Alexievich, *Voices from Chernobyl*

And that was why, he'd say, stroking his black hair as if stroking the soft, hot fur of a kitten, that was why his life amounted to a pile of shards: some shiny, others clouded, some cheerful, others like a "piece of a wasted hour," meaningless, some red and full, others white, but already shattered.

Clarice Lispector, "Interrupted Story"

Keep my shadow. I cannot explain. Sorry.
It needs to be done now. Keep my shadow. Keep it.

Joseph Brodsky, "Letters to a Wall"

Preface to the New Edition

The growth of *The Chernobyl Herbarium* has been rather uneven, albeit still organic. The first series of thirty rayograms, created by Anaïs Tondeur, and textual fragments, written by Michael Marder, saw the light of day in 2016. While the works of art had been in the making since 2011, most of the texts included in the first edition of the book were written throughout 2015. Since then, every year on or around April 26 (the grim anniversary of the nuclear disaster) Anaïs and Michael have created and occasionally presented a fresh image and fragment, often marked by the stories and acute concerns of the preceding year. Thus, the collaborative project has been developing further, a living herbarium of thoughts and images, plants and events, growing on an annual basis.

Within this apparently regular emergence of new contributions, the year 2022 marks a breaking point. With the start of Russia's full-scale invasion of Ukraine on February 24, another catastrophe has been unleashed on Chernobyl—one of the first places to be occupied by the Russian army—and the rest of the country. Our philosophical and artistic contributions to *The Chernobyl Herbarium* from that year signal the momentousness of those events and a certain discontinuity: while, in the absence of plant specimens, the 2022 rayogram has been made with the soil from Chernobyl, the text "Trenches in Chernobyl" is a longer essay, indeed an attempt to tie together in a single historico-conceptual knot the different types of madness that have converged on this place, from the quest for unlimited energy to the economic exploitation of its resources after the nuclear disaster and the endeavor to occupy it militarily, digging trenches in soil laced with radioactive isotopes.

The combination of rhythmic and sporadic patterns in the making of *The Chernobyl Herbarium* is far from accidental. The half-life of some radioactive isotopes released into the environment is quite short, barely exceeding the timespan of a human generation, whereas others are seemingly unchangeable and utterly stable, their half-lives reaching tens of thousands, if not millions of years. In these multiple temporalities of radioactivity, something happens without giving any sensory evidence of the happening: molecular mutations, affecting all organisms, are afoot. The effects of radioactivity are themselves cumulative and erratic, determinate and unpredictable. It is only fitting that this work has kept pace with the divergent temporalities of the fallout.

As the fortieth anniversary of the Chernobyl disaster comes and goes, the scars and open wounds of the place and everything its name connotes are multiplying. Year after year, in the company of plants, mushrooms, and soil, as well as each other's practices, we take stock of these now hypertrophic scars and festering wounds, not only to examine them but also to seek cures, mourning rituals, and labyrinthine paths forward. The most recent roadmap is laid out here for the readers to peruse. But there will be more to come. What has transpired, what continues to happen, and what erupts with renewed force in Chernobyl is not going away. And neither are we. For the time being.

Michael Marder and *Anaïs Tondeur*
March 2026

Preface

We entrust readers with thirty fragments of reflections, meditations, recollections, and images—one for each year that has passed since the explosion that rocked and destroyed a part of the Chernobyl nuclear power station in April 1986. The aesthetic visions, thoughts, and experiences that have made their way into this book hover in a grey region between the singular and self-enclosed, on the one hand, and the generally applicable and universal, on the other. They are the splinters of what, inspired by Svetlana Alexievich's *Voices from Chernobyl*, we call *an exploded consciousness*. As the author says about the not-so-evident effects of Chernobyl in an interview with herself, ventriloquizing in the same breath the testimony of Oleg Vorobey, a "liquidator" of the meltdown's consequences: "It was a catastrophe of consciousness. The world of our conceptions and values has exploded."[1] Sure: it signaled the demise of the collective Soviet subject, which coincided with and accelerated the collapse of the Soviet Union. More broadly construed, it was also a trauma of European and planetary proportions that weakened the already waning faith in technological progress and the illusion of security cherished within the borders of affluent nation-states.

What of this event remains today, in 2016? Both too much and too little.

Too much, because thirty years is an insignificant stretch of time, a blip in a chronology that will take centuries for the affected soil and natural environment to be decontaminated. And because the survivors and their children continue developing health problems and dying due to external and internal (diet-related) radiation exposure.

Too little, because the trauma of Chernobyl has not been worked through in the absence of a consciousness appropriate to the task of representing it. Nuclear power production in Europe and around the world has not been halted, and some even dare to claim that it is safer and more environmentally sound than that obtained by burning fossil fuels. A fundamental rethinking of the meaning of energy and its procurement is yet to take place against the dual backdrop of Chernobyl (and now Fukushima) and human-induced climate change.

Our wager in this small book is to contribute our humble share to a collaborative grappling with the event of Chernobyl. Unthinkable and unrepresentable as it is, we insist on the need to reflect upon, signify, and symbolize it, taking stock of the consciousness it fragmented and, perhaps, cultivating another, more environmentally attuned way of living.

We are also keenly aware that we are endeavoring to think the unthinkable and represent the unrepresentable. Hence the paths we have chosen: in lieu of dispassionate argumentation, you will find here meditations on personal experiences, aesthetic objects, and political processes; in lieu of photographs or paintings, you will view photograms, created through the direct imprints of radioactive herbarium specimens, grown in the soil of "the exclusion zone" by Martin Hajduch of the Institute of Plant Genetics and Biotechnology at the Slovak Academy of Sciences and arranged on photosensitive paper. As always, plants will be our guides, reconnecting us with the (hopelessly contaminated) soil, illuminating the meaning of the remains, and helping us to envision a kind of testimony that respects absolute silence.

Michael Marder (Vitoria-Gasteiz, Spain) &
Anaïs Tondeur (Montreuil, France) – January 2016

Fragment 1 **Train station**

It's April 26, 1986. I am on a sleeper train, traveling from Moscow to the town of Anapa, located in Southern Russia, on the shore of the Black Sea. I have been aboard one of the cars for nearly two days and the provisions we had brought from home are running out. The train is stopped in Rostov-on-Don, a thousand and two hundred kilometers away from the city where I live. From my upper-level bed, I look out the window and a lively scene is unfolding before my eyes: the hustle and bustle typical of a central station; older ladies selling hot meat- and potato-pies, fried chicken, and pickles; people rushing in and out of the train. No one has any idea about what is going on eight hundred kilometers northwest. That is the true meaning of an event: it happens without us awakening to it, that is, it happens as though it did not happen, confined to the thing itself, in the thing itself, which nonetheless includes us, enfolds us, gathers us into its assembly, asking us not whether we wish to be included. Radioactive fallout clouds from Chernobyl and the official information about the incident, the one a distorted mirror reflection of the other, have not reached us yet, and they will not do so for some days. But the event is afoot. It will catch up with us, before we have a chance to catch up with it, if at all. In the meantime, life will continue to wind through its "normal" course. I am espying its ebbs and flows on the Rostov-on-Don platform, from inside the train compartment, in which I am traveling.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 2 **Explosions of light**

Some images in Anaïs Tondeur's Chernobyl Herbarium are the explosions of light. Others are softly glowing, breathing with fragility and precariousness. The explosive imprints are, in effect, reminiscent of volcanic eruptions at night, hot lava spewing from the depths of the earth. Even assuming it is not an actual trace of radiation (which the specimens in the herbarium have received from the isotopes of cesium-137 and strontium-90 mixed with the soil of the exclusion zone) that comes through and shines forth from the plants' contact with photosensitive paper, the resulting works of art cannot help but send us back to a space and time outside the frame, wherein this *Linum usitatissimum* germinated, grew, and blossomed.

The images are the visible records of an invisible calamity, tracked across the threshold of sight by the power of art. The literal translation from Greek of the technique used here, *photogram*, is a *line of light*. Not a *photograph*, the *writing of light*, but a photogram, its line captured on photosensitive paper, upon which the object is placed. In writing, a line is already too idealized, too heavy with meaning, overburdened with sense, nearly immaterial. In a photograph, light's imprint is further removed from the being that emitted or reflected it than in a photogram, where, absent the camera, the line can be itself, can trace itself outside the system of coded significations and machinic mediations. The *grammé* of a photogram imposes itself from up close. Touching... It endures: etched, engraved, engrained, the energy it transported both reflected (or refracted) *and* absorbed. Much like radiation, indifferently imbibed by whatever and whoever is on its path—the soil, buildings, plants, animals, humans—yet uncontainable in any single entity whose time-frame it invariably overflows. Through her aesthetic practice, Tondeur detonates, releases the explosions of light trapped in plants, its lines dispersed, crisscrossing photograms every which way. She liberates luminescent traces without violence, avoiding the repetition of the first, invisible event of Chernobyl and, at the same time, capturing something of it. Release and preservation; preservation and release: by the grace of art.

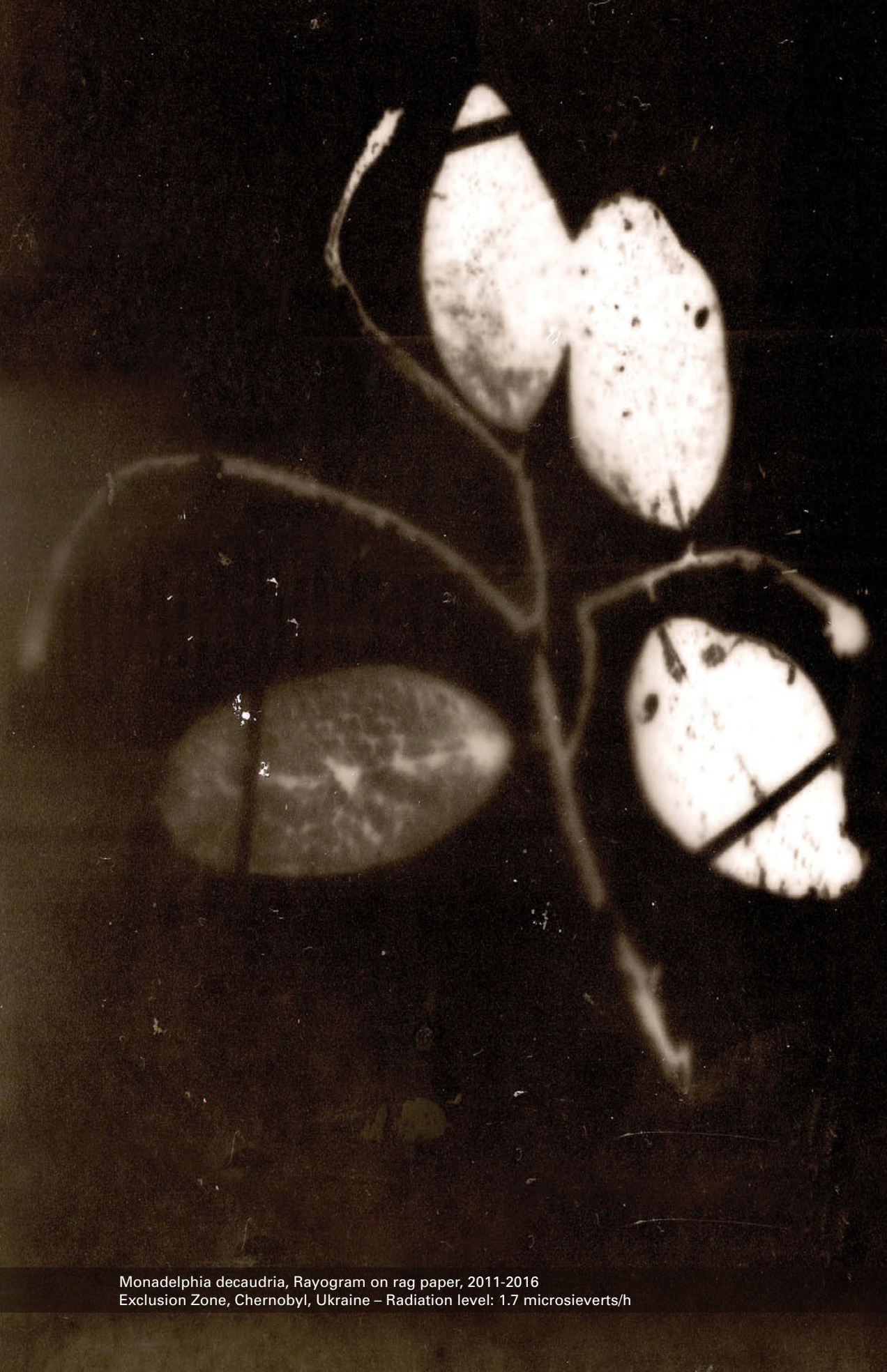
Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 3 **We flee toward the thing we try to escape**

Why was I heading south in late April 1986 for the first time in what will have become my strange annual pilgrimage, in the company of a parent, over the subsequent three years? This trip, like the ones to come (again to Anapa in 1987 and, later, still further away, to the city of Sukhumi in the Abkhazia region of the former Soviet Republic of Georgia) was an escape, mandated by doctors and sponsored by the healthcare system of the USSR. As a result of severe seasonal allergies to birch, oak, and other tree pollen, which left me breathless, the medical decision was to send me to "another climactic zone," where none of the vegetation prevalent in Central European Russia flourished.

I thus had to spend a part of the spring among palm trees and cypresses, transplanted. The reason for this predicament, shared to a lesser degree with the majority of my peers, was clear: on the outskirts of Moscow, my apartment block was situated between a massive forest and a large, air-polluting factory. As I recount in *Through Vegetal Being*: "depending on the direction of the wind, we sensed either the smell of fumes that emanated from the industrial monstrosity or fresh air that drifted from the woods."[2] In a roundabout way, I was cut off from the world of vegetation at the time of its renewal by the unchecked forces of industrialization and a dangerously naïve ideology of progress, as prevalent in the Soviet Union as it was in the West. And this means that my medically recommended escape had to do with the technological domination of the natural environment that made the world unbearable and ultimately unlivable.

But the impression that one can flee from the calamity that is our civilization is no less immature than the sunny ideology of progress itself. There are no escape valves. By train, I was speeding toward another, still greater catastrophe spawned by the same total system (I am not alluding to Soviet "totalitarianism" but to the pernicious ubiquity of an instrumental handling of nature that undercuts life and prevails both in capitalist and socialist economic systems). Breathing freely, no longer afflicted by allergy-induced asthma, I will spend the rest of April, May, and a part of June on the shores of the Black Sea, where, unbeknownst to me, I will be receiving dangerous amounts of radiation from Chernobyl's fallout. Jean Baudrillard dubs this *the logic of seduction*, of fleeing toward the thing we are trying to escape. The seduction of technology? Of being human? Or are these altogether interchangeable?



Monadelphia decaudria, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 4 **The extraordinary nature of the ordinary**

Usually, when philosophers and artists illuminate the extraordinary nature of ordinary phenomena, they do so by pointing out an unexpected conceptual or aesthetic angle on everyday, taken-for-granted things. For instance, they wrest objects from the familiar contexts of their routine use, as Duchamp did with the urinal titled *Fountain* in 1917, or they see portions of reality as examples of metaphysical ideas, as Hegel did in the nineteenth century when he interpreted even "ordinary actuality"—the air and the earth, the family and the state … —as the avatars of Spirit.

These are not the appropriate illustrations of the extraordinariness of the ordinary I have in mind. I am thinking, above all, of the false façade of calm and unremarkably habitual existence in the aftermath of the Chernobyl accident: in the immediate surroundings of the nuclear power station prior to mass evacuations; in Kiev and Minsk where May 1 demonstrations went ahead as scheduled; and in further removed fallout areas, such as Anapa, where, according to official figures, in early May 1986 radiation readings reached 60 mR/hr (milliRoentgens per hour),[3] a value some 300 times higher than the "normal" levels of 0.2 mR/hr. The invisibility of giant doses of radiation was doubled up, covered over, and magnified by the political obfuscation of the disaster, the full scope of which started to emerge only when abnormally elevated readings were detected in Sweden two days after the release of radioactive debris into the atmosphere. No earlier than on May 6 and 7 did the newspaper *Pravda* provide extensive reports on the accident.

Unperceivable and unannounced, the event of Chernobyl with its wide repercussions was, right after it happened, indistinguishable from the course of everyday life. The state of exception it provoked was not exceptional, from the standpoint of whoever lived through it. Everything was changed unnoticed and unnoted, at least initially. (The same actually applies to the collapse of the Soviet Union that swiftly followed that of Chernobyl.) The atmosphere, air, water, soil, plants, animals, people—all that seemed to be exactly the same as yesterday, in spite of being radically transformed. It is when things are in the clear, at their most obvious and mundane, that they are totally obscure, relegated to the dark by our own sense of obviousness and absolute clarity. The sole exciting thing for the six-year-old that I was consisted in being, for the first time in his life, by the seaside, in what appeared to be a warm paradise, with its pebble beaches and occasional evergreen vegetation.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 5 **Meaning's excess**

Before we consume, burn, decorate and pay tributes with, or contemplate them, plants irradiate a meaning of their own. Each branch, shoot, and leaf located in a particular portion of a geranium, or of any other plant, is the outcome of a lived vegetal interpretation of the environment: the direction and intensity of sunlight, the amount of moisture in the air, and so forth. Plants' living forms are *their* semantic structures. The human production of meaning is inevitably belated, supplementary, superadded to whatever we interpret, though, from our perspective, it stands out as the essential (in effect, the only) semantic construction.

The geranium, then, shines forth, gives itself to sight and to the other senses by unfurling its leaves and flowers in a uniquely vegetal mode of exposure intended to maximize the amount of sunlight it receives. In Tondeur's herbarium, it does not light up as explosively, shockingly, and unsustainably as *Linum usitatissumum*[4] but emanates a steady glow, similar to the continuous acts of meaning-making by living plants, the acts coextensive with their lives. For the plant, the ongoing monitoring of environmental conditions in the place of its growth is a run-of-the-mill operation; for us, who are accustomed to thinking of plants as passive beings devoid of consciousness or as persisting in a state of torpor at best, it is extraordinary.

There is also, in Tondeur's plants, an excess of meaning, untethered to cultural, scientific, or other human constructions and related, instead, to the history of their growth in radioactive soil. That is the additional shimmer behind the shining—visual and semantic—vegetal imprint. Together with radioactivity, the plant whose trace we are contemplating assimilated the imperceptible and the inconceivable that, at the edge of sense, jump at us from the photogram. Its excess of meaning is dense, impenetrable. In the thick of infinite openness and exposure.

Geranium chinum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 6 **Exposure**

For over six weeks, from the end of April until mid-June 1986 I was exposed to massive quantities of radiation in Anapa. Most of that time was spent outdoors. At the beach. In the city's parks or promenades. Until not so long ago I was not aware of this, whether due to having undergone the uncanny non-experience at a young age or due to mistakenly believing that the plumes of radioactive materials travelled exclusively north, through Belorussia and the Baltic countries to Sweden and Norway, blazing new European cartographies.

It turns out, in retrospect, that I had exposure in common with animals and other humans, as well as with plants and the soil that received huge amounts of radiation without anyone being aware of it. I was, together with others in Anapa and further northwest in Kiev and Minsk, plant-like, or, to resort to an animal-based metaphor, "a sitting duck." What did our exposure amount to? Did it prepare the grounds for a trans-human solidarity? Its common denominator was physicality itself, the brute fact of having a physical extension, open to everything, including radiation. This openness spelled out unfathomable vulnerability, the incapacity to defend oneself from a threat that was unknown and undetectable by the sensorium. One is ineluctably passive in the face of radio*activity*.

We were all plants then. Except that vegetation is probably better at spotting radiation because it relentlessly receives, identifies, and processes the sun's ultraviolet rays, i.e., electromagnetic radiation all but invisible to us. Could it be that plants were more proficient in monitoring for ionizing radiation, as well? Rooted in the ground, they are of course unable to escape the harmful effects of radioactivity, as the pine trees in the so-called "red forest" close to the exclusion zone have attested. Yet, they are also more adaptable: soybeans experimentally grown in Chernobyl's radioactive environment have displayed drastic changes in their protein makeup, enabling them to improve their resistance to heavy metals and to modify their carbon metabolism.[5] Their exposure *to* the world is of one piece with learning *from* the world and giving plenty of things *back to* it. Only our, human, exposure betokens pure vulnerability, passivity, helplessness.

What about other kinds of exposure—for instance, that of photographs to light or of photograms to baths of chemicals that add unique visual effects? How many layers or levels of exposure are there before us? Who is the exposing and who or what the exposed? (I note *en passant* that the proliferation of words with the prefix *ex-* in these fragments—*ex*plosion, *ex*cess, *ex*posure, *ex*traordinary—is not accidental. I have, in fact, written an article about it.[6] Meaning *out* in Latin, this prefix conveys the movement of growth, pressing out, toward sunlight or deeper into the soil. In growing, the plant comes out of itself, is outside or beside itself twice over, already as a germinating seed. Vegetal life is not merely exposed; it *is* exposure, exteriority, outwardness. Only in limit circumstances can we *ex*perience on our very skin what vegetal being-exposed (or, generally speaking, being-*ex-*) implies. And, in still more rare situations, we realize in an *après coup* that we have been exposed without being cognizant of it at the time. We, the others of plants. But also, we, the other plants …)

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 7 **Silent witnessing**

It is incredibly difficult to talk and write about Chernobyl. No serious book on the subject has been able to dodge the task of thinking about the conditions of possibility for thinking in proximity to this theme or this scene. Still before commencing, a work on Chernobyl must first decide how to broach a theme that incessantly reverts back into the unthematizable.

As we have seen, the very structure of witnessing breaks down there where the event, with all its extraordinary, groundbreaking, and death-bearing potential, practically merges with everyday life thanks to its imperceptibility. What is there to say about exposure to radiation that cannot be seen nor smelled nor heard nor touched nor tasted? Those of us who have been in its eerie neighborhood have resembled objects, onto which certain effects have been inflicted, as opposed to subjects in control and aware of what is going on.

Bypassing our consciousness, material witnessing has been incorporated into us, becoming a part of the flesh: the radiation accumulated in the thyroid gland, the elements of strontium that, imitating calcium, have bound themselves to the bones… Consciousness has been exploded not so much as an aftereffect of a violent shock but thanks to becoming superfluous. What is there to say, save for certifying the death of consciousness, which has outlived its usefulness when it comes to helping orient us in our environs in the wake of an unwieldy, unmanageable technology it, itself, had brought into being? All that remains is to perform an autopsy on it and to write its obituary, while envisioning, in the best of cases, the birth of another consciousness…

Plants, too, live through occurrences without formulating them in speech. Their articulations are wholly material; the patterns observable on their extensions, from tree rings to the position of branches, are bodily witnesses to a history of growth and to its milieu. True: it is difficult to talk about Chernobyl. Then why not delegate testimonial acts to living beings that do not speak, at least not in human voices and languages, except if they are characters in sundry myths and fairytales? Why not assign such acts to plants? In some respects, Tondeur does just that. Were we to follow her artistic lead in thought, we would allow exposure to be translated into expression, and vulnerability—into a way of bearing witness.

Take a careful look at the pistils of this *Linum usitatissumum*. Aren't they both the radars, receiving stimulation from every side, receptive to pollen's secrets, and the loudspeakers, re-broadcasting wordless messages? Through the unique medium of photograms, Tondeur lets plants speak by spatially expressing themselves and the earth contaminated with radionuclides. Lines of light do not illuminate—from the external, neutral, and disengaged position of the third—the obscure traces of what happened. They bring out the testimony of the plant and of the soil wherein it grew.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 8 **Energy nightmares**

Vegetal life is an excellent counterpoint to our default manner of producing energy, which culminated in Chernobyl. Plants process sunlight on their extended surfaces, the leaves. Their energy is, as I have noted in my previous work, essentially superficial, beholden to exteriority, and (with a few exceptions of the carnivorous varieties, incapable of photosynthesis) not destructive toward other entities. Plants receive everything they need to thrive from the elements: moisture and mineral nutrients in the soil and sunlight above the ground.

Animals and humans, on the other hand, procure energy otherwise, beginning with a distinct way of eating. They bite into whatever will nourish them, destroy its integrity, dig into the "energy reserve" into which the eaten is converted wholesale, and incorporate the nutrients and calories it contained into their own bodies. In obtaining energy, we break up and burn, reduce to basic components and extract, their valuable core from the objects of our needs and desires.

Remote as it may seem from these physiological processes, the quest for nuclear energy exacerbates their working principles, breaking down the seemingly indivisible (namely, the atom), and so peering into the deepest depths, the abyss of potency and potentiality. While conventional methods of "producing" energy had destroyed the formed matter of things, nuclear power devastated their very essence, the material principles that made them what they were.

Sublimated, and utterly sublime, digestion mutates. As the breakdown of matter is perfected, becoming more thorough and annihilating matter's very materiality, its byproducts turn virtually indigestible. Depleted radioactive materials are the new excrements of energy-hungry humankind, contaminating the environment for the time to come.

A recurrent dream: I float at sea, carried by the waves to another shore, that other shore where, towering high above, an exploded nuclear reactor is burning unabated, spewing raspberry-colored smoke into the air. Switching into nocturnal gear, where the past is distorted in keeping with fantasies and wish fulfillments, my psychic life embarks on a reverse journey to the source of radiation that had reached me in Anapa. And it amends geography along the way. Of course, the town of Pripyat', which serviced the Chernobyl nuclear power station, was situated on the banks of a river bearing the same name, not on the Black Sea. But dreams follow their own logic, simplifying or making reality more complex, as the case may be.

Building on the experience or the non-experience of Chernobyl, I'd like to propose that we not only cease using nuclear energy but also relinquish the paradigm that potentiated its use. I am referring here to the extractive-destructive attitude to the world, cast in terms of an energy container, its depths waiting to be breached, penetrated, and appropriated. The principal motivation behind my book, *Energy Dreams*, is to learn from plants how to live energetically having cured ourselves of our obsession with depth, to be devastated in the course of obtaining energy, and how to refrain from violence against others, human or not. At the same time, I am painfully aware of the fact that energy dreams have tended to morph into energy nightmares. For instance (and this is more than an example), the promise of cheap, efficient and "non-polluting" technologies that would offer abundant supplies of electricity has been associated with nuclear power. The fantasy of *perpetuum mobile*, presumably the antithesis of vegetal immobility, has mobilized existence as a whole, inching close to its annihilation.

We live in the shadow of an ever-present threat that our insatiable desire for energy would consume the entire world, without sparing us either. This threat is not an amorphous prospect. It has attained reality in April 1986, as well as, on scales of varying intensity, before and after that (Three Mile Island, Fukushima …). Still, the addiction to what is economically convenient is stronger than fear. Economy trumps ecology, albeit at the price of the environmental dwelling, the *oikos*, which we all inhabit and which inhabits us, which constitutes our very bodies. Heedless to the alarms that have been ringing for some time now, we have not yet woken up from our energy nightmares. If anything, they intensify, delineating the horizons of our present and, likely, of our future.

Phaseoleae, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 9 **Fallen trees**

Visitors to the "red forest" near Chernobyl's ground zero observe the following scene. Here, pine trees turned reddish and perished shortly after the accident, their fallen trunks accumulating on the ground over the last thirty years. They are not decaying as they should,[7] nor being digested into the earth nor transformed into compost. The timescale of finite life has been disrupted and the same fate has befallen death as well, which is to say, the material afterlife of rotting and decay.

The fallen trees of the exclusion zone carry on the work of witnessing commenced by the living plants. They testify, among other things, to the impact of exorbitant radiation doses and of the technology that made their release possible on life, whose very loss is monumentalized in its external appearances, such as tree trunks and dry leaves, preserved as though they only fell yesterday. With the processes of decomposition stopped or slowed down as a result of damage done to the microbes, fungi, and insects responsible for the recycling of organic matter, it is as if life itself is stopped forever, frozen *and* irretrievably lost, notwithstanding recent reports of flora and fauna regeneration in the region.

Animals and plants are returning to Chernobyl's exclusion zone because human beings are gone, not because the soil is more fertile. We could celebrate this turn of events, finding in it a kind of laboratory for a vibrant planet that would survive the human onslaught long after our species is extinct. Or, we could fight against the nihilistic indifference, with which dead trees have been conserved (almost fossilized), through a concerted effort of selecting, arranging, and displaying traces of the catastrophe for the past and for the future, as a commemoration and a warning.

Now, to select, arrange, and display is to create a herbarium. Besides the plants that have grown in radioactive soil, the shards of our own exploded consciousness are reassembled in it, albeit not glued together—neither mended nor healed. In the fallen leaves and trees of Chernobyl, we can discern fragments of ourselves, of our bodies and thoughts. Having initially grown as plants do, they have become something other than vegetation, namely the ruins of our civilization, like the sarcophagus encasing the reactor mangled by the accident and like our pre-Chernobyl systems of thought shattered by what happened there.

A herbarium of injured plants, damaged bodies, and traumatized minds germinates, in all its dry glory, from the same malignant source as the disaster, which has no power over it, however. Picking up and caring for the rests, be they the products of vegetal or human activity, we try to give them their due, to rescue them from the waves of oblivion, to transfigure the deadly radioactive exposure they have endured into an aesthetic exposure of viewership, so that they would meet an empathetic, concerned, engaged, non-indifferent glance. Lifting whatever or whoever has fallen, this sublime herbarium singles out, raises, and elevates it, him, or her, even though such elevation is not tantamount to a resurrection. The lives that had too close of a brush with radiation's deadly invisible force have been lost forever. But they need not die a second time, to boot. That is, finally, what the work of mourning ensures: counteracting the twin urge to monumentalize the lost object or to consign it to absolute forgetting. "Successful" mourning permits the mourned representation to decay as it should, making space for future existence.

Baeckea linifolia, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 10 **In Anapa**

The first thing I did, upon checking into a grey, hospital-like, government-run "sanatorium" (in Russian, this word does not designate a mental asylum but a place of rest and recovery for people afflicted by chronic illnesses), was rush to the beach so as to behold the vast expanse of water, extending as far as the eye could see. The experience was breathtaking.

From there, I walked with my father to a local bookstore, since I knew that the stash of books I had brought with me was bound to be depleted in the course of long reading sessions by the sea. I frequented the bookstore, within a ten-minute walking distance from our apartment in Moscow, almost daily. Luckily for me, it was located in the same building as the bakery, and I would make the inevitable detour to revisit books I had already leafed through and to look for fresh arrivals every time I was sent to buy bread. The Anapa store struck me with its paucity of choice, compared to the already limited selection I had been acquainted with in Moscow. Here, try as you would, you could find nothing other than the Soviet staples, like Nikolai Ostrovsky's *How Steel Was Tempered*, which was understandable given that even in the capital the classics of Russian literature, let alone books in translation, were "deficit items," available solely in exchange for coupons dispensed after you'd recycled tens of kilos of newspapers.

May 1 festivities were fast approaching and the city was ablaze with red flags and giant posters, proclaiming the virtues of the Communist path or consisting of the usual associations, such as "Peace, Labor, May." The main demonstration, similar to the selection of books, was much more modest than the manifestations I had participated in before. Exactly on that day, southeastern winds brought with them Chernobyl's radioactive fallout to Anapa. Needless to say, everything proceeded as scheduled; no changes to the program were made.

It was during these celebrations that an organizer of another festival caught up with me, asking if I was not, by any chance, a Georgian child from a Soviet republic situated about 200 kilometers south of Anapa. Undeterred by a negative response, she suggested that I would be a perfect fit for the role she envisioned. Dressed in a traditional costume, I would represent Georgia at a carnival of Soviet multiculturalism, slated to take place on my birthday, two days after the May 1 festivities. I agreed and was immediately issued an ankle long woolen Chokha (a typical outfit worn by men from the Caucasus Mountains), replete with the widest belt I'd ever seen, a fake sabre and an extra-warm headpiece. That is how I appeared and danced at the festival, when radiation levels in the atmosphere peaked, finding my outfit unbearably hot but probably receiving minimal radiation protection from it.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 11 **From shadows on a wall to imprints on a sheet**

At the very end of October 2015, Inês Cardoso, who curates contemporary art in London, drew my attention to the works of Anaïs Tondeur, gathered under the heading *At the Edge of the Visible*. Inês thought—and rightly so!—that I would be keenly interested in the plants that comprised Tondeur's photogrammic studies of specimens grown in Chernobyl's exclusion zone.

By pure chance, this indication came at a time when I was reading Alexievich's *Voices from Chernobyl*, recalling and reflecting upon my own eerie proximity to the abyss denoted by that name. The encounter with Tondeur's artworks felt like a piece of a puzzle that fell into its proper spot, extending a bridge between my theoretical concerns with plant life, with the philosophy behind energy production, and certain autobiographical preoccupations. Within a few days, Anaïs and I started planning the book you are reading at this very moment as an artistic-philosophical collaboration.

In our subsequent exchange, Anaïs intimated that, at a symbolic level, she resorted to the technique of photograms with the view to leading our imagination back to the shadows cast by people or objects on the walls of Hiroshima and Nagasaki after the atomic bombings of these Japanese cities in August 1945. That, to me, sounded like an evocative and powerful way of establishing interconnections between humans and plants, cementing the trans-species and trans-kingdoms solidarity of victims, and unearthing the co-imbrication of the "peaceful" and "military" uses of nuclear technologies. The radiation released from the two atomic bombs that had been dropped on Hiroshima and Nagasaki transformed city surfaces, if not the entire world, into so many screens, onto which living photograms were emblazoned.

The photosensitive paper that came into contact with plants from the exclusion zone recalled these urban imprints and the meltdown of Chernobyl's Reactor 4 forty-one years after the American nuclear bombing of Japan. Still, we cannot overlook a key difference between the shadows on the wall and the Chernobyl Herbarium. There is no aesthetics of war, suffering, and death—only their *post factum* aestheticization. The existence that has been fragmented and cut short can and does turn up in literary texts and works of art: say, in Pablo Picasso's *Guernica* or Maurice Blanchot's narrative "The Instant of My Death," discussed by Jacques Derrida.[8] Even so, the most horrifying and moving aesthetic productions are not war, suffering, and death *themselves* but reminiscences that, as I have written above, signify "release and preservation; preservation and release: by the grace of art."

Vegetal imprints on photosensitive surfaces do not repeat the violence of Hiroshima, Nagasaki, and Chernobyl. They resonate with mute suffering and give it a chance to speak, without resorting to voices and words (whispered or screamed out), without adding or subtracting images and representations, without as much as depicting violence *qua* violence, which was not sensed in the open, as an object of experience, by anyone who was not in the immediate vicinity of the exploded nuclear reactor. Amazingly, regardless of their multiple associations with the realized nuclear threat, Tondeur's photograms channel nothing but beauty. Analogous to the Buddhist meditation practice of Tonglen ("Giving and Receiving"), they breathe suffering into the aesthetic medium and exhale comfort, compassion, and peace.

And what of time's relentless passage? We would be lucky were we to linger on as shadows on a wall or imprints on a sheet after it's done with its work.

Malpighia spicata, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 12 **Risk**

We've heard the stories of first responders, also known as *the liquidators*, to the Chernobyl fallout—people who, unequipped with protective gear, combatted the fire that broke out after a series of blasts in Reactor 4 and those who, later on, participated in the decontamination effort, for instance, by removing layers of radioactive soil and burying it deeper in the earth. Their numbers reaching 200,000, the liquidators developed chronic illnesses and died as a consequence of radiation poisoning. Honored as heroes, often postmortem, many among them willingly risked their lives by acting for the sake of others and not caring about themselves. They behaved in accord with the official Soviet ideology of selflessness, altruism, and the value of the collective over the individual, the ideology they had internalized and avowed as their own.

On the face of it, the romanticizing of risk is diametrically opposed to the Western emphasis on safety, security, and risk-avoidance, but this opposition is largely mistaken. Lurking behind the discourses of personal, alimentary, and energy security is not the cancellation but a tacit displacement of risk, its global reallocation to those most vulnerable. Ulrich Beck hinted at this predicament in his groundbreaking studies, published precisely in the decade of the Chernobyl tragedy.[9]

Today, risk is a sort of negative ontological capital that expands alongside industrial or postindustrial (financial) capital and is passed on to the very populations that are dispossessed of material wealth and prosperity. As such, it is subject to calculation, assessment, and privatization, which was all the rage after the Fukushima meltdown, when health risks, the hazards pertaining to environmental "externalities," and the economic costs of tackling the consequences of nuclear contamination were transferred from TEPCO and the Japanese government to the citizens.[10]

The calculus of probabilities and risk management are the privilege of the few who feel safe at present and who wish to maintain the status quo, afraid that their safety would be compromised in the future. They are little consolation to the people, animals, plants, and ecosystems who or that find themselves on the losing side of the algorithms and the equations. More than that, with regard to nuclear accidents and climate change alike, risk management is futile because the environment, which could be made unlivable in an instant or over a more protracted period, is shared by all humans and by all non-human species. Confronted with these threats to the elemental commons, we are (or should be) communists, if only we think a little outside the frame of mindless, mechanical calculations and property considerations. Global "food and energy security," too, is a gateway to a more troubling insecurity, associated with eroding soils, increased CO2 emissions, and the loss of biodiversity. Such discourses ignore the risks faced by plants and animals, rivers, forests, and the earth, especially insofar as these exceed "our" environment and deserve moral consideration in and of themselves.

Thirty years subsequent to what happened in Chernobyl, the risks of using atomic energy are no longer a matter of the future; they are the already actualized threats that spill over into and overshadow the present. The greatest risk, not amenable to any calculative machinations, is carrying on as though the 1986 explosion did not rock the power station, built on the banks of Pripyat', along with our consciousness. As though the world and our picture of it were still intact. As though the self-regenerative capacities of the body and of the environment were endless. As though finitude were infinitely resilient, ready to be reborn from the ashes each time anew, like the Phoenix we mistake it for.

Byrsonima lucida, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 13 **What is a herbarium?**

Less than two years ago, I published a book, *The Philosopher's Plant: An Intellectual Herbarium*,[11] where I invited readers for a stroll through Western philosophy's gardens, fields, and forests. I sought help from vegetal metaphors and allegories, processes and phenomena, which I then associated with the intellectual achievements of twelve thinkers, from Greek Antiquity to our days. While Mathilde Roussel made fantastic drawings, imagining plant-human hybrids, I noted by way of introduction that a herbarium is far from "a monumental contribution" shedding light on "deep conceptual connections." It is traversed, rather, by a group of "family resemblances" among plants and/or among thinkers.[12] My aim was to undermine the smooth and translucent narrative of Western metaphysics, with its insistence on the unity and stability of thought, and to replay its history of aspirations to the immutable through a procession of inherently changeable beings, the metamorphosing plants.

Encountering Tondeur's Chernobyl series, I instantaneously got an inkling of what I had to accomplish. Having compiled a herbarium of philosophical systems, I can try to assemble a *hortus siccus* of shattered, shaken, damaged lives, vegetal and human, including my own. Like the plants it houses, a herbarium is essentially superficial, accentuating, for the most part, the shapes and colors of dry specimens, that is, surfaces refracting light. An avid botanist and collector of herbaria, Jean-Jacques Rousseau saw in the collections of conserved plants prescient indications regarding the simplicity and refreshing superficiality of vegetal life. So much so that he defined botany as the best science, most closely allied with nature and naturalness, against chemistry,[13] which dissolved the forms of things into compounds and molecules, eating into matter and probing depth at the price of appearance.

That said, Tondeur's Chernobyl Herbarium does not correspond to Rousseau's specifications. For one, it does not feature the plants themselves but their impressions on a photosensitive surface. For another, it is mediated by chemicals, in which the paper retaining their imprints is bathed. Mind you, these modifications are quite telling. They imply that there is no more untouched simplicity of nature, no more unspoiled beauty after Chernobyl, no safety valves or escape routes from civilization, least of all in our bodies or in the corporeality of plants.

We should not succumb to profound pessimism or nihilism, though. The Chernobyl Herbarium is still a surface-to-surface encounter of vegetation with photosensitive paper. And it still contains something of the curative force I have, a little hurriedly, identified as "the grace of art," the force Rousseau deemed to be "his unique *'pharmacie'*,"[14] into which he could tap through his study of botany and the creation of herbaria. This force is powerless to effect a change in reality, to penetrate its core and decontaminate the bodies of the earth, of animals, plants and humans laced with radioactive isotopes. But, precisely, its powerlessness and desistence from depth are its virtues. It strokes the surfaces of things—the superficies of the remains, including the fragments of the thing called *psyche*—consoling them, patting them, offering gentle contact, caress. It is possible to be touched without a modicum of sentimentality. When I chanced upon the photograms, I was touched in this very sense, attaining a different level of self-knowledge thanks to them. (A full stop and final period for now, because we are already sliding into the singular.)

Comandra umbellata santalaceae, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 14 **Radiation's countless afterlives**

The half-life of depleted uranium (U-238) is the same as the age of our planet: 4.5 billion years, a time span that, compared to the entire human history, is virtually infinite. Cesium-137 is more unassuming. It has a half-life of three decades, which means that by the thirtieth anniversary of "Chernobyl" (the name of the site as the metonymy for what happened there) only fifty percent of cesium-137 atoms that have been discharged into the environment will have been transformed into barium-137 with a half-life of about 2.5 minutes. A similar ratio is applicable to strontium-90, with a half-life of 28 years.

Radiation has multiple afterlives, conventionally measured by the period it takes for half the radioactive atoms to be transformed into more stable elements. The residual atoms will be equally divided between those that will require the same amount of time to undergo a transformation and those that will keep their radioactivity until the next cycle halves them. And so on… Because certain isotopes exhibit chemical similarities to the constituents of our bodies, they can be incorporated into us. Strontium-90, akin to calcium, becomes a part of the bone structure. It is taken up into our skeletons, our teeth… Subsequent to the start of worldwide nuclear weapons testing, this isotope is present in the dental makeup of anyone born after 1963. The peregrinations of radioactive materials continue in us, as us. Chernobyl's human survivors are the scraps of radiation's afterlife, which severely limits life expectancy as a consequence of external and, in many cases, ongoing internal exposures. Plants grown in contaminated soil are, likewise, a finite afterlife of radiation. Strontium-90 accumulates in vascular vegetal tissues, whereas cesium-137 is distributed throughout a plant, due to its similarity to potassium.[15]

But then there is art.

If the plants of Chernobyl are an afterlife of radiation, then Tondeur's photograms are the afterlife of that afterlife, a variation on the theme "the copy of a copy" that, since Plato, has determined the outlines of the aesthetic domain. The imprints portend survival, the afterglow of what gives itself to sight. They reflect the lived, and outlived, meaning. In contrast to the Platonic hierarchy, with the unproduced and originary Ideas at its apex followed by a descending chain of increasingly pale reproductions, the photograms faithfully accompany the "horizontal" metamorphoses of life, as much as the countless afterlives of formed matter, light, radiation… Outside the purview of metaphysical philosophy that treats it as a collection of simulacra, art respects time, or, perhaps, it rebels *against time within time*, serving as a paradoxical, non-dialectical medium for preservation-and-release. Art today is nothing, if not an emblem—being thrown into, *emballein*—of afterlife.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 15 **The system implodes**

Much has been said about the historical knot that tied Chernobyl together with Soviet Union's collapse. For all the inebriating freedom people felt when Gorbachev instituted his reforms, inaugurating *perestroika* (which translates as "rebuilding") and *glasnost'* ("vociferousness"), they were denied access to vital information with tremendous impact on their health and the state of the environment. The values of *perestroika* and *glasnost'* were readily discarded at a time of crisis, a decision that would continue to haunt the Soviet leadership until the regime's final days. Reactor 4 at Chernobyl's nuclear power station, suggestively named after V.I. Lenin, exploded; the political and economic system that had constructed it imploded under the weight of its bureaucracy, inner contradictions, ideological exhaustion, and the unwinnable competition with the "capitalist West."

As for the shattering of the Soviet consciousness, it was both an explosion and an implosion, not as sudden as the former and not as gradual as the latter. A vast majority of those who lived through it took cognizance of what had transpired only after the event, in a way strikingly analogous to how the complex of occurrences that goes under the name "Chernobyl" was existentially interpreted, *après coup*. (Typical anecdotal reports repeat ad nauseam: "One fine morning, I woke up and, although everything seemed the same as before, I no longer recognized my country." To this day, many dismiss this rude awakening as part of a nightmare, a horrible dream. Their denial is at the root of contemporary Russian politics.)

I was deeply affected (at the time, unawares) by the Chernobyl explosion and by the Soviet implosion. My body and mind took in the effects of both. A little over a year after the trip to Anapa, I entered the first grade at an elementary school where teachers could, for the first time in decades, use experimental pedagogic methods and draft their own class curricula. I appreciate that, in my formative years, I benefited from a newly found openness, inventiveness, and autonomy in teaching—attitudes that, in one way or another, still influence my scholarly pursuits. But given that the "foundations" I rely upon include an explosion and an implosion, my existence is vertiginously groundless (that is to say: intensely *existential*, a true throw), a predicament exacerbated by an acute sense of non-belonging and a series of subsequent displacements. The collapse of the Soviet Union enabled my first immigration. The event (or the non-event) of Chernobyl added to my disquiet. Extremes intersected: the implosion led to exile; the explosion instigated further introspection.

Geranium chinum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 16 **Chernobyl, the place and the word**

Following a brief delay due to the Soviet cover-up, Chernobyl has—overnight and the world over—morphed into a symbol of tragedy, a disaster all the more fearsome because of its imperceptible and yet inscrutable effects. It has evoked everything from the chimeras of genetic mutations to "glowing" plants, animals, and humans. And, regardless of the time that has passed, it still functions as a cipher for an unmarked trauma, a *shibboleth* for the irremediable dearth of understanding, a barbed-wire limit to interpretation, which does not allow us to draw on past experience so as to imbue the arcane disaster with meaning.

Prior to the night of April 26, 1986, Chernobyl was just a small town in northern Ukraine, situated less than two hundred kilometers from Berdychiv, where my maternal grandfather hailed from. Like other settlements in the area (Jitomir and Vinnitsa stand out for me, because some of my more distant relatives come from there), it was home to significant numbers of Ashkenazi Jews, who accounted for sixty percent of its inhabitants at the turn of the twentieth century. Since the end of the eighteenth century, Chernobyl was the center of an important Hasidic dynasty founded by an itinerant preacher Nahum.[16]

On a darker side, and similar to other neighboring towns (or, in Yiddish, the *shtetls*), it was the site of horrific pogroms that decimated the Jewish population. During the civil war, many of Chernobyl's Jews were burnt alive by the Cossacks in a local synagogue.[17] Under the German occupation that began in 1941, the surviving Jewish residents of Chernobyl were shot *en masse* right at the cemetery, where their ancestors were buried and where, on the site of their collective grave, a nondescript tombstone commemorating the atrocities was erected after the war. Symbolically, therefore, Chernobyl names a catastrophe before catastrophe, the one overlaying and overwriting the other. That "other Chernobyl" is, to this day, hidden, buried, forgotten, now also under piles of radioactive debris.

The literal meaning of the word itself sends us back to plants: *chyornyi byllia* is "black grass," or mugwort, the botanical species *Artemisia vulgaris*. Dedicated to the Greek goddess Artemis, it was supposed to be a plant that imparted strength and endurance, offered protection, and facilitated healing. The magical powers of *Artemisia vulgaris* have, alas, floundered and heartbreak upon heartbreak, bodymindbreak upon bodymindbreak, are unhealed! The Chernobyl disaster is a mugwort disaster—not, to be sure, of the mugwort itself, but of our relation to it and, through it, to vegetal nature as, at once, a part and a condensed representation of nature as a whole.

What exploded in Chernobyl was more than a nuclear reactor. Its ultimate casualty was the future of human dwelling in what we succinctly term our *natural environment*: in the midst of the elements of air and water, the earth and solar fire; with plants and animals; in proximity to forests and rivers, such as Pripyat'. It was symptomatic of the loss of a world where one could still breathe, live, and just be, the loss which could be sudden, triggered by an explosion, or gradual as in the case of global climate change. If practical consciousness lets us move quite effortlessly in our physical milieu, then the collapse of our immediate environment necessarily results in the detonation of consciousness. That is when thinking really begins.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 17 **Fallout**

The extent of Chernobyl's fallout zone, which is significantly wider than "the exclusion zone," is unprecedented. The trail of radioactive particles stretched from Norway down to Turkey and from Russia to Italy and eastern France. It interfered with and invalidated our preconceived ideas about causality, responsibility, national sovereignty… In the broadest sense, *fallout* denotes the enduring negative effects of an action. Here, it has to do, rather than with a single action, with the sum total of human activity, marshaled by our attitude toward and treatment of the natural environment, our long-held views on energy, and our unthinking deployment of technology. The radioactive fallout from Chernobyl is the comet-end of the widespread fallout from the abuse of nature that no shelter and no sarcophagus will ever contain.

Now, a more specialized sense of the term combines the radioactive particles themselves, their drift through the atmosphere, and, when no longer airborne, their deposits on the ground and contamination of the soil and the crops. Fallout indicates dispersion, scatter, being strewn from a source, usually in the shapeless shape of dust. Still, the exact source is never clear: Is it what certain thinkers have labeled "the domination of nature"? Soviet irresponsibility (in Russian: *khalatnost'* or *bezalabernost'*)? The nuclear meltdown and explosion itself? The same is true for the fallout's effects, drawn out in time and space, dispersed, often-time untraceable to the origin. And all that is not to mention the dispersal, banishment, and exile of people from the exclusion zone, or the mass migratory flows that commenced as soon as the floodgates (or else, the Iron Curtain, unhinged by uranium) of the Soviet Union went down.

Nor was fallout of one type only, for it affected the land and its ecology, the people and their health, political and social institutions, moral and intellectual precepts, culture and agriculture. It sparked off external and internal exposure to radiation, which grazed our skin and which penetrated into us with every breath and every bite from a piece of contaminated food. The "outwardness" of fall*out* is never final. Invariably, it leads to incorporation, depositing radioactive elements in the body and its organs, in the earth and its layers, in the plant and its roots and leaves. But there is nothing dialectical in this succession of "safe" nuclear energy production, the release of radioactive waste, and its interiorisation in living organisms and their inorganic substratum. There is neither elevation nor progressive mediation nor domestication nor concrete spiritualization nor enabling negation in such a process that overshadows and destroys you from within. It is senseless, dumb, absurd. Like the very techno-culture that has unleashed it.

Byrsonima lucida, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 18 **Back home**

I was back home in Moscow in the middle of June 1986, one week before my mother would give birth to my younger sibling. I recall feeling a little upset that no one seemed particularly excited to hear about my first experience of the sea or about the depressing state of local bookstores. "Chernobyl" was repeated like a mantra in every shred of conversation I caught: "Strong winds were sweeping through Moscow a few days after the explosion. They must have brought plenty of radiation from Chernobyl"; "The government betrayed us with regard to Chernobyl"; "Chernobyl is just the first harbinger; there will be others"; "Poor people; they had to leave everything behind"… The mood was that of a generalized, free-floating anxiety, which corresponded to an amorphous threat, simultaneously far and frighteningly near.

At times, it seems to me that I have never really come back home from that first outing to the sea. Or, that I have returned to a place, which was very different, more so than on any other Odyssean occasion. The maples and birches next to my apartment block were not barren as when I had left; they were already full of leaves. My brother about to be born. The adults deeply preoccupied. But, if I have not quite circled back home, then I am still (I have remained) somewhere close to Chernobyl, or, perhaps, it is Chernobyl that is close to me, as it, no doubt, is in my dreams.

December 1, 2015. While writing this text, I've dreamt that I am holding in my hands a pot with a blossoming plant, most likely a geranium, grown in Chernobyl's soil, very much like those from Anaïs's herbarium. I want to keep it, although I am also concerned about its radioactivity and wish to measure the levels of radiation before making the final decision. Do I espy myself in that plant?

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 19 **Can plants still point the way?**

We are not at home in the world after Chernobyl with its toxic mix of genocidal history and environmental destruction. Instead of being the masters of our milieu, we are lost on a planet transformed and mutilated as a consequence of human activity. Worse still, the internal compass, which was our consciousness, is shattered and no longer usable. We cannot even figure out whether we are lost at home or outside it, despite the reminder Pope Francis sent to us in his 2015 encyclical that the whole of the earth is our common, shared dwelling. Our glorious adaptation to any environment, ostensibly molded by the specimens of *Homo sapiens* according to our needs, has revealed itself as a spectacular non-adaptation, verging on self-destruction. Chernobyl is an indelible sign in this revelation.

To rephrase the question that gave the present fragment its title: When our consciousness has been exploded, can plants assist us in reconstituting it? Only on the condition that we acknowledge that they, also, have their own modes of awareness, sensibility, memory, learning and thinking. In a word, their own consciousness. Accepting the existence of something like a "vegetal subjectivity," we by the same token relativize human consciousness (in ruins) and let it assume its deflated place among other types of sentient and thinking life.

Vegetal processes, such as growth and decay, which Aristotle classified as varieties of movement, can also come to our assistance. Countering our metaphysically inflected economic and energetic delusions, plants teach us that there is no infinite growth, no growth without decay, itself the precondition for future growth. What the imperatives of market economy and the byproducts of nuclear power have in common is the suppression (indeed, the repression) of decay. This makes them incompatible with the world of the living, which they undermine and destroy. Against the background yearning for imperishability, plants point the way without leaving the places wherein their existence is embedded. They show how to grow and, by extension, how to decay better in our quotidian living practices as much as in our thinking.

Dolichos pruriens, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 20 **The Sarcophagus**

The Soviet response to the Chernobyl catastrophe was equally catastrophic, a prolongation of the perverse process, which came to a climax in the meltdown and release of nuclear waste. Sending (indeed, throwing) thousands of people to "liquidate" the consequences of the explosion, the authorities gave them surreal orders to "deactivate" houses, trees, and the affected layers of the soil by burying them inside the earth, something that Alexievich astutely deems to be "the new inhuman human task."[18] One of these endeavors is the Sarcophagus, the plans for which were hastily prepared while I was still in Anapa, on May 20, 1986. A metal-and-concrete containment structure for the damaged Reactor 4, it was meant to prevent radioactive materials from seeping into the ground and being liberated into the atmosphere. Among other things, it encases 180 tonnes of uranium and about 30 tonnes of radioactive dust.[19]

Far from "liquidating" the lethal effects of radiation, the Sarcophagus merely covers them over, and imperfectly so. It inherits the obsession with the concrete from the very technological failures it attempts to neutralize. The funereal insinuations of its original name must have sounded disconcerting to Soviet officials who rebranded it *Ob'yekt Ukrytiye*, "Object Sheltering," a designation that gave the impression of safety (sheltering) and control (an object, in relation to which we are the subjects in the driver's seat).

And yet, it was not the bureaucratic appellation but "the Sarcophagus" that was dead right. Humanity has been digging its own grave for quite a long time, which is, nonetheless, but a second in comparison to the terrible nuclear monument that will be erected upon it. Chernobyl gave us a glimpse of its concrete (discernible and made of *béton*) outlines. Encasement is entombment: together with radioactive waste, we are the ones on the inside of the Sarcophagus, even if it appears that we are outside. The Earth is turning into a collective grave, for the human and untold numbers of non-human species. Whatever the Sarcophagus covers, it cannot cover over the approach to the natural environment that has necessitated its construction.

The drama, and a tragedy at that, of contemporary humanity is that we are, at the same time, Creon and Antigone, the sovereign who disrespects ecological realities, burying alive the one who cares for them, and the suffering prisoner, deprived of the elements, of everything that makes life possible. The Sarcophagus is the stage prop and the denouement in this nuclear production, which is the enucleation of the subject. The subject is eaten up, self-cannibalized. In Greek, the composite word *sarx* + *phagos* says *flesh-eating*. Radiation and the techno-madness it metonymizes eat our flesh, eat into it. But there is more to it: the Sarcophagus is a Psychophagus, soul-eating. In this, it is akin to our notion of dwelling, which, rather than taking care not to impede the flows of energy through and around it (the school of *feng shui* is a notable exception here), circumscribes that which is appropriated through fences or walls, separation barriers and security perimeters, with the view to staving off exteriority and keeping the outside outside. What all these divisions enclose as property is, in the end, nothing but noxious waste, the waste or wasting of the body, the mind, and especially the body-mind.

Plants, for their part, break through concrete, growing in its cracks and upturning massive slabs with their roots. They open everything and everyone to the outside. As I noted in *Plant-Thinking*, "Unlike a crypt, supposed to keep (though it never lives up to its mission) its inhabitant in place, surrounded by inorganic matter, the grave covered by a flowerbed is always already opened, exceeding the domain of the earth and blurring the boundaries between life and death."[20] Plants will have been able to point out a new way. But what if, in the aftermath of Chernobyl over which the Sarcophagus presides, we have denied ourselves this simple, material, vegetal salvation as well? After all, rather than bury ourselves under a flowerbed, we have encrypted ourselves, body and soul, in the concrete.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 21 **Anapa-Chernobyl**

Today, Anapa and Chernobyl are situated in two different countries, the Russian Federation and Ukraine, that are, more or less candidly, in a state of war with each other. There are, however, traces of the latter in the former—for instance, the radioactive elements that have settled in the soil and a stone slab, strategically put on the Square of Glory, at the corner of Revolution Avenue. The slab, featuring what looks like frozen flows of molten lava on its right-hand side, bears the inscription, "To the victims of Chernobyl, 1986-1996." The reason for this commemorative landmark is that, for several years, the Anapa sanatoria, including the one where I stayed in 1986, would receive the "children of Chernobyl" for rehabilitation. Despite its ongoing contamination, the role of Anapa was unaltered. It was to serve as a receptacle for the young victims of Soviet industrialism, be they a boy suffering from asthma in Moscow or the children from Gomel and Kiev, who received life-threatening doses of radiation. For me, the link between Anapa and Chernobyl is both physical and psychic. Physical, because my body has been exposed to radioactive particles from a locale I had never visited; psychic, because that unchosen and unregistered event requires lots of mental energy to deal with, work through, if not to make sense of or come to terms with. Readers already know that I sometimes journey from Anapa to Chernobyl in my dreams, virtually marking the actually unmarked trajectory, reversing its course but powerless to change anything in reality. The event of the thing: this thing that regards us …

Dolichos pruriens, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

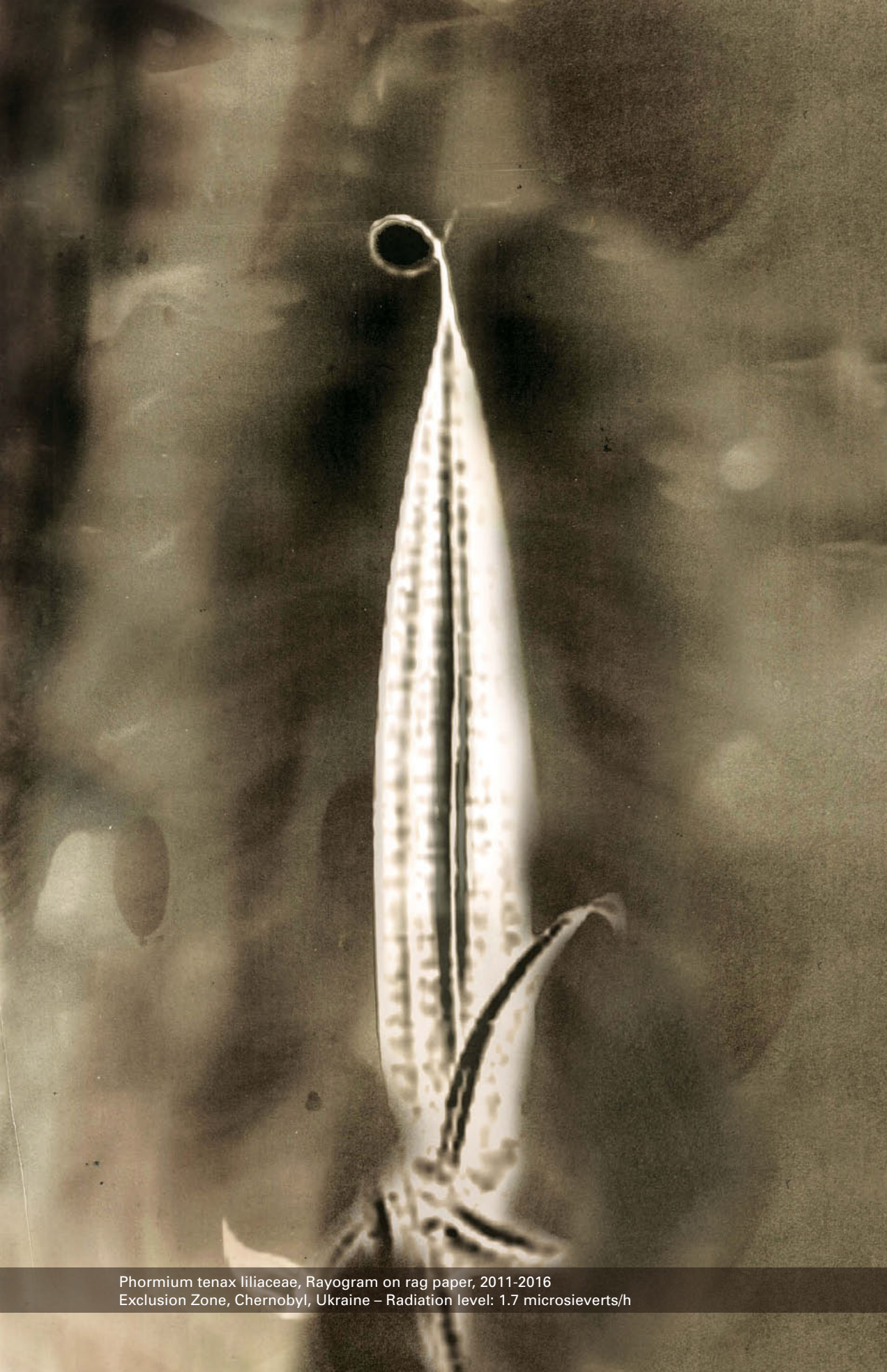
Fragment 22 **Exclusion zones and states of exception**

Chernobyl's exclusion zone refers to an area with the radius of thirty kilometers around the site of the nuclear power station. In Ukrainian and Russian, it is known more dramatically as *zona vidchuzhennya* and *zona otchuzhdeniya*, "the alienation zone." Often enough, it is called, in brief, "The Zone," *Zona*, which is, incidentally, the informal word for labor camps, especially those situated in Siberia, and, in particular, for the gulags. Whereas the zone of the prison contains human beings outside the confines of the law or of civilization as such, a radioactively contaminated zone closes itself off to and expels us. Bracketing this polar opposition with regard to the human, the two zones share the status of states of exception, where nothing is regularized, predictable, or normalized and where environmental and social emergency rules.

Alienation zone is a more accurate syntagm than *exclusion zone* for several reasons. First, it intimates to us that what remains, and will remain interminably, of Chernobyl is the outcome of a still incomplete process of human alienation from our environmental milieu, from everything that sustains life and that life sustains. Second, it indicates that the aliens are not some imaginary intruders from other planets, let alone inanimate objects or animals and plants. *We* are the aliens. The Zone is brimming with living beings, albeit not of the human variety. We, in our turn, have become other to life and have, until recently, worn this foreignness as a badge of honor, to the point of constructing our identity out of it. Third, and relatedly, the syntagm implies that the current state of affairs, whereby human beings are turning into the aliens of the earth they have ostensibly domesticated, is self-inflicted. Alienation is inevitably a self-alienation, for we cannot draw neat division lines between ourselves and our life-worlds.

The Zone bars human dwelling, but so does, through a different route, the pollution of the atmosphere with CO2 emissions. Chernobyl's thirty-kilometer radius is an advanced laboratory, at the leading edge of what is going on with the entire planet. In a consummation of the alienation or self-alienation that has unfortunately proved to be constitutive of the human, the whole world is on its way to becoming Chernobyl or a gulag. That is to say, the exception is gradually being transformed into the rule and the order of exclusion is undergoing an inversion. Entire regions of the world are converted into no-go areas, whether as a consequence of wars or environmental devastation. The effects of climate change leave no place unaffected. It no longer makes sense to single out exclusion zones (such as, at the extreme, that of Chernobyl) but to seek out the disappearing pockets of the earth still propitious to life, trying to inhabit them without resorting to the violence of appropriation, to maintain and to enlarge the livable realm both locally and through a global transition to the elemental sources of energy.

According to the political theory of Carl Schmitt, it is the sovereign who declares the state of exception and, in doing so, suspends the mundane workings of the law. The exception of Chernobyl, if it is one, does not obey this rule. On the contrary, Soviet officials resisted for as long as they could making any declarations and pretended that no deviations from "business as usual" had happened or been necessary. It would be too easy to explain their behavior away with reference to the general opaqueness of the regime. I want to suggest that something else underlies the irresponsible official response, namely the technological development of atomic weaponry and energy, which was, above all, a political watershed. Let us call this *the transfer of sovereignty to the atom*. Atomic sovereignty is the starkest form of our self-alienation, which gave rise to a power that is uncontrollable and that extends over a time span unfathomable to human beings. Henceforth, the state of exception will be declared wordlessly, in the language of the atom. Spoken pronouncements—still requisite to minimize the harmful effects of major technological accidents on those living in the affected areas—will be mere repetitions of what the fruit of our self-alienation declares by other means. Violently, atomic sovereignty puts language-as-word-and-speech, *logos*, into its place, reducing it to an insignificant exception from an overwhelming regime of silence.



Phormium tenax liliaceae, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 23 **Radioactive fire**

When I think about the half-life of U-238, tonnes of which are piled behind the walls of the Sarcophagus, the ground beneath my feet slips away and the temporal horizon recedes. Comparable only to the age of our planet, the billions of years uranium requires to release half of its radioactivity put it closer to eternity than to a time-bound reality. In this case, radioactive decay is distinct both from the transformative divestment of organic decomposition and from preservation, which keeps the same on the condition that it be impregnated with difference. Indistinguishable from its opposite, radioactive decay connotes stuckness, the indigestion of matter as well as that of the psyche. It does not stand alone: the spread of plastics, with which deserts and sea-beds are strewn alike, is another corollary to spiritual-material constipation, our lamentable non-biodegradability. (To clarify, I read *trauma* a synonym for mental indigestion. And, on more than one occasion, I have proposed that art and certain kinds of thinking may contribute toward our becoming "unstuck," obviously without changing anything in the physico-atomic reality of the half-lives characteristic of various elements.)

The invisible glow of radioactive matter is a fire devoid of the light and heat perceptible to us. Its burning, furthermore, borders on the eternal. As such, it is probably the closest approximation to the ideally inextinguishable blaze of metaphysics, itself predicated on the Judeo-Christian theological, divine incandescence. Just think back to God's apparition before Moses in the shape of a burning bush that did not burn to the ground, did not disintegrate into ash…

Across different traditions, East and West, fire has been construed as the physical force of ideality, capable of purifying matter. If the Aristotelian prototype for matter is *hylé*, or wood, then spirit sets itself to work as a blaze that consumes wooden materiality, elevates it in and as smoke, renders it ethereal. That, too, has been our view of energy extraction for millennia, until the advance of nuclear power.

Admittedly, with the splitting of the atom, the rationale of extractive-destructive energy has been intensified as science and technology penetrated and tore through the very core of matter. At the same time, barring an accident of the kind that shook Chernobyl and the world thirty years ago, the atomic flame has shed its finite and observable character, ridding itself of (almost) all material vestiges and temporal constraints. It seems to have brought to fruition the perennial fantasies of the inexhaustible unmoved mover and the Biblical burning bush, stamping living matter, as well, with another force, more subtle yet internally overpowering, one that affects their constitution all the way down to "life's program," the genetic code. *The uncanny fire does not merely analyze but molds matter*. It works on the living from without and from within, frequently with awful consequences for the organism or its progeny. Instead of destroying beings in a blazing instant of incineration, it prompts them slowly to annihilate themselves. This fate is, by the way, one that Creon inflicts on Antigone, who has no other choice but to take her own life in the cave, to which she is confined. The insidiousness of radioactive debris: its residual energy signifies counter-work, or anti-energy, insofar as those who have been touched by it are concerned.

Unknown specie, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 24 **A time capsule**

Pripyat' is stuck, a ghost city frozen in time. There, it is still, and will always be, April 1986. The Soviet Union has not yet folded upon itself; the drab and grey apartment blocks offer evidence of the uniform solution to the housing problem that imparted to the neighborhoods of Moscow, Baku, Riga, and Tbilisi the same impersonal character; the rusty Ferris wheel whispers what it remembers about the amusements of children who took rides in it and who will continue on this circular journey indefinitely, forever staying six years old.

Similar to pre-disaster reality, the disaster has never ended there, either. Everything mutely screams about it: the blackened clothes left to dry underneath apartment windows for decades, the empty streets, the libraries with books scattered on the floor. This silent scream of the things themselves cannot be stifled, even if, at times, Pripyat' River becomes the new Lethe. What do those who embark on "nuclear tourism" to the exclusion zone feel there? At what level do they forge a connection with this deeply traumatized time-place bespeaking traumatized and shattered bodies and mind?

(I understand, clearly, that a vast majority of tourists do not establish a meaningful connection to the places they tour but pass through them like the afternoon breeze. Pripyat', however, is not *any* place; it might not be a place at all insofar as its temporality and habitability have been irreparably disrupted. How does one pass through what does not pass, does not become a past? That is the question.)

Lest we be misled, eternal immutability is little more than a metaphysical daydream, notwithstanding the substantiation it receives from nuclear waste that eschews decay. Changeable beings *par excellence*, plants throw a challenge to metaphysics in Pripyat', where they are taking over urban spaces, and elsewhere. Defined by metamorphosis, they metamorphose the places where they grow and, if given free range, swallow up sidewalks and squares, buildings and roads. Not by chance, the new euphemism for the zone of alienation in Belarussia is "Polesie State Radioecological Reserve [*Zapovednik*]," which extends the language of conservationism to hopelessly contaminated and, therefore, "untouchable" terrains, alienated more thoroughly than before.[21] Plants will gently gag the silent scream of things. Where there was devastation and abandon, there will be a forest. That said, it is doubtful that the forests of Chernobyl would last, unless the insects and microorganisms that play a central role in the process of decay return and resume the decomposition of dead vegetal matter. If this does not happen, the mineral nutrients in the soil will be depleted, endangering future growth.

We might say that the herbarium is, likewise, a time capsule, keeping the shapes of vegetal matter that used to be alive and is now dry, brittle, fragile. A herbarium of lights and shadows, the Chernobyl Herbarium is, in turn, a phenomenological memento, a keepsake of impressions that supplant the formed matter of the plants themselves. It is a relic of a perceived instant, the silhouettes collected in it belonging neither to the surface that cast it nor to the viewer. Through her herbarium, Tondeur has succeeded in creating an intermediate space extricated from the contrast of change and immutability, a series of delicate moments on the verge of their disappearance. Her work with and on plants is a buffer between the mute scream of beings exposed to extreme radiation and its soft muffling by the (vegetal) life that goes on, moves on, survives. The photograms do not betray the trauma, the stuckness of the drive that prompts us to freeze the instant and be scorched in its eternal present, the never-ending high noon of unregistered experience. But neither do they revel in the traumatic stoppage, deepened or prolonged. If you attend to them with care, with a gaze which is not that of a visual tourist, they might give you a clue to a difficult, existential riddle: "How does one pass through what does not pass, does not become a past?"

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 25 ***Abyssus abyssum invocat***

Linaceae, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 26 **Recovering our senses… and our sense**

People who came into contact with extreme amounts of radiation report that their senses stopped providing them with information about the world. Photographer Igor Kostin temporarily lost his hearing when, flying over the ruins of Chernobyl's Reactor 4 so as to capture the site on film, he stuck his head out of the helicopter.[22] The levels of radiation were so high that all the photographs he took on that day were ruined, save for one. After a certain threshold is crossed, exposure shuts down the peripheral nervous system by inducing compressive soft tissue fibrosis.[23] You can no longer smell, taste, experience light touch…

If the senses create interfaces between our bodies-minds and the world, then their deactivation culminates in an autistic enclosure in oneself, being cut off from the outside. Again, the effects of radiation mimic those of metaphysics. In one way or another, both fashion a hermetically sealed interiority, whether it is a body confined in itself or a purely autonomous, independent, self-sufficient subject. Both suppress the body as an aesthetic receptor of *what is* or as a material extension of existence. And both shrink *the I* to nothing but abstract thought, the *cogito* stripped of all sensuous thinking.

Radioactivity is probably the most potent figure of metaphysics in our age. The struggle against nuclear proliferation, atomic energy, and metaphysical dictates is one and the same fight. It behooves us to recover the body as an object *and* a subject from its violent reduction to sheer objectivity, to a passive material substratum at the mercy of radiation and abstract spirit that arrogate to themselves the right to shape it at will. Since the early part of the twentieth century, phenomenology has been at the forefront of endeavors to reclaim the *gravitas* of corporeality. Adventures in vegetal philosophy show that this task cannot be limited to the liberation of human corporeality alone from the straightjackets of metaphysics and that the bodies of plants are also sentient, sensuously thinking, affecting and affected, open to the world.

The metaphysical-radioactive spiriting away of the body condemns pure "thought thinking itself" to a state of madness. There is no consciousness so long as it is conscious of nothing outside itself. At the same time, exteriority is not spatially remote from us, but is displaced and forgotten within. Reconnecting to it, we must come back to our senses from metaphysical and radioactive nightmares, the eternal conflagrations of which threaten to extinguish the glow of life itself. To come back to our senses means to awaken and, literally, to be reunited with the sensuous experience from which we have been expelled, to reenter our senses and to re-inhabit them. No abstract manifesto calling for a philosophical recuperation of bodies will do the trick. The retrieval of sense will happen only when we begin to think with our senses, to discern and engage with the sensuousness of other living beings (such as plants), and so to find ourselves, once again, in the world.

Linaria scrophulariaceae, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 27 **After an end of the world**

Entertain as we might the secret or avowed hopes of recovering our senses and through them the world itself, the following conclusion is irrecusable: We live after the end of the world. Or, more accurately, after *an* end of the world. As I put it in *Energy Dreams*, "This is, finally, what *an end of the world* conveys: a thousand deaths (ends, times, terms, terminations, borders, or edges) awaiting our shared plane of existence [...]. The many ends of the same world imply a plurality of means, through which life could be destroyed, a variety of detours (as Freud liked to put it apropos of the death drive) leading to the same outcome."[24] In Chernobyl, one of these, in the words of my colleague, philosopher Susanna Lindberg, "technologies of the end of the world," was activated, put into action, realized. Reminiscing about the spectacle of soldiers and civilians ordered to bury trees, houses, and the upper crusts of the soil in the earth, the voices Alexievich ventriloquizes in her book are sharply aware of the apocalypse, to which they bear witness. "Is this the end of the world?" is a question persistently raised on its pages, now explicitly and now between the lines.

The world has ended, is ending in innumerable ways, and will keep ending for some time to come. So much so that it is defined by its relation to the end. Thoroughly finite, if not the very figure of finitude, the world *is* its ends. Considering, in the footsteps of Martin Heidegger, every human to be a world in and of itself, Derrida used to remark that every death was the end of a world—always unique, unrepeatable, irreplaceable. Endlessly worried about the finitude of finitude, twentieth century philosophy flirted with the possibility of banalizing the expression and, thereby, inoculating us against its disturbing force. Although something or someone did not survive one of the world's ends, survival was unflinchingly affirmed, often in the guise of mourning.

All that changes with regard to Chernobyl. An end of the world among others, it also portended another, more sinister prospect. In addition to terminating the actuality of multiple human and nonhuman worlds, the event of 1986 did away with the temporal horizon of existence, against which the world could still appear meaningful. It overshadowed (or, better, outshone) the light of meaning. Transcending the scale and order of time tailored to human measure, the persistence of certain kinds of contamination in the environment becomes unthinkable. That plants still grow in and animals return to Chernobyl, post-apocalyptically, does not disprove this thesis. Assuming that it is still plausible, the retrieval of sense will be belated, forever dwarfed by a senseless and unending disaster.

Thesium humifusum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 28 **Sublime beauty**

Chernobyl has made Immanuel Kant's aesthetic notion of *the dynamically sublime* obsolete. The sublimity of nature instills fear in the observer of a raging storm or the cliffs overhanging a sea. But, precisely because human beings are the more or less detached spectators of these phenomena, which overwhelm us by virtue of their physical force or height, we are confirmed in our judgment that reason is superior to the tumult of nature and that it is safe enough to contemplate this tumult, while deriving pleasure from the feeling of being protected in the face of horror. Not so in the case of a nuclear fallout. Radiation brings to naught our detachment from a threatening force and annihilates the independence of a viewing subject standing in opposition to a viewed object. Reason evinces its impotence. More than that, the imperceptible nature of radiation elevates it higher than the sublime. Absolute and free—in the sense of being untethered from any given source of danger—terror intrudes into our psychic lives. In the fallout zone, everything is dangerous, not only around but also within our bodies. We are not separate from the threatening reality, "caused" by and residing in us.

The liberation of the sublime from the banisters and barriers erected by reason allies it with "free beauty" that does not serve specific ends. It is this alliance that we find in Tondeur's Chernobyl series. The photograms do not represent anything. They only catalogue the traces of flowers, leaves, stems, and roots, along with the remnants of radiation trapped in them. The visual background effects are equally non-representational. Insofar as it suffuses the beautiful with the sublime, Tondeur's work is exquisitely attuned to the reverberations of Chernobyl in the aesthetic sphere. Her art does not imitate life; rather, it records life's vulnerability, amplified by the failure of reason to protect us, on the hither side of the beautiful/sublime divide.

Geranium chinum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 29 **The dedication**

It would be only fair to say a few words about the dedication to this volume, written in three languages corresponding to the three countries most affected by the explosion of Chernobyl's Reactor 4: Russian, Ukrainian, and Belorussian. Translated into English, the inscription reads: "This book is dedicated to the earth, animals, water, people, air, and plants who (or that) have suffered as a result of the Chernobyl catastrophe."

Why not only to the human victims? Of course, neither the earth nor the plants nor the air will understand the dedication and will be oblivious to the book itself. But that, at any rate, was not my goal. I simply wanted to call attention to the fact that we do not acknowledge enough the effects and, above all, the ruinous side effects, of our technologies on the elements and on non-human forms of life, unless they prove useful to us. Not even the accent placed on biodiversity eludes the exigencies of utility. Conservationists wish to hold on to a wide, albeit quickly disappearing, variety of flora and fauna as though it were a living encyclopedia to keep in reserve, available for future consultation and potential utilization. That is why proposals crop up to create an extensive genetic database of life, permitting future human generations to resurrect an extinct species should the need to do so arise.

"But surely you do not mean that the earth, water, and plants have literally *suffered* from the Chernobyl disaster, or from anything else, for that matter?" an inquisitive reader will ask. "How can what is not endowed with a central nervous system suffer?" Let us tackle these objections by refusing to conflate suffering with pain. The root of suffering combines *pathos* and passivity, which may or may not be accompanied by patient endurance or passion. When I wrote above "What did our exposure amount to? Did it prepare the grounds for a trans-human solidarity?" I was conjuring a community predicated on the *pathos* and passivity of suffering, its outlines broadly sketched out in the dedication. On the path of radioactive debris, we were all plant- and soil-like, exposed physical extensions trapping some particles and letting others go through us, unwittingly. Far from a new dimension of our being, it is as old as our bodies themselves. What could be novel, in turn, is our attitude toward it and a reassessment of our place in the battered, fragile, inherently violable world, to which we belong.

Linum usitatissimum, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 30 **Half-life, half a life, halved life, life's (other) half**

- Whatever the reason, the number "30" presides over the time and the space of Chernobyl. It marks a grim anniversary, counts the years that had to pass for cesium-137 to release half of its radioactivity, measures the radius of the exclusion zone, weighs the tonnes of radioactive dust the Sarcophagus contains.
- Five-sixths is the fraction of my own life lived after Chernobyl, that is, after a certain end of the world, which had grazed me (how deeply?).
- A life divided in half, neither arithmetically nor geometrically. A break between before and after, there and here, then and now.
- For many, the event has halved their life expectancy and deprived them of half—in reality, of infinitely more than half—their lives, of the ground underneath their feet, their native land.
- The thirtieth fragment is half a fragment. And, paradoxically, still more intensely a fragment. The fragment's fragmentation. The falling apart and the fallout of the already incomplete.
- Life will not have been full. If it goes on, lives on, it does so only by way of survival: a life that is half a life, half unlivable. There is no such thing as a full life to begin with. But this does not make the mathematical guillotine of "half" any more bearable.
- Life's *other* half. Death? What happens after I find myself *nel mezzo del cammin di nostra vita*?[25] Life's other? Or another life? Remains to be seen.
- An infinite diminution where, simultaneously, nothing changes. Radioactive elements' half-lives will be halved as an equal amount of time elapses. This, too, will be halved, and so on: 30, 30, 30, 30: half, quarter, one-eighth, one-sixteenth… And what about the half-lives of 4.5 billion years?
- The diminution of noise emanating from what we call speech, voice, reason, *logos*. But language does not evaporate, does not vanish into thin air. Diminushh… Shh. Time to attend to the silent witnessing of plants and works of art.

Linum usitatissimum, Rayogram on rag paper, 2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 31 **+1**

– Redemption, recovery, convalescence…

– Is all this possible after the impossible that has happened and that keeps happening without end?

– Yes and no. As Kafka once wistfully observed: "There is plenty of hope, an infinite amount of hope—but not for us."

– For whom, then? Or for what?

– Let's say, for a plant, though not for *any* plant. There is, perhaps, some hope for the other plant, the plant of the future, the one to come. Provided that the seed does not fall in the soil contaminated by radioactive particles, but is, instead, granted safe passage by the wind, in a bird's stomach, or a human hand.

– So, only a leafy creature can turn over a new leaf, open a blank page, and carve out virginal space on the verge of renewal.

– Indeed. The leaf seems to have little to do with it, exposed as it is to everything, including radiation. If we are to believe Goethe, however, the seed is but a leaf—contracted, thickened, and infinitely folded unto itself. Assuming that, by some miraculous stroke of luck or thanks to the resilient wisdom of life itself, seeds do not imbibe radiation, then they turn over a new leaf on the leaf, letting it be exposed to another future. Or, more precisely, letting it have *a* future.

– Am I asking for too much when I desire, with every fiber of my being, something like vicarious redemption, absent either otherworldly transcendence or divine salvation? Can plants save us?

– In a sense, this has been the secret hope behind much of my vegetal philosophy, a heavy burden I have placed upon what I call "plant-thinking". The difficult part is that we must allow the plants to save us, which is not the same as impassively awaiting salvation. The art of Anaïs Tondeur is exemplary here: it is an aesthetic conduit for vegetal redemption, which dovetails with the philosophical passages I have tried to clear. Between hope and despair, through art and philosophy, we must learn how to be guided by plants. And, above all, by seeds that, after the end of the world, promise to sow a future.

Seed Linum usitatissimum, Rayogram, 2017
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 32 **A Train to Chernobyl, Replay**

Cutting through fields and forests, towns and villages, this train is rushing to the site of an unseen disaster. To be sure, not this exact train, but the one I took as a child more than thirty-three years ago to a sea-side resort in southern Russia that—I will have learnt decades later—received substantial portions of the Chernobyl fallout. A long delay between the catastrophic event and coming to know that it had touched me was not particularly helpful in "processing" this belated knowledge.

As in the structure of any trauma, the train ride, which coincided with the meltdown and explosion of the nuclear power plant in April 1986, and a nearly two-months stay in the fallout area did not evanesce. These events were extracted from the routine functioning of memory; they were torn out of the field of what we call the past, as though failing to pass and remaining forever suspended in an oppressive present. It was in order to begin working through a trauma as personal as it was ecological and political that I started jotting down the fragments of what became the textual portion of *The Chernobyl Herbarium.*

By a felicitous coincidence, exactly at the time when I was gathering my thoughts on the nuclear disaster and on my relation to it, I came to know the art of Anaïs Tondeur, particularly the photograms that comprised *At the Edge of the Visible*. I immediately sensed that my own troubled ruminations could engage in a fecund dialogue with these eerie traces of traumatized plants. It was as if Anaïs presented me with a mirror, in which I saw myself reflected no longer in a human shape but as a life, or simply a sentient surface, exposed to radioactive effects without willing or knowing it. Thankfully, when I contacted the artist, she enthusiastically accepted my invitation to collaborate on a book commemorating the thirtieth anniversary of the Chernobyl disaster.

Since then, *The Chernobyl Herbarium* has been leading an autonomous life (or an afterlife) touring the world as an exhibition, translated in part or as a whole, percolating into new collections, catalogues, magazine issues... Art and philosophy, the images and the texts printed on paper or available in a digital format, have taken upon themselves a fraction of the work of mourning that began well before their emergence. Not only has this work been carried out through them, but they have also become its subjects, the agents of mourning. Their global "circulation," their own exposure to spectators' gazes and minds, has marked a detachment that is necessary for a certain universalization of singular experiences and non-experiences—an alienation even, where the highly personal becomes im-personal and capacious enough to welcome others.

In a sense, then, we are all in the same boat (here: in the same train) as far as the nuclear disaster and the ecological catastrophe are concerned. *The Chernobyl Herbarium* gathers all of us on its pages and screens: artists, thinkers, spectators, non-spectators, plants, all sentient beings, the rocks and the soil. It is a matter of gathering to mourn that which does not pass, that which refuses to be consigned to the past. Even if you are gathered in this gathering without having willed or known it.

...I know from which station I have departed, but which one will I arrive at?...

Linum usitatissimum, Rayogram on rag paper, 2018
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

Fragment 33 **Herbarium Trauma**

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Every collection accretes around a void it strives, in vain, to eclipse. For all the profusion of the collated or collected material stuff, there is an Eastern, undoubtedly Buddhist, bit at its centre: nothing. Dispersion predates and follows on the heels of selecting, assembling, and arranging an assortment of things. Why bother, then? Why compile that which comes from dust and is destined to entropy? –Because throbbing in the pincers of total closure and absolute openness is the possibility to make sense of the world. "Dust thou art and to dust shalt thou return," says the Bible. It passes in silence the intuition that in this interval between the anonymous infinities of dust you come together with yourself and with others. You slot another punctuation mark between two ellipses. A question?

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I am gathering my thoughts in preparation for archiving them on these pages. Do you see them displayed, dried up and ready for viewing? To appear in this minuscule metaherbarium, ideas had to be culled, detached from a non-existent plant. Perhaps from

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Only the dispersed may be collected—so as to disperse again. Gathering is a detour, more or less lengthy, more or less elaborate, from dispersion to dispersion, from dust to dust, which also keeps gathering. But how does what is not yet, or already not, dispersed disperse? At its rhythm, on its own time? Or is it helped along? There is a big difference between gathering fallen maple leaves in November (the month when I am presumably gathering my thoughts on gathering, though piling up questions is more like it; too late to harvest anything) and plucking wildflowers in June; between picking up fruit from an apple tree in late August and uprooting an entire lily of the valley plant in May. Generalized, the difference is between disrupting vegetal life at the peak of its vitality and keeping the elements of this life past their "due date," between destroying and preserving, decimating and saving, or, more precisely, destroying the chance for a being's self-preservation and preserving its self-destruction.

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Let us stay with the flowers for a moment, while they have not yet wilted and faded at least before our mind's eye. We say that we gather them when we irreparably cut their connection to the soil and the rest of the plant body we castrate. (It matters which flowers we are talking about, however. Those that blossom on a rosebush, for instance, turn such "castration," along with other pruning techniques, into a fertile source for future growth.) As if they were not gathered with themselves and as if their arrangement in a bouquet, a wreath, or on an herbarium page offered a better sense of togetherness. And, indeed, like other parts of plants, flowers are not gathered amongst themselves, or, if they are, then only loosely so! Violence against plants unfailingly finds justification in this or that feature of their being, their ontology propitious to the ethics of openness to the other as much as to the most brutal exploitation.

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"Herbarium Trauma" puts a couple nouns together, unmediated, unprotected from one another, gathered around nothing other than a typographic space

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Plants are foragers and collectors who do not hoard what they collect but let it go with and as parts of themselves. I am not referring just to accumulated solar energy and moisture. In Chernobyl's exclusion zone, trees raise radioactive particles from the ground and drop them back when their leaves change in anticipation of winter. Fall season is fallout time, all over again, the time for reliving-redying the trauma of the earth and of all it bears.

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Whenever you think you are cutting, culling, plucking, or otherwise gathering parts of plants, you are wrong; you are regathering, recutting… The gathering and the cut have happened outside the sphere of your memory, of your control, and you are repeating these acts of the plants that

Linum usitatissimum, Rayogram on rag paper, 2019
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

incessantly make and unmake themselves. You will have noticed that I am vegetalizing the structure of the trace, which is deeply traumatic. The illusion of control is like a collection that grows around the void in a futile effort to fill the abyss of the first unwilled cut.

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To gather is to adumbrate the distance between dispersed elements to the point where they enter each other's gravitational fields and the push-and-pull of a relation becomes palpable. To gather flowers is to pretend that, prior to falling into the gatherer's gravitational field, they are dispersed, inexpressive, nonrelational. And to gather the imprints of radioactive plants in an herbarium composed of their photograms? A blueprint for an answer: art is the make-belief that drops the pretence.

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From scientists to subsistence farmers, people who gather fruits and vegetables in Chernobyl's exclusion zone regather the vegetal gathering. Knowingly or not, the human gatherers also receive a bonus the plants growing there have incorporated, namely traces of radioactivity, the isotopes of Cs-134/137 or Sr-90. Plants absorb the trauma of the earth, their connection to the soil lingering on after the acts of culling, felling, picking their bodies made of everything they have imbibed. In the case of those consuming Chernobyl's produce, the eaten and the eater alike are the afterlives of radiation's half-lives. That is how we are gathered, brought together, but also plucked, in the planet's post-traumatic (the locution is a category mistake: we are still far from *post-* and, at any rate, it is uncertain that trauma admits an *after*) stress disorder. Being is being-gathered-with—not corralled together like a herd of animals, but cut with others like flowers, or, more precisely, corralled together insofar as cut-with

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Consider an analogy. From the Greek *legein*, the barely translatable word *logos* entails assembling, gathering, putting together, articulating. It, too, collects its semantic contents around an unbridgeable chasm, the silence no voice can ever drown. *Logos* responds, without quite corresponding to, the trauma of absolute dispersion. So long as it is alive, so long as its petrification is yet to come, *logos* is not an animal, as the ancients pictured it, but a plant, its nutrient uptake including the very dispersion it pushes against. It is a plant we cultivate in every stab at gathering or assembling. Not least in creating an herbarium, the re-regathering of plants subject to further cropping, clipping, and trimming so as to be displayed. (*N.B.* Ever a believer in wholeness, Rousseau was averse to standard herbarium procedures. Whenever possible, he tried to fit the entire bent and contorted plant, root and all, on the page.)

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"Among discrete quantities he discusses in his *Categories*, Aristotle somewhat surprisingly cites *logos*, its parts—the syllables—lacking a common limit, and so discontinuous with one another (4b, 34-6). That which establishes commonalities does not have contiguous borders between its components; it is internally fractured, bereft of the common, *koinon* (4b, 36-7). At this moment in Aristotle's text, speech is not the province of pure metaphysical presence. *Logos* proceeds at a halting rhythm, its syllables taken together disjointedly. If politics is an engagement in *logos*, its spatiotemporal work of gathering is, at its origin, scattered and disassembled, working against itself." [Michael Marder, *Political Categories*]

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Cut and paste, paste and paste, cut and cut and cut. To gather flowers is to gather the cuts, cut the cuts, cut and paste the cuts. Same with thoughts and citations. There it is—an anthology, the *logos* of collected texts and flowers.

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Post festum is the time of art, not just of (Hegelian) thought. Instead of culling, art gleans the leftovers of a harvest, or even gleans the gleaning, as Agnès Varda does in *Les glaneurs et la glaneuse* (2000). Anaïs Tondeur's *Chernobyl Herbarium* also arrives late in the aftermath of a dizzying array of gatherings and cuts: vegetal, historical, scientific… And yet, her work enables plants and their uptake of radiation to speak either bypassing *logos* or twisting *logos*'s assemblages into surprising

shapes. Their arrival ineluctably belated, the photograms peek at the primal scene of the "first" gathering and cut. They look trauma in the face, which is a surface, say, of a leaf. Or, more superficially still, they contend with the impressions of leaves on another surface, that of photosensitive paper. Traumatic depth lends itself to experience at the outermost limit, in surface-to-surface contact. And what are plants and art, if not tireless inventors and purveyors of surfaces?

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Assuming that the language of plants consists in an open-ended series of articulated shapes, we come to the conclusion that the cut of negativity is absent from vegetal being. This idea receives further reinforcement from the rootedness of plants in the earth, which provides them with a continuous stream of nourishment. So, where is the traumatic void, the disruptive nothing, in their unperturbed existence? –Everywhere. Because plant "organs" are not combined with each other in a totality, they are gathered together in a self-cleaving fashion: spatially and physically contiguous, yet metaphysically disjointed. Speaking in ontological terms, vegetation grows around and on nothing.

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The cast of Herbarium Trauma

- *Plants* – unending mute screams, rising skywards, expressing the ultimately inexpressible trauma of being itself
- *Herbaria* – silent howls frozen, suspended in time and space, cut off from lived durations and habitats
- *Radioactive herbaria* – wordless cries overlaid with a second layer of silence and invisibility, a trace of radiation uptake
- *The art of radioactive herbaria* – a resonance chamber for the reverberation of traumatic silences
- *Artists* – the space of the resonance chamber
- *Philosophers* – specks of dust, floating in space

…

Fragment 34 **Invisibilities, 1986 – 2020 –**

As we speak of invisibility, we render it visible through our words. We further speak of it as though it were a monolithic, homogeneous thing. But the first probing question to ask would be: Is there more than one invisibility? Try to imagine it. Lend it if not a certain form locked within recognizable outlines, then, at least, an atmospheric feel. Whose invisibility is it? What remains withdrawn from sight? A burglar waiting in the shadows? Political and economic backroom deals? Hidden cameras and digital surveillance? Radiation? Climate change? A virus?

Some kinds of invisibility are heavy with suspense concentrated in a single moment of time; others are weighing on us for long periods. Some are provisional; others are highly resistant to the possibility of emerging into a field of vision. Some only need to be exposed—in the media or by shining a small flashlight—to be brought out of their retreat; others require sophisticated tools, microscopes or Geiger counters, to register as images or as the more or less abstract measurements.

Radioactive fallouts and pandemics elude the sphere of our everyday experience, which they unsparingly break down and restructure. While their effects become visible after days, weeks (and, in the case of radiation, years) of delay, the cause itself is not given to sight. Responses to the threat they pose are, therefore, polarized: those who have their imaginations or abstract thinking honed may be prone to free-floating permanent anxiety, excessive worries and hypochondria; those who are used to rely on the empirical evidence of their senses alone may exhibit a lack of concern and even carelessness.

When, after the 1986 disaster, the need arose to put a face on the transnational threat of radioactive fallout, the Soviet regime was (in part, rightly) blamed for contributing to the event's nontransparency out of purely ideological motivations. With the suppression of initial medical reports on the novel coronavirus by the Chinese state apparatus in the end of 2019 and beginning of 2020, a similar situation developed. Mainstream media in the West called it China's "Chernobyl moment."[26] But when the epidemic spread to Europe and the Americas, the virus was figured otherwise—as an invisible enemy.

It is tempting, to be sure, to assuage our anxieties and to placate our fears of the unknown and the unseen by giving them a definite figuration, by tying them to a *this*, something that can be pointed out. The figure of an enemy usually does the trick: as it binds negative affect, hatred and animosity, to itself, it also helps consolidate a community of those fighting together against the threat it represents. Declarations of war against an invisible enemy, however, follow a logic of their own. Despite identifying the hostile force, they distend and ultimately wash away its outlines, leaving it indeterminate and potentially ever-present. Objectless anxiety persists with the added bonus of odium tucked into a general militaristic framework.

In this anniversary month of the nuclear disaster, when the pandemic is supposedly at its peak in Europe, forest fires have been ravaging Chernobyl's exclusion zone. With smoke and ash, radioactive elements are swept up from the ground, thrown into the atmosphere, and carried far from the site where dry leaves, branches and tree trunks have caught fire. (I am writing these lines on an Easter Sunday, a day that gives a peculiar twist to the rising of radiation's invisible body, a terrible, terrifying resurrection.)

Whether or not the fires raging in the vicinity of Chernobyl have been lit on purpose or whether they are due to an accident is beside the point. Assuming that desiccated wood went up in flames without direct human interference, the current blazes are traceable to the effects of the 1986 explosion and its aftermath that devastated microorganisms and other "decomposers" dwelling in the soil. Similarly futile are speculations, rife with conspiracy theories, about the deliberate fabrication of the new coronavirus or its inadvertent leaking from a research lab near Wuhan. If the "jump" of the virus from wild animals is due to the invasion of their habitats by humans, then the cause is still an anthropogenic one. The invisibility of cause-effect relations shadows, at every turn, that of radioactive contamination and that of the virus.

Linum usitatissimum, Rayogram on rag paper, 2020
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

To return to fire—a topic, which has been close to my heart for some time now and which envelops, in a sense, all things cardiac and cardinal—, we might say that, in it, visibility is embroiled with invisibility. Releasing light and heat, fire occludes its own source, shrouded in smoke. Its thermal power is, obviously, not handed over to sight but to touch, involving the entire dimension of our carnality. And its luminosity is uneven, the flames dancing and smoke simultaneously counteracting its action. Smoke is a trace of matter, of wood and of the woods that, sublime and sublimated, shoot up into the sky. Around Chernobyl, this elevated matter carries radioactive materials along. Invisibly, obscurely…

Fire spreads, as though by contagion: its tongues lick dry vegetal stuff that, so touched, joins the blaze. A spark jumps from one area to another, disregarding limits, boundaries, borders. A virus, too, grows like fire: with particularly contagious varieties, a viral spark reproduces rapidly, moving from host to host at the lightest of contacts. This Easter Sunday, Pope Francis spoke in an eerily empty St. Peter's Basilica of "a contagion of hope,"[27] the good news of the Gospels passing from heart to heart. So, in his annual *Urbi et Orbi* message, the Pope has joined a long-standing theological tradition that sees faith extending its reach by inflaming the souls of believers that act as immaterial wood for divine fire. The spiritual contagion of psychic interiority is more invisible yet than physical contagion: being touched in the core of one's being is inapparent in the world of the flesh, which, itself, appears in a different light and is swathed in different sort of heat emanating from that inner fire.

What does it mean to be—or to find myself, often in retrospect—in proximity to the invisible? Sometimes, invisibility is so close that it is inside myself (think of contagion, be it physical or spiritual). It shapes this self I call mine.

In the spring of 1986 I was, without knowing it, in proximity to the invisible fallout of the Chernobyl disaster. Thirty-four years later, just as unwittingly, I was at the site of the original COVID-19 outbreak in Vitoria-Gasteiz, Txagorritxu hospital. As forest fires around Chernobyl and the ongoing pandemic testify, such "accidental" proximities to the invisible (or, more precisely, to the invisibles) have an indefinite temporal structure: they come to our awareness in retrospect and surprise us in the future, when we would have thought that we had long overcome them.

Across a whole range of invisibilities, there is a sense that you are being watched, while not seeing who or what is watching you. The stare that targets you might be that of another human being (say, a burglar) or it might be the unblinking techno-gaze of cameras; it could be the other-than-human vigilance of a virus or the dispersed and anonymous regard of radiation or of a changing climate. Becoming the object of a gaze you cannot return, of a sense you are unable to sense, is a consequence of exposure and a premonition of your becoming-object, a body—living or dead, living and dead. It is learning to live in the face of death, and, hence, learning to think.

Fragment 35 **Nuclear mourning**

Like catastrophic global climate change, the nuclear age expands the circle of the "lost" objects to be mourned from the human to the microbial, to vegetal and animal ecosystems, clean water, soil and atmosphere, all the way to ideas and beliefs in personal and national safety, self-sufficiency, and sovereignty.

Still, nuclear materials and effects are unique: at the extreme, they annihilate time itself. Their interference with the heterogeneous temporalities of living beings, communities, and environmental forces is derivative with regard to their negation of time. For instance, depleted uranium has a half-life of 4.468 billion years, in the case of U-238, or 700 million years, in the case of U-235, which, to all intents and purposes, approaches an eternity.

Since the nuclear object does not pass away, refusing to become the past, it weighs heavily on the present it tears out of the order of time. With this, it is converted into a material embodiment of trauma, psychic as much as planetary, a statically traumatic present and presence that cannot be metabolized, "digested" so as to open up the future.

How does one mourn a loss that resists passing away, that repels the past and the future alike? Nuclear energy generation and the disasters associated with it, the liquid and solid residues of power plants' "successful operations," military testing of atomic weapons, and the consequences of their deployment confront us with an object of mourning that, due to its mode of being and temporality, thwarts mourning's work.

It seems that nuclear mourning is an oxymoron, and we are struck at an interminable stage of melancholia, perpetually reopening the wound and letting it swallow our psychic, social, and ecological energies. The theological and metaphysical dream of eternity, perversely realized in the nuclear age, turns out to be a horrible nightmare, which has perhaps been the dark, unconscious underside of that dream well before the twentieth and twenty-first centuries.

One should not give up in the face of the impossibility to mourn in the nuclear age, however. A lot rides on efforts geared toward a reinvention of mourning today. In a totality of the melancholic condition where the work of mourning is paralyzed, there is nothing but denial, which only deepens the traumatic wound. Melancholic denial can assume several forms, ranging from arguments that atomic power production is safe to stubborn insistence on secure borders for one's personal and national home that overlook the uncontainable consequences of fallouts, among other regional and even planetary disasters. Political inaction at best and entrenchment in the most harmful practices at worst are the symptoms of this denial.

Nuclear mourning begins from the depths of despair but it should not end there. It strives to reinvent mourning by shifting its object from the dead or destroyed other (whether human or not) to the death of death. Rotting and decomposition have always been the aspects of mortality facilitating future lives and the future of life itself. It is these processes that are interrupted by nuclear materials that resist decay, just as, on a different timescale, plastics, certain heavy metals, etc. clog the world and disturb planetary metabolism.

What we mourn, then, is the death of death, which is also a vigil for mourning, a kind of metamourning, a mourning of and for mourning. For, only having worked through *its* loss, having mourned mourning itself, will we stand a chance in the difficult task of existence and coexistence in the nuclear age.

A little absent-mindedly and at random, I crack open Nietzsche's unpublished fragments dating from the period of *Thus Spoke Zarathustra* (Summer 1882 – Winter 1883/84). There, Nietzsche writes: "Everything organic differs from the inorganic <in that> it *collects experiences*: and is never identical to itself in its processes." Collection, again. An archive, a herbarium, of experiences. Note that it is not only the human being, who is said to be such a collector, a spiritual honeybee, bringing back home (to the hive) the treasure-trove of experience, as Nietzsche puts it elsewhere. Rather, "everything organic" is both the collected and the collecting—everything, including, of course,

Linum usitatissimum, Rayogram on rag paper, 2021
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

plants who collect themselves, the experiences that they *are*, even in falling apart. The hubris of humanity, which at the same time throws us back to the inorganic side of the distinction Nietzsche operates with, lies in an attempt to appropriate this collection, to *have* experiences, and, by laying claim to them, to be "identical to itself in its processes."

Trauma sets an absolute limit to the appropriative drive, which aims not at this or that external object but at experience as such. It is a thing our psychophysical being collects without ever having whatever it has collected. In this bizarre situation, the collected has *us* firmly in its sway, thwarting the tendency to establish a self-identity. Does trauma recall us to our organicity? I would be the first to object to arguments revolving around trauma's redemptive undertones. And yet, does it, despite all the violence it inflicts on us, turn us away from that track of humanization, upon which we recapture the static nature of inorganic being by feigning self-identity?

It bears repeating what I have already noted, in other words, in earlier fragments: exposure to radiation was not (and is not) an experience to be collected. By any organic being, whether human or vegetal, animal, fungal, or microbial. One is collected to that exposure, instead. Or—another possibility—one collects it, precisely, as a non-experience, an unrepresented, unsensed, unfelt mark.

Fragment 36 **Trenches in Chernobyl**

All too often, contemporary events appear in ever-shifting configurations, as chance constellation of colorful shards in a kaleidoscope or in our newsfeeds. They seem to be entirely contingent, their amplification on the global scale dependent on how many people are paying attention to what is at any rate promoted by the digital platforms themselves. The vicissitudes of spotlighting various events are daily, if not hourly: something that was the focus of attention yesterday may be thoroughly forgotten already today. Victims of massacres and a wardrobe malfunction of a pop star are, shockingly, put on the same level of intense scrutiny and curiosity, attitudes that just as quickly fade or latch onto another object. As a result, vital issues are subject to persistent neutralization, insofar as they flash by before our eyes only to be displaced and buried under piles of trifling matters.

In my recent book *Dump Philosophy*,[28] I have treated these phenomena of the Information Age as part of a global dump, where all qualitative differences are erased and where the nihilistic attitude of generalized indifference rules the day, despite peaks of the usually superficial engagement. It is with the view to resisting the bulldozing forces of the global dump that patient reflection and careful philosophical analysis are needed, lingering with a singular event, being, or image. Plato's question throughout *The Republic* was: what could be saved from oblivion? Which tale, conveying crucial ideas such as justice, beauty, or the good, would be transmitted further to others and into the future? These questions are ours, too (perhaps even more so), in the twenty-first century.

Philosophy's engagement with contemporaneity cannot be reduced to something like the application of already existing theories or conceptual schemes to what is going on. Least of all when we find ourselves in the uncharted waters of catastrophic climate change, with ongoing processes sped up by the previously unforeseen mutual interactions among their cumulative effects. Our practical and theoretical relation to the classical elements—earth, water, air, and even fire—requires a thorough overhaul and reshaping, if we are to account for the deep changes they have undergone as a result of nuclear fallouts, massive industrial pollution, and contamination with nonbiodegradable materials.

The story I want to save on these pages is that of the trenches, which Russian troops dug up in Chernobyl's exclusion zone early on in their brutal assault on neighboring Ukraine. Trenches in Chernobyl may appear as one of those peculiar shards that kaleidoscopically and only momentarily make up the category of "current events." Still, it is imperative to think through the absurdity, the staying power, and the subterranean connections linking this ostensibly fleeting event of a military disaster to the technogenic catastrophe that took place in Chernobyl thirty-six years prior. Despite the relatively quick withdrawal of the occupying forces, this story (which is more than a "news story") is far from irrelevant; should we look a little closer, we would espy in it a strange condensation of everything that went wrong, and continues to go wrong, at the site of the nuclear accident, which, in its turn, condenses the devastating modes of thinking and acting that continue to steer the world toward an unmitigated global disaster.

They departed in a hurry, suddenly, unannounced. Fleeing. Leaving behind a terrible mess and the already mutilated earth further scarred with the broken lines of trenches, dugouts, fortifications, and other military structures that cut into the forest floor, its topsoil and subsoil. Having been wounded back by the wounded earth. Having plundered and wreaked havoc in people's homes and in the improvised "command center" and "military quarters" installed there where *command* and *control* no longer make sense.

I am referring to the retreat of the Russian troops from Chernobyl on the last day of March 2022, just five weeks after the area had been occupied. This surreal set of circumstances is far from idiosyncratic. Everything that concerns Chernobyl—the name of the place long since synonymous with the event—is part of a miniature postapocalyptic laboratory for imagining "the world without us," a global future where there is no place for human beings. Such a future may be bemoaned or, with a good measure of misanthropy, celebrated: finally, the earth will have been cured of humans, who cancer-like bit into and eroded its climates and ecosystems.

Irradiated soil, Rayogram on rag paper, 2022
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

From all sides, the east as well as the west, the ideological investment into presenting Chernobyl as a nuclear phoenix who comes back to life from the ashes of fallout has been tremendous. A repressed trauma of planetary proportions, it took about one generation for the narrative to shift, for tourism and agricultural development to flourish there, and a little less than two generations for the exclusion zone to be converted into a military theatre. Yet, the repressed implacably returns, even if (especially if) in its comebacks it sidesteps conscious representation and imprints itself directly onto the flesh, onto sentient and exposed bodies. This is what the frenzied abandonment of Chernobyl, the site of the absolute abandonment, by the Russians signified: we, those living in the twenty-first century, cannot decide in a sovereign and arbitrary fashion on the habitability and usability of a place, a region, even the entire planet. Such a decision is made by that place itself, or, more exactly, by whether or not it can still be a place *for* the human and other-than-human populations it welcomed in the past.

What is the meaning of "occupying" a site in a physical or, worse yet, military mode of occupation, when it does not admit anyone into its midst?

February 24, 2022. Under leaden-gray wintery sky, a column of tanks and armored vehicles carrying a thousand Russian servicemen crossed the Belorussian-Ukrainian border and rapidly moved further south, toward the town of Pripyat' and the Chernobyl nuclear power plant. Kicking up radioactive dust, heavy military equipment and its crew rolled along the most contaminated area, that of the Red Forest. No precautions were taken to keep the soldiers safe: they wore no protective gear, which would have prevented them from being outwardly exposed to and from inhaling radioactive particles, the timeless remainder of the 1986 nuclear accident that destroyed the plant's Reactor No. 4 and released tons of contaminated debris into the atmosphere.

On day one of Russia's full-scale invasion of Ukraine, Chernobyl was the very first territory "taken" in the still ongoing war. As if a nuclear disaster site can be seized—as if it does not seize whomever and whatever is in its vicinity in advance, dictating its own rules of a deadly game. The occupying powers will discover the limits of mastery and of habitability the hard way, once they start experiencing the unmistakable symptoms of radiation sickness. But, for now, they are exhilarated with an easy victory, having negotiated the surrender of dozens of Ukrainian national guards and of the workers who maintain the nuclear power plant. And, just as they are settling into the place, or the non-place, that will not be fit for human habitation for at least another 20,000 years, Russian soldiers are busy with an absurd task: digging trenches in Chernobyl.

Why trenches in Chernobyl? Within the twisted logic of Putin's war, the strategic rationale was evident. The exclusion zone, in particular the territories adjacent to the exploded reactor, were to become staging grounds for attacks that would be invulnerable to Ukrainian counterattacks: who, after all, would return artillery or any other sorts of fire emanating from there? More or less the same reasoning organizes reckless military activities around the Zaporizhzhia nuclear power plant, the largest of its kind in Europe. What the generals of the invading army did not count on was a mutation in the structures and processes of geopolitics that, akin to other mutations provoked by radiation exposure in generations of the living, raze tactical planning to the ground, leaving it in ruins. Saturated with radio*active* elements, the earth, which Russian soldiers treaded and excavated, acquired an uncanny agency: it dictated the course of events, shifting frontlines, expelling or repelling those who dug into it, letting win or making lose. Although the terrain with its uneven texture and accessibility always determines (or, at a minimum, co-determines) political borders and the outcomes of battles, in Chernobyl this determination reached its peak intensity. Henceforth, we will need to understand geopolitics in a literal key, as the politics of the earth itself, the *nomos* not imposed upon but flourishing from the earth (*gē*, *terra*), irreducible to territories and domains, real estate plots or regions of a state.

Trench warfare is the hallmark of World War I with its stalemates of artillery cross-fire. It persists in World War II, but loses effectiveness due to aerial bombardments, among other kinds of new

lethal technologies and modes of combat. Digging trenches at a nuclear accident site is more anachronistic still. Various temporalities get scrambled in Chernobyl, starting on that fateful February day: a symbol of warfare from the beginning of the twentieth century, nineteenth-century imperial ambitions, the nearly atemporal effects of radioactive materials, and twenty-first-century live combat. Historical derangement, history itself in the shape of the deranged swell of a single disaster, as Walter Benjamin has it, manifested itself in a flash in this deadly convergence of disparate temporalities. Like a Russian doll, madness was ensconced within madness: digging trenches in radioactive soil within Putin's claim that a country with a 44,000,000-strong population and internationally recognized borders did not exist within the making-Russia-great-again refrain within a total lack of concern for environmental and human casualties of imperial hubris within …

Entrenchment is stubbornness raised to the *nth* degree, leaving a foredoomed confrontation as the only plausible option. In no small measure it stems from the refusal to listen to any other arguments, not least those raised mutely but all the more palpably by the earth itself—by the planet and the soil alike. Lest we harbor any illusions, it is not unique to the ruthless war Putin's Russia is waging on Ukrainian soil; rather, the madness of entrenchment is engrained in the techno-scientific framework that is responsible for the development of the "peaceful" as much as the "military" atom and, deeper yet, in the dominant and domineering relation to the earth. Even as the climate breakdown is upon us, we witness all around us suicidal attachment to the old destructive modes of thinking and technologies, often in the guise of a green energy transition and other reassuring discursive tricks. Despite evacuation orders issued by Soviet authorities a day and a half after the Chernobyl nuclear disaster, we are yet to leave Chernobyl—or everything that it stands for as a culmination of Western metaphysics, its theoretico-practical notion of energy, of subjectivity and objectivity, of matter, of the earth. The entire humankind is entrenched there in the double bind of the absolute necessity and the perceived impossibility of leaving it.

The trenches of Chernobyl are not only physical, but also metaphysical. They are the effects of metaphysics and its relation to matter, to the earth, to the physicality of existence. In a shorthand, these other trenches can be designated as follows.

Trench #1: Energy.

Trench #2: Elemental dominion, esp. geo- and climate engineering.

Trench #3: Environmental separation (self-subtraction from the environment)

Trench #4: Extraction.

The four vectors of entrenchment are most acutely felt in Chernobyl's amplification of the planetary disaster. They are, of course, vectors that precede the "event" of Chernobyl and that continue their movement largely unperturbed after this "event." At many points, the entrenchments intersect and reinforce each another:

-energy – extraction. Our unquenchable search for energy splits the atom, getting a hold of, appropriating for but an instant, the potentialities it contains in the process of nuclear fission. The extractive-destructive energy paradigm is not limited to burning fossil fuel; what it wrests from things is their potential at the expense of their physical integrity and actuality. Official consideration of nuclear energy as "green" fails to notice how our thinking and practices get caught in the nets of this harmful paradigm.

-elemental dominion – environmental separation. A nonnegotiable precondition for the illusion that we can manipulate the elements and the climates that envelop us is our sense of separation from the environment. It is then that the earth and the air, the solar blaze and the oceans, present themselves in our distorted optics as objects of a planned alteration and control. In the long term, the "enhancement" of topsoils or their cleanup in the case of radioactive contamination impoverishes them and contributes to a further spread of radioactivity, aggravating the very problem to which these were meant to be the solutions.

-energy – elemental dominion. Rather than work with the elements in a synergy that would gift us with nondestructive energy (elemental; not simply renewable), we approach it as a resource to be appropriated within the scheme of our elemental dominion. A scarce resource, subject to contested

claims, that energy which does not germinate in synergy sparks wars, due to the objectification of its sources.

-environmental separation – extraction. Our feigned separation from the world is the first extraction—the degree zero of extraction, one might say—constituting our self-subtraction from the living and livable environment. This subtractive extraction portends death, if not suicide: collective or species-wide. All subsequent extractive operations repeat with regard to the elemental sphere the first self-extraction of the human from the environment.

-energy – environmental separation. The energy drawn from our separation from the world and from the ensuing oppositional stance, in which the world is reduced to an object (particularly, the object of appropriation), is the energy of negativity. It invariably operates with the *minus sign*: scarcity, crises, a struggle over dwindling resources, the devastation of beings in their physical integrity. The practice of procuring and utilizing such energy is imbued with negativity and projects our separation from the world onto the world at large. Henceforth, the environment comes unglued from itself, fragmented into bits that are grasped as resource-laden objects and that are, therefore, already dead or deadened.

-extraction – elemental dominion. Extraction is the logical consequence of elemental dominion: we take what we deem to be properly ours, as the unquestionable owners of the globe, of its surface and depths alike. But what exactly is it that "we" do? When it comes to fossil fuels, mined and burnt, we throw massive portions of geological strata up into the atmosphere, wreaking havoc in the world of the elements. By breaking the atom to extract energy from its core, we do not get hold of anything, except for radioactive waste, which gets a hold of us, posing the dilemma of storage over time spans of thousands of years. Elemental dominion does not translate into anything securely maintained, guarded as property, as a rightful possession. Instead, it justifies the ever-growing unleashing of negativity, of the power of the negative, which masquerading as the only possible source of energy, annuls a livable world and ourselves in it.

In *Voices from Chernobyl*, Svetlana Alexievich chronicles, among other things, through her conversations with survivors, how they were engaged in the "new human inhuman task" of burying contaminated topsoil deeper in the earth or entombing it under concrete. A teacher relates to Alexievich that, in early June 1986, "the director of the school suddenly gathers us and announces, 'Tomorrow, everyone, bring your shovels with you.' It turns out we're supposed to take off the top, contaminated layer of soil from around the school, and later on soldiers will come and pave it."[29] A "liquidator," one of the hundreds of thousands of people moved to the vicinities of Chernobyl from all over the Soviet Union in order to mitigate the effects of the disaster, confirms this narrative: "I saw a man who watched his house get buried. [*Stops.*] We buried houses, wells, trees. We buried the earth. We'd cut things down, roll them up into big plastic sheets… I told you, nothing heroic here.[30]" He continues: "We buried earth in the earth. With the bugs, spiders, leeches. With that separate people. That world. That's my most powerful impression of that place—those bugs."[31]

As a result of the Chernobyl disaster, the earth became a grave for the earth, the soil buried further down in the soil. Digging up trenches in that place, or non-place, is unburying the earth, which is tantamount to unburying the undead in light of the undiminishing effects of the radioactive particles, with which the soil of Chernobyl is laced. The trenches, dug in the earth that used to serve as a grave for earth, are also graves—in the first instance, for their diggers. Although this activity undoes the one initiated in the early post-disaster days, it is equally absurd and deleterious for those engaged in it. Disturbing and inhaling radioactive dust, the diggers follow an injunction that remains oblivious to the earth in its elemental character (further magnified by radioactivity) which cannot be dominated or controlled, notwithstanding our illusions about terraforming or geoengineering. But it is by means of their attempted domination of the earth that the trench-grave diggers of 2022 try to dominate others, including militarily.

In its strategizing, both military and civilian leadership outmaneuvers itself. Trenches in Chernobyl make this painfully clear: they do not pit safety against danger, but safety against safety

or the acknowledged danger of war against the unacknowledged danger of exposure to life-threatening levels of radiation. By creating bunkers and dugouts in the exclusion zone the troops are presumably protected from enemy fire, but they are exposed to the invisible enemy—the radioactive particles they inhale and ingest. By using the vicinity of nuclear facilities, in Chernobyl or more recently in Zaporizhzhia, as a military theater of attacks precluding counteracts, regimen commanders and those higher up in the army ranks play with fire, in the most literal sense of the expression. By relying on "nonpolluting" atomic energy, economic and political leaders ignore the dangers inherent in the virtually limitless storage time spans of spent fuel rods and of catastrophic reactor meltdowns as a result of natural disasters, cuts in electrical supply, or military activities.

Why do we find such short-sightedness in the midst of an addiction to strategies and calculations, game theories and algorithmic simulations? On the political side of things, democratic and authoritarian regimes are in a remarkable syntony: the former blind to lasting consequences of decisions due to the four-to-six-year electoral cycles; the latter due to the dictators' egotism and their desire to stay in power at any price. On the side of pure strategy, a vast blind spot develops when one puts one's total faith into calculations that, by definition, cannot deal with the incalculable: history-defying lengths of time, irreversible damage to ecosystems and their inhabitants, and the like. Within the framework of folk psychology, radiation's invisibility and its inaccessibility to all the other human senses unassisted by special measuring devices, such as Geiger counters, accounts for the ease of forgetting all about it and for letting it drop, if temporarily only, from the field of our concerns and calculations.

Without a doubt, in addition to the three I've just cited, there other mutually reinforcing causes for the short-sightedness of military and civilian strategies, as far as radioactivity is concerned. The outcome remains unchanged, however: excessive radiation does not go anywhere, no matter how much we ignore it. Like trauma (or *as* trauma: the reiteration of the word in the lines of my text is itself symptomatic) it persists behind all the perceptual, political, calculative, and other façades that occlude it from us. But, in the strongest rebuke to idealism and its commonsense variations, the trauma of radioactivity does not stay neatly contained behind physical and psychic walls; it breaks through each and every barrier. Then, previously drawn up plans suddenly change: human settlements in the fallout zone are evacuated and armed forces retreat from occupied territories. Entrenchment has externally imposed spatiotemporal limits. Sooner or later, the place of refuge that trenches seem to provide starts exuding what Kant once called the perpetual peace of cemeteries.

On the run from Chernobyl's exclusion zone, Russian troops left behind many of the items they had stolen from Ukrainian population. According to one report, "in a bizarre final sign of the unit's misadventures, Ukrainian soldiers found discarded appliances and electronics on roads in the Chernobyl zone. These were apparently looted from towns deeper inside Ukraine and cast off for unclear reasons in the final retreat. Reporters found one washing machine on a road shoulder just outside the town of Chernobyl." Come think of it, the roadside discovery of looted and abandoned appliances is not so bizarre, because the return of the radioactive repressed happens through anything that is exposed to high doses of radiation long enough, including pillaged goods. It is likely that, after five weeks in Chernobyl, the stolen appliances triggered alarms on Geiger counters. Once these measurements were performed on the soldiers' clothes, food, and belongings (including the stolen ones), they were promptly discarded. The temporarily challenged supremacy of abandonment is restored.

What is abandonment, though? How does it work? Above all, how does it work *against* our conscious and unconscious tendencies toward entrenchment?

In 1986, Chernobyl was abandoned, as it will be again, albeit in very different circumstances, in 2022. What is happening (or, on the contrary, has ceased happening) there seems too obvious to state: Chernobyl's previously utilized sites and inhabited places have been deserted by human beings. But a lot more is going on beneath the veneer of obviousness. *Before* abandoning the no longer livable parts of the world, human beings are constituted in their very being by abandonment. Martin Heidegger raises a poignant question regarding this constitutive abandonment: "What is it

that so radically deprives Dasein of the possibility of misunderstanding itself by any sort of alibi and failing to recognize itself, if not the forsakenness [*Verlassenheit*] with which it has been abandoned [*überlassen, Überlassenheit*] to itself?"[32] Our abandonment to ourselves makes us who we are, because in this condition we are confronted with mortality not as an abstract idea, not as one vague possibility of many, but as our impending death.

The lucidity, with which I face myself as mortal, radically individuates me, Heidegger argues. Now, since human existence, or Dasein, is not really separate from its world, doesn't the same terrifying clarity arise when we find ourselves face-to-face with the demise of that world? Should we not recognize *ourselves*, the future corpses our bodies will become, in the mutilated remains and the ruins of abandoned techno-sites, towns, and their infrastructural accoutrements? This is, in fact, the realization that we come to *after* the physical evacuation of disaster zones or contaminated areas. In addition to being abandoned to ourselves, according to Heidegger, human existence is abandoned "to a 'world' of which it never becomes master."[33] The limits of mastery are delineated by the unruly effects of technology that leads a life of its own outside the parameters that its inventors or users have set for it. Contemporary ruins are the material traces of that limitation, which double our constitutive abandonment: to ourselves and to the ultimately uncontrollable world.

There is, also, a third kind of abandonment in Heidegger's work—the most difficult but also the most relevant of all. As he puts it on May 8, 1945: "The being of an age of devastation would […] consist precisely in the abandonment of being."[34] The abandonment of being does not let beings be; the devastation in which this abandonment takes its place, or non-place, is a nod of consent to the sweeping power of nothingness, a nullification that is worse than destruction, from which a new life, a new growth, a new vitality, however tentative and fragile, might have sprouted.

Currently, a multipronged battle is being waged not only over territories and their political or military control but also over the meaning of abandonment, or, more accurately, over its semantic frame in the environmental context: devastation or destruction? Is the massive damage done to ecosystems, biodiversity, breathable air, water, and soil a destructive prelude to renewed vitality? Or does it signal a devastating self-negation of the human, of its world, and of worlds that are not and have never been within the scope of our power and control?

There is little, if any, coincidence between the two battles on the political-military and the ideological fronts. Although the safety of the nuclear site is of vital interest for the Ukrainian people—the interest that is being exploited as part of nuclear terrorism by the Russian regime in other locations, such as the Zaporizhzhia nuclear plant—prior to the war Zelensky's government related to the exclusion zone out purely out of economic considerations. So, in 2019, Chernobyl was to be "rebranded" as a safe tourist site. Nevertheless, in the lightning-fast Russian occupation of, entrenchment in, and withdrawal from Chernobyl the normalizing logic and its accompanying repression were illuminated both with respect to their workings and their spectacular failure. Trenches in Chernobyl have provided a crucial answer to the question of abandonment. The question is whether we will listen to and remember this answer.

Fragment 37 **Dark Depths**

– Dark depths. You are bearing them in yourself, *as* yourself: your viscera and the unconscious portions of the psyche, each in its own way impenetrable, dense, unknown and unknowable.

– Material beings are received into a world of matter and take matter into themselves. Also (perhaps especially) before birth and after death. Plotinus: "the depth [*bathos*] of every individual thing is matter: so, all matter is dark [*skoteinê*]" (*En.* II.4.5.9).

– You must go further. You are received into dark depths and take these depths in. That is the soil, wherein you are rooted and the soil you contain, a plantlike existence hinging on your material nature. Uproot a plant and, unless it is transplanted elsewhere, it will perish. Enlighten dark depths, and a material being will be destroyed.

– I repeat after Plotinus: all matter is dark, not just the matter that contemporary physics "discovers" as neither absorbing, nor reflecting, nor emitting electromagnetic radiation. The most radiant of matters is, in turn, the most dangerous, explosive, unstable, namely ionizing radiation. It throws a challenge to dark depths, from the initial moment of exposure (whether external or internal: this difference is annihilated by exposure itself) to the havoc that high doses of absorbed radiation wreak in body tissues. *Via negativa*, it proves the Plotinian axiom: to illuminate and elucidate without remainder is to dematerialize, to idealize, to transform that which is so illuminated into an object of the ever-vigilant gaze of spirit. In a word, to deaden.

– The archives of exposure are stamped onto the dark depths that you are. X-rays and ultrasound waves lift the curtain for a brief moment. Other sorts of ionizing radiation exposure carry out this lethal work to the end. The stamp does not remain impressed on your surface, respecting the dense obscurity that lies underneath. It is absorbed; it penetrates the otherwise impenetrable, irradiating matter from within. At sites of nuclear accidents, bodies and buildings, the soil and water, are irradiated; places are irradiated, denucleated, dematerialized. In order to stay alive (for places, too, live and die), a place must contain a mix of dark depths and luminous surfaces in what the ancients liked to call "the right proportion."

– Yes! A totally luminous environment inundated by relentless light, akin to the Platonic sun, is unlivable. I have long argued that Plato's allegory of the cave is not about detachment from the intimate shadows of the cavernous dwelling. It is not a transposition of the mammalian birth onto a psychic or spiritual birth. Obscurely, materially, symbolically, it deals with a partial emergence into the light. Germination. Plantlike, once again. On the pretext of feeling the obligation to lead the others up to sun-drenched expanses, the philosopher who has ventured alone to come out of the cave, turns back, returns to show the way and to show respect to the circular, bipolar, chthonic and celestial character of finite existence.

– Chernobyl drags you into merciless light, the light that is indistinguishable from absolute darkness shorn of life-giving depths. Its irradiation spreads—ideologically, above all—in an attempt to encompass everything. In the full-scale war Russia has been waging against Ukraine for over a year now, you hear from both sides: "We are fighting on the side of light against the forces of darkness." Such statements sound particularly cynical and perverse when uttered by invaders, but they are not unproblematic regardless of who it is that voices them. More recently processed by Hollywood's cinematic machinery, the eschatological struggle of light against darkness is brimming with much older Gnostic overtones, where it stands for an epic confrontation of spirit and matter. As light, pure spirit separates from matter (with its obscurity, density, and impenetrability) and attempts to defeat its dark depths as the embodiment of fallenness, of sin, of the flesh of this world here-below.

– I get it. Whatever the intention, to be on the side of light is to assume a world-destructive stance—maximalist, purely idealist, deadly. The dark depths of matter need not be opposed; instead, they need to be embraced within us, even as they keep us in their tight embrace.

Craterellus cornucopioides, Rayogram on rag paper, 2023
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.9 microsieverts/h

– And don't forget the light of science, the direct legatee of European Enlightenment. What has it illuminated recently? A study of feral dogs from Chernobyl's exclusion zone has concluded that these animals are evolving faster than similar dogs from elsewhere. So, now the contemporary torchbearers of sterile light are labeling the accumulated mutations provoked by high doses of ionizing radiation "evolution." Why? Because evolution sounds positive, unlike the mutations that produce monstrosities and oncological disease. Because a nuclear disaster can be reframed as a catalyst of development, rather than a planetary tragedy.

– I've read the reports you mention. They point to at least ten significant genetic differences between the dogs of Chernobyl and other canines. But what about the environment, the fittingness understood as the dynamic and mutual adjustment of the living and their habitats, which is the ignored sense of "the survival of the fittest"? The study *extracts* the dogs from their environment, in addition to extracting genetic information from its subjects. As a result, the place or the non-place that is the exclusion zone is rendered *abstract*, a possible cause of fast-paced evolution. We are in the presence of a light that blinds, the light of uprooted knowledge itself mutating into sheer ignorance.

– You have never been further away from dark depths, and you have never been closer to them—so close, in fact, that their hot breath is already scorching you. On the inside and outside. The play of lights and shadows, of surface and depth, has stalled. The wandering rays of sensible, meaningful light dwindle, precisely when it seems that everything is illuminated, when nothing escapes the unblinking techno-gaze of Gnostic spirit, of the materialized de-materializer. This total illumination is irradiation, the exposure to and absorption of radionuclide-laced elements and ideologies in your teeth and dreams and bones and thoughts. Are we—you and I—one of the countless mutations it triggers? Remains to be seen на дотик, на ощупь, by touch.

Fragment 38 **Mushrooming metaphysical derangements**

Before reading Anna Tsing's *The Mushroom at the End of the World*, I had wrongly supposed, based on its title, that the book would be about nuclear apocalypse. The mushroom cloud is the most recognizable visual aftereffect of the explosion of an atomic bomb, an atmospheric "mushroom" cropping up at the end of the world. Tsing, for her part, proposes to "follow mushrooms" (above all, her beloved matsutake) in their excessive and sudden emergence. It is this same variety that she mentions in close proximity to the event of Hiroshima, albeit never with respect to the shape looming on the horizon at the site of the explosion: "When Hiroshima was destroyed by an atomic bomb in 1945, it is said, the first living thing to emerge from the blasted landscape was a matsutake mushroom."[35]

The glaring lacuna in Tsing's text is itself generative: it may prompt us to follow mushrooms further than initially intended—from the moist and warm earth teeming with matsutake to the sky; from a biological kingdom to a disturbing human invention; from symbiotic attachments to explosive detachments, including at the level of atoms.

The similarities of shape between a fruiting fungus and a cloud whipped by the explosion of an atomic bomb are highly significant. They foretell the new and terrifying correlations between the microcosm and the macrocosm, supplanting those that the ancients identified (e.g., the whole world is a plant, the sun is a shining eye of a god, and so on). Today, a mushroom is not "the whole world"; it is, rather, "the end of the world," or a phenomenon *at* one of its ends, spatially and temporally. Just as mushrooms appear swiftly and abundantly when the conditions for their growth are auspicious, so a wide range of the ends of the world awaits, eluding predictability and other mechanisms of control. These oscillate between the extremes of global warming and nuclear holocaust, the gradual erosion of the pillars sustaining a livable planet and a rapid conflagration of terrestrial existence. By the same token, abject poverty, genocides, local ecocides, mass species and language extinctions are the grim reminders of the past and current ends of worlds.

Beyond the similarities of shape and the time sequences binding an atomic mushroom cloud and biological mushrooms together, there is also the high concentration of radioactive isotopes, such as caesium-137, in specimens growing at the sites of nuclear catastrophes and atomic explosions.[36] In the years after the Chernobyl disaster, people throughout Northern and Central Europe were discouraged from consuming mushrooms due to their radioactive contents. Post-disaster, a mushroom incorporates radiation and lends continuance to a presumably ephemeral atmospheric shape of a cloud. The relations of resemblance are inverted: if visually a mushroom cloud resembles a growing mushroom, a fungus fruiting in the irradiated soil is this cloud thickened and miniaturized. The real is a shadow of a shadow—which does not pass.

In 2024, Anaïs Tondeur adds a new photogram to *The Chernobyl Herbarium*. This time it is a photogram of *Coprinopsis atramentaria*, or the common ink cup, a mushroom from the exclusion zone. "An herbarium is no place for mushrooms," you might object. "They do not even belong in the same biological kingdom as plants." In the region of the roots, though, mycorrhizal connections blur the boundaries of classification systems, inasmuch as plants and fungi coexist in a symbiosis, integrated with one another in their cellular architecture. Could an herbarium become a place of such cross-kingdoms symbioses, a reflection of what's going on at the level of the roots, of mycorrhiza or mycelia, in the obscurity of the soil?

The photogram of the common ink cup upends the spatial relation between darkness and light: the mushroom fruits from a flaming bottom part of the artwork to the night of the world above. To be precise, we are not facing a clear-cut division in the space of the photogram: the flame rises up on the left, its tongues erupting against the background and reaching all the way to the top corner. The dynamism of the image gives the viewer a sense of a sweeping movement, a raging fire that, though it has not yet consumed everything, is on the verge of swallowing up whatever is in the field of vision. *Coprinopsis atramentaria* itself comes into view not only as a representative of the Kingdom Fungi but also, and especially, as yet another tongue of the flame, an individuation of the intense glow that

Coprinopsis atramentaria, Rayogram on rag paper, 2024
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.9 microsieverts/h

seems to emanate from the underground region of the mycelium and to shoot up to the starry sky, with radioactive constellations dotting impenetrable darkness. Its stipe merges with the light below, coming out of indeterminacy, a blur in which spatial lines melt as effectively as the boundaries of classification systems. But, as the viewer's gaze accompanies the ascent of the stipe all the way up to the cap, the lines start exhibiting definitiveness and depth, with the cap gaining volume within its stark outlines. What's going on here?

Gazing from below and following the mushroom's fruiting body up to the cap is adopting a material perspective, revisiting the mushroom's own growth now in a visual thrust. Concrete determinations—the outlines, veins, curves, folds, plicate margins, undulating lines, false gills—are born from indeterminacy, and they return to it in a scintillating moment that is a life, congealing from the flux of life. This indeterminacy envelops and overshadows every determination silently asserted against it. We could even say that it surreptitiously *determines* these determinations. At the same time, the mushroom's growth is not, strictly speaking, its own; its body gives a shape to and momentarily determines the radioactivity, with which the ground that hosts its mycelium is suffused.

So expressed, the background of indeterminacy is twofold: life and radiation. Everything that has been noted about life may be attributed to radiation as well, which envelops and overshadows every determination, underpinning it at the beginning and ready to receive it back at the end. It would be incorrect to restrict this force to radioactive isotopes alone, however. Solar radiation, for instance, is life- and light-giving to the brim and, indeed, over the brim, in a signature excess as promising as it is dangerous. It is this excess that mushrooms celebrate.

Metaphysical derangements are evident there where, aside from the feared future lack of finite resources, the existing excess is deemed to be insufficient. The too-much of the sun—the epicenter of metaphysics at least since Plato and the Egyptian antiquity before him—is not-enough. As a result, the sun is double: a hot star at heart of the solar system and the sun of ideas shedding the light of knowledge. It is a doubling that erases another, prior (though the term "prior" might not be appropriate) doubling, the sun's non-identity to itself in the order of time, given the delay in the arrival of its rays, for instance on the surface of the earth. The structure of the complex phenomenon we are dealing with becomes clearer: one excess against another, one doubling against another, eclipsing the first.

Welling over material excess and demanding its absolute subjugation, hyper-excess suffuses and instigates metaphysical derangements. This paradoxical "excess over excess" flips into its opposite, namely the fetish of rigid identities, separated from other such identities and equivalent to themselves alone. Plants and mushrooms, vegetal-fungal symbioses, growth and decay, existence, time, ecstatic being—all these become unthinkable and, therefore, unacceptable on the newly fashioned foundations of the metaphysical hyper-excess. Whatever is grasped of them must fit within inflexible metaphysical molds, where such entities or non-entities lose their inherent sense. The desire for the purity of body politic is instigated by the same dynamics, culminating in ethnic cleansing and genocides. A certain kind of theology and a certain kind of philosophy are accomplices in such crimes against existence. Science and technology are often their means of actualization, the organs through which they put themselves to work. Radioactive isotopes, strewn across ecosystems, and mass graves, sometimes unmarked and as undetectable as radiation, are their invisible trails.

The hyper-excess of metaphysics is bent on forging out of the anarchic proliferations of the many a One, ultimately indistinguishable from None. Contrary to the prevailing assumption, which regards a totalizing fusion as the engine of this gathering, it is accomplished by way of splitting (even the atom), a fission that sets everything against itself and, thereby, against the entire world. Metaphysical derangements are lopsidedly analytical, not synthetic, which is also why they are of a piece with the implacable procedures of instrumental rationality and its contemporary algorithmic tentacles. The only synthesis possible is a conjunction of analyses, implying the disintegration of social bonds (or, what amounts to the same thing, their amassing online in millions of followers), the fraying of the fabrics of meaning and sense, the impenetrable nature of historical continuities, as well as purely formal assertions about ecological embeddedness and the overcoming of the mind-body split.

Our energy-procuring practices and wars belong on the same metaphysical plane of a merciless analysis, breakdown, and the unquenchable desire to appropriate excess, to lay claim to its very excessiveness. As a master explanation for this conduct, economy is sorely inadequate: incorporated into the unquestioned domain of common sense, metaphysical derangements steer the extractive-destructive approach to the world, to others, and to ourselves. Plants and mushrooms—their symbioses and boisterous, uncontrollable, at times unpredictable growth—are the living rejoinders to this approach, whereas nuclear energy derived from atomic fission—more and more frequently presented as a "green" alternative to fossil fuels—is its apotheosis.

Let's go back to the *Coprinopsis atramentaria* in Anaïs Tondeur's most recent photogram. Like energy-mass conglomerations that bend spacetime with their gravitational field, the curving fruiting body of the mushroom orchestrates what happens and what does not happen around it. Unless it is the figure of the mushroom that shoots from the background flames as one its tongues. The phallic connotations of fire and of the mushroom itself reinforce one another at the limits of symbolism. Engulfed by the flames—especially by the eternal, undying or undead fire of radiation, which also emanates from it—the common ink cap mushroom is being devoured by them, even as it freezes this process, suspending it just as it suspends the order of time.

Mushrooming metaphysical derangements, in their turn, are the disorders of time, of its generative, transformative, putrefactive trajectories. More than the end of the world, they signal the end of the end, which may not be synonymous with a new beginning. The world and time are, indeed, twin concepts (another doubling!): the end of the one is the end of the other. The mushroom at the end of the world coexists in uncanny symbiosis with the plant at the end of time. An invisible radioactive glow, morphing into fire at the hands of an artist, envelops both.

Fragment 39 **Vegetal redemption: of flora, dark and light**

More than three years have passed since Russia's brutal full-scale invasion of Ukraine in February 2022. Thirty-nine since the explosion of Reactor 4 at the Chernobyl Nuclear Power Plant. Among the many poignant, heartrending images and events of the last three years, the one that stands out and keeps haunting me happened in the very first days of the war. I wrote about it back then; my text was translated into Ukrainian and Russian, among other languages, and it earned me a continuous stream of death wishes (themselves dressed up in lush vegetal imagery) in private messages and in Russia's public philosophical forums. Now is a good moment to recall and to expand on those raw reflections, without, however, giving up on their visceral sense that touches upon the viscera of contemporary life and thought.

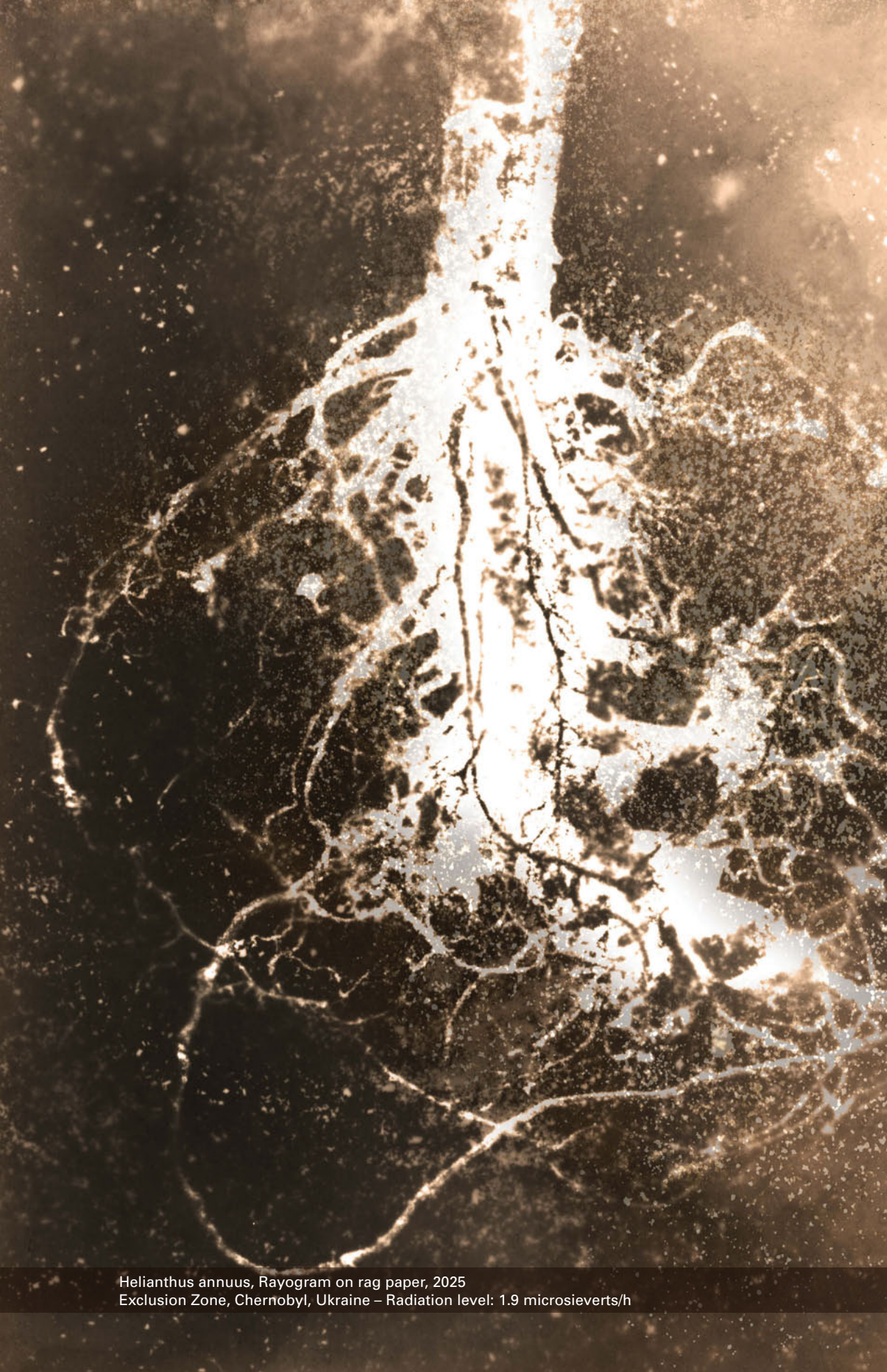
The episode that I have in mind and that keeps replaying itself before my eyes is that of a woman confronting heavily armed soldiers on a city street. Upon finding out that the soldiers are in fact Russians, she queries them as to what they are doing on her land and justifiably calls them occupants and fascists. Next, something unexpected happens. The woman says: "Take these seeds and put them raw in your pockets. At least, sunflowers will grow there where you fall on our soil." This is the only thing she will insist upon in the brief exchange: "Guys, put these seeds in your pockets. You will lie in the earth with the seeds."

Flowers as symbols of resistance to military operations are quite familiar. The term "Flower Power" was coined during mass protests against the US invasion of Vietnam, when George Harris put carnations in gun barrels during the 1967 march on the Pentagon. This act was repeated in Europe, on April 25, 1974, when the dictatorial Estado Novo ("New State") in Portugal was peacefully overthrown by the Portuguese military. The event became known as "Carnation Revolution," seeing that flower sellers in Lisbon donated carnations for soldiers to insert into the barrels of their guns. It is said that the idea originated with one Celeste Caeiro in a restaurant in Lisbon. She began to hand out carnations from the restaurant, and the idea caught on.

The anonymous and brave Ukrainian woman, who addressed heavily armed Russian soldiers, did something else, though. She did not cull flowers in a symbolic gesture of peaceful resistance to military onslaught. She did not offer their transient lives as a secular sacrifice on the high altar of human coexistence, the sacrifice that is never acknowledged as such. Instead, her gesture was oriented toward the postwar future, the germination and growth of sunflowers nourished by the Ukrainian soil and… the dead bodies of the Russian invaders. The seeds will outlive those who put them in the pockets of their military fatigues. They will live on and flourish as flowers, fed by the death of the occupiers, who will enrich with their decomposing corpses the soil of the country they invaded.

In the terrible "thick of the moment," as the English idiom goes, the apparently fleeting gesture makes differences between epochs and geographical regions dissipate, if only for a short while. The Ukrainian woman transports us all back to ancient Eleusis and to the Eleusinian Mysteries, perhaps the longest-practiced and best-known rituals of Mediterranean antiquity. Despite their fame, few details are verifiably available about what went on at Eleusis, where rites associated with the cult of Demeter and Persephone were held. It is known, for instance, that the ceremonies were initiations into the mysteries of death and rebirth, guided by the annual cycles of plants. Initiates would have retraced the steps of the two goddesses—descent to Hades, search for the lost daughter, and ascent back to the world. Most likely, they would have done so with the help of germinating seeds—above all, wheat or barley and the hallucinogenic fungi that grow on them.[37]

The Eleusinian Mysteries, also reflected in Orphic approaches to nature, were passages: rites of passage or initiation, for sure, as well as the interminable (if finite) transitions of plants and animals and humans from darkness to light, from death to birth, and back again. The ritual is a watershed moment that changes its participants from a *mustēs*, who "is a person with eyes closed and therefore blind to the truth," to an *epoptēs* who "sees the truth." As I put it in *Time Is a Plant*, "at the risk of an overgeneralization, it is possible to conclude that Eleusinian Mysteries were an apprenticeship in becoming vegetal. Like Persephone, plants live partly underground in the moist darkness of the soil and partly in the bright and airy expanse aboveground. Except that Persephone divides her time in



Helianthus annuus, Rayogram on rag paper, 2025
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.9 microsieverts/h

these opposite abodes into various segments (corresponding to the seasons of the year when her mother, Demeter, is in mourning or joyfully vibrant) while plants live simultaneously above and below, in darkness and in light. Becoming vegetal is converting succession into simultaneity without leaving the order of time: in the course of initiation rites into the Greater Mysteries in Eleusis that take place at the turning points of the seasons, time passes into space, its sequences condensed and presented all at once, and space is temporalized. Above and below, tapping into the reserves of consciousness and the unconscious, the *mustai* are living their deaths and dying to their lives, both dying and reborn in themselves. Their initiation cannot be an enlightenment, not only because, as described by Aristotle, it 'was an emotional experience instead of a cerebral process of learning—*pathein* instead of *mathein*,' but also because the gist of this initiation is an integration of light with darkness, of the sun with the soil, of shimmering life with the bustling obscurity of death."[38]

So, why am I recalling all of this here? Because the Ukrainian woman who hands sunflower seeds over to Russian soldiers gives them an abridged contemporary initiation into the Mysteries. That said, I propose to tread carefully, going step by step, in matters as delicate as these.

It is certainly significant that the cult of the Mysteries revolves around two goddesses, rather than the gods. The entire universe is divided into realms, over which certain gods preside: Zeus ruling over the celestial sphere, the brilliance of day and of divinity etched in his very name (which will mutate into the Latin *Deus* and the Romance variations of *Dios, Dio, Dieu*, or *Diu*), while Hades is the deity of the underworld, of darkness and death. The goddesses—Demeter and Persephone—are the ones who thread their way between these polarized milieus, mediating between them, just as plants do. They are vegetal, while plants are divine in this pre-patriarchal reminder of what Marija Gimbutas calls "the old Europe."

The Ukrainian woman, for her part, is conducting the soldiers through the darkness of death (the darkest darkness, one might say, of dying in a war as an aggressor and an invader) to vegetal transition and partial emergence to the light in the shape of sunflowers. With the seeds, she offers them posthumous redemption. Despite cursing them and cursing at them, she suggests that the seeds will "at least" make sure that they do not die in vain. Not only will their bodies stimulate plant growth, but also something of them will survive in and as the flowers, rooted in the earth they treaded in tanks (or, later on, golf carts). Their vegetal afterlife will, in a very limited sense, atone or compensate for violence and destruction wrought in their human incarnation. They recoil in horror and disgust from her suggestion; still, unbeknownst to themselves, at the urging of the Ukrainian woman, they embark on the path of the *mustai* in the most literal and material manner imaginable. Speculative as this insight is, it is not far-fetched to suppose that, were they to die in Ukraine, her words would be among the last to cross their minds.

Dying is an apprenticeship in becoming-plant; living (that is: dying and being reborn—or not reborn—bit by bit in oneself) is another aspect of the same apprenticeship. War is an extreme occasion when the meanings of life and death are existentially reshaped and acutely sensed. Reflections on posthumous decay, on becoming *humus* in the soil of one's own or an invaded country, that is to say, on the heritage of one's biological being are not beside the point here.

At the outset of WWI, Freud wrote some of the most profound texts on such subjects. I mean, above all, the 1915 essays "Thoughts for the Times on War and Death" and "On Transience." *Beyond the Pleasure Principle* arose in their aftermath in 1920. Especially in his "On Transience," Freud attends to decay, "the proneness to decay of all that is beautiful and perfect" (*SE* 14: 305),[39] giving rise to despondency and resignation, on the one hand, and rebellion in the face of death, on the other. Freud suggests a third alternative: an increase in the value of what is transient. "Transience value," he writes, "is scarcity value in time. Limitation in the possibility of an enjoyment raises the value of the enjoyment." It is as though the anticipation that decay is about to set in were the indispensable underside of the appreciation "of all that is beautiful." In 2022, the Ukrainian woman puts forth yet another alternative, beyond affective and aesthetic valuations. Descent into the earth, decay into it, is then not the end of a journey, but another beginning, a prelude to the ascent of the above-ground portion of a plant. This is what she says more with her gesture than with words that,

in any case, are not as potent in the ritualistic initiation into Eleusinian Mysteries, whether ancient or all too contemporary.

It bears mentioning that, for both Ukrainians and Russians, sunflower seeds are a common attribute of everyday life. People pass spare time nibbling on them (насіння лузати / лузгать семечки) together with others while carrying on an unhurried conversation. In this cultural context, it is not at all necessary to specify what kind of seeds they are: "seeds" (насіння or семечки) mean by default "sunflower seeds." Often, they mediate the coexistence of families, friends, and neighbors. Nevertheless, seeds are first roasted in their shells before being consumed. By emphasizing that soldiers need to put them raw in their pockets, the Ukrainian woman obviously excludes them from the communal exchanges mediated by sunflower seeds. Less manifestly, she is willing to admit them into the more-than-human community of a local ecosystem in the guise of the flowers they would metamorphose into.

These seeds are also emblematic because sunflower is the national flower of Ukraine. In light of their symbolism, the invaders are invited to become not any plant whatsoever, but the one that lends vegetal expression to the sovereign country they invaded. They are in a surprisingly privileged position of metamorphosing into the flowers *of* Ukraine, and, as always, the genitive grammatical form is generatively ambiguous. On the one hand, sunflowers represent Ukraine and are, hence, *of it* in a representational or representative function. On the other hand, when even the enemies of Ukraine are urged to *become* them, what is highlighted is the capacity to absorb, to metabolize, and materially reinvent whatever or whomever stands in a life-and-death opposition to them. This is a strategy of vegetal resistance par excellence, incorporating sources of harm and neutralizing them within a body—of a plant, of the earth, of a polity. It befits a non-identical identity, a life that is discernible in its differences but not fixed in its molds, a nation without lethal nationalism, the *without* that, as in the case of plants, is not a sign of lack, but of incredible strength beyond comparisons of the quanta of power (and powerlessness). Plus, while rooted in the earth, sunflowers are heliotropes. They follow the sun—not the solar fetish ideally never setting over the empire, but the finite sun, a dying star committed to light and to darkness, brilliant and welcomed in the underworld, where, according to ancient Egyptian beliefs that are also discernible in the Eleusinian Mysteries, from west to east, it continues its circular journey overnight before being reborn the next day at dawn.

When it comes to the sun and perhaps to Persephone herself, the movement of spanning the polarized extremes of darkness and light, the underworld and celestial expanses, is arranged in a succession, in which the opposite moments are strung together in temporal chains. The mystery of the Mysteries, however, is—as I have already put it—in "converting succession into simultaneity without leaving the order of time." Nourished by solar energy and decay, at once above and below, vegetal growth is time spatialized and space temporalized, an afterlife living on before and beneath life, an afterdeath dying on and/as the living of life itself. (Why not interpret the first line of the Ukrainian anthem, "Ще не вмерла України і слава, і воля [Ukrainian glory and freedom are not dead yet]" in this key?). Right on their semantic surface and in immeasurable unconscious depth whence they arise, the words of the Ukrainian woman addressed to Russian soldiers say just this.

Unlike the gestures that hers is analogous to, from American protests against the Vietnam War to the Portuguese Carnation Revolution, the Ukrainian woman's conduct is not merely symbolic. It provides a vital path toward the senses of peace and life, existence and coexistence, where, whatever the atrocities human beings commit, plants quietly prevail. In the same vein, my brief analysis of the situation at hand is neither allegorical nor metaphoric. It is necessary to tarry with the small, seemingly marginal, aspects of events in order to interpret what is going on "on the ground" and, more obscurely, "in the ground" whence future growth arises. Surface *and* depth, light *and* dark, the celestial and the terrestrial journey of the sun—all over again.

I want to conclude, now as I did over three years ago, with an excerpt from "So let's talk about it" by Ukrainian poet, Serhiy Zhadan. With a little bit of effort, we may now receive his poetic word in the vicinity of Eleusis.

"Music beyond the cemetery wall.
Flowers that grow from women's pockets,
schoolchildren who peek into the chambers of death.
The most beaten paths lead to the cemetery and water.
You hide only the most precious things in the soil—
the weapon that ripens with wrath,
porcelain hearts of parents that will chime
like the songs of a school choir.
I'll talk about it—"

Let's, indeed, talk about it. And when we quiet down, let's listen to vegetal "music beyond the cemetery wall."

Fragment 40 **Containment Breached**

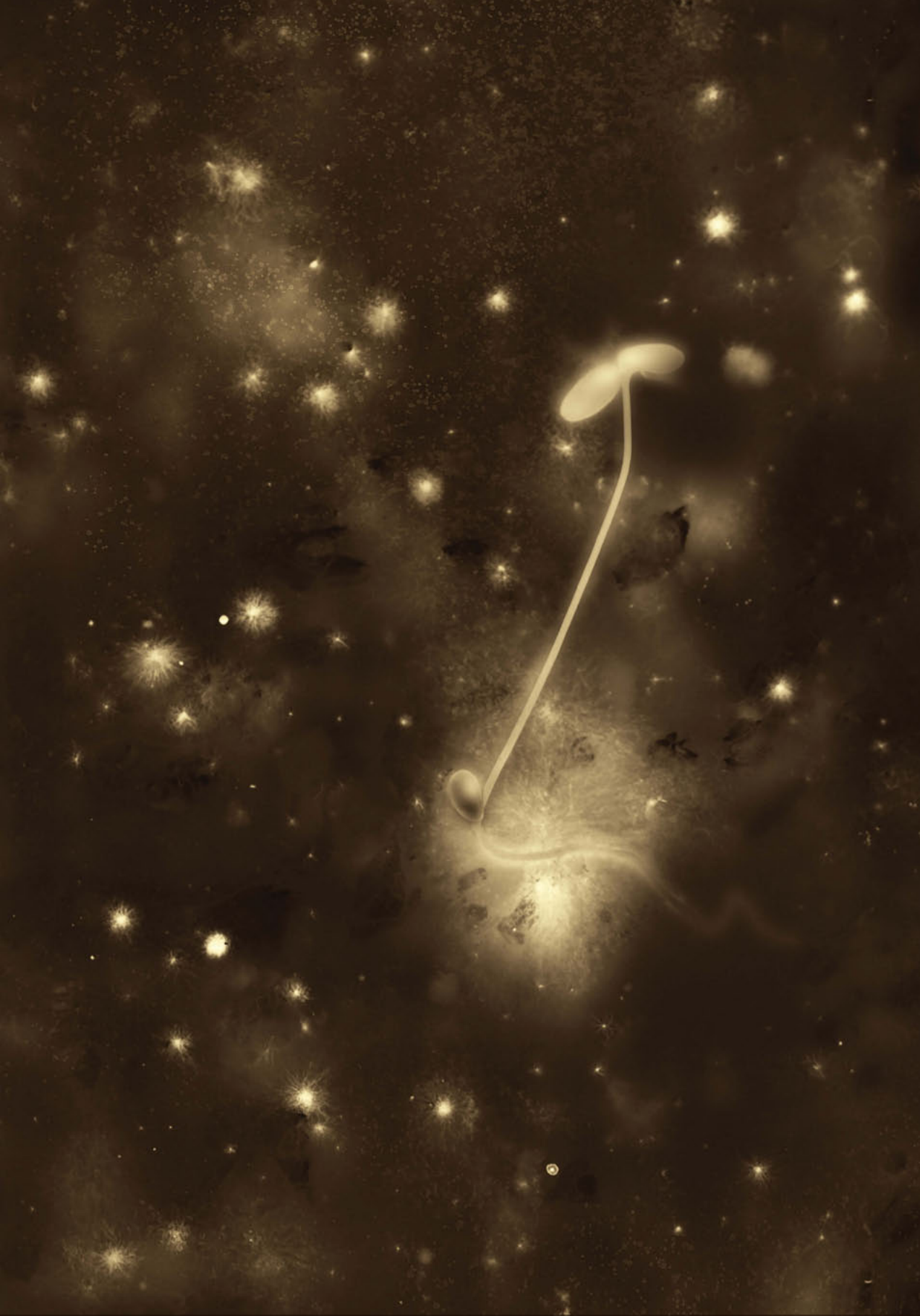
The containment structure, erected over the Sarcophagus, which, in its turn, encases the exploded Reactor 4 at the Chernobyl Nuclear Power Plant, was breached as a result of Russian military activity in the country's ongoing aggression against Ukraine. A drone crashed into the protective shield, causing a fire and puncturing a hole in its roof. As the UN's International Atomic Energy Agency's team confirmed in December 2025, the shield had lost its safety functions, including the capabilities of confinement.

A shield that no longer shields. A containment edifice that does not contain what was meant to stay inside. A safety structure—unsafe. These are just some of the terrible flashes of the denuding triggered by war. I say or write "denuding," because what peers from the aperture in the burnt section of the roof is what the techno-optimist delusion of being in control of the situation could never neutralize, let alone dispense with. The Sarcophagus and its more recent outer shell (dubbed New Safe Containment) already contained the uncontainable, lending an air of safety to the unstable and the non-stabilizable. More than metal and other materials, the breach aimed at psychic defenses, in keeping with Putin's nuclear blackmail against Ukraine and the rest of Europe.

A germinating seed is also uncontainable in the rigid coat, which guarantees its preservation before the propitious and ecstatic moment of its emergence out of itself. And, in the state of dormancy, the containment of the seed is, likewise, double, its boundary consisting of testa and endosperm. Both need to be ruptured for the radicle and the hypocotyl to protrude in germination. There is some reassurance in this, when it comes to the damaged roof of New Safe Containment: so long as the other, deeper protective layer is intact, there is nothing to worry about. Psychic defenses reconstitute themselves before physical repairs have a chance to begin. But things are not as simple: deterioration from within and a breach from without make the double blow, dealt by the ultimate form of extractive energy and military aggression. The seeds of an ongoing fallout have been sown. They germinate.

What happens when a radioactive seed from Chernobyl germinates? That which does not go away, that which does not pass refusing to become the past, grows. Its effects extend themselves further afield than the soil peppered with isotopes: first, into vegetal tissues, which undergo mutation, and, second, into the world, with pollen and seeds that the mature plant will yield, with biochemical exudates, and with fallen leaves. A break in the seed coat, which ensured containment, is down to the elongation of radioactive cell rows. Life regerminates and regrows after the disaster, but the disaster, too, grows and recommences anew with every hypocotyl and radicle, every fresh leaf and flower, every meristem woken up from its slumber into development.

The disaster grows. But, in doing so, it changes—for better or for worse, for better and for worse. Metabolizing and metamorphosing with the plants and the world, whose metamorphoses and metabolisms it aims to arrest. The war, the explosion, the quest for unlimited energy drawn from the split atom: all these are its multiple extensions, ramifications, implications and complications. If the disaster grows, then it rots, as well. May it rot enough to nourish another future!



Linum usitatissimum germinating seed, Rayogram on rag paper, 2026
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.9 microsieverts/h

Postface 1

When I was a child I believed wars left the soil infertile. I had pictured the battlefields of the Persian Gulf War as lands where no more plants grew. At the opposite end, Chernobyl 30km exclusion zone is now revealing a ground where vegetation cannot die. Frozen in the present of the accident, the land comes to a standstill, fixed in place as in a photographic image. Trees do not decay. The silhouettes of plants are unchanged. Cesium-137 is at work. The mutation happens from the inside. Biogenetic studies on crops planted in the shade of the Chernobyl power station are revealing a subtle transformation, inaccessible to the naked eye. The core cells of the plants have undergone a transformation. It is not surprising that the Ukrainian population, exposed to high levels of radiation, has named it *the invisible enemy*. With the early tools of photography, I was drawn to explore the stigmata of Chernobyl's explosion on the flora. Capturing the silhouettes of these plants on photosensitive paper, I did not intend to represent the advent of an apocalypse but to interrogate the end of an era. Could these images called photograms or rayograms help us think, through the bodies of plants and the nuclear catastrophe in its etymological sense as an overturning, a disruption, of which Chernobyl is the sign?

Anaïs Tondeur

Postface 2

The text you have just finished reading is as much a book as it is a stage, a performative space of inscription, upon which everything has made its appearance, from portions of my biography to parts of plants, not to mention the themes and encoded titles of my books. The event of the thing, groundless existence, plant-thinking or plant-consciousness, the politics and metaphysics of fire, dust, energy dreams and nightmares have all been summoned to this stage. Unless it is not a stage but a vortex, sweeping thought and life into its midst. Between the competing paradigms of enacting existence on the surface and incorporating it into the depth, the reader will need to decide. At the end of the day, it could just as well be that the surface/depth distinction, so crucial to metaphysical operations, is itself folded into exposure (to radiation, thinking, the world, the other) with its external and internal modalities. If so, then exposure will have been a *pharmakon*, a poisoned gift of metaphysics that makes the donative source itself unravel. Do with it as you please.

Michael Marder

Notes

1. Svetlana Aleksievich, *Chernobyl'skaya Molitva: Khronika Buduschego* [translated into English under the title *Voices from Chernobyl*] (Moscow: Vremya, 2008), p. 49, translation mine.
2. Cf. Luce Irigaray & Michael Marder, *Through Vegetal Being: Two Philosophical Perspectives* (New York: Columbia University Press, 2016).
3. Alla A. Yaroshinskaya, *Chernobyl: Crime without Punishment* (New Brunswick & London: Transaction Publishers, 2011), p. 132.
4. Refer to Fragment 2.
5. Katarína Klubiová et al. "Soybeans Grown in the Chernobyl Area Produce Fertile Seeds that Have Increased Heavy Metal Resistance and Modified Carbon Metabolism," *PLoS ONE*, October 26, 2012. DOI: 10.1371/journal.pone.0048169.
6. Michael Marder, "The Sense of Seeds, or Seminal Events," *Environmental Philosophy*, April 2015, DOI: 10.5840/envirophil201542920.
7. Rachel Nuwer, "Forests Around Chernobyl Aren't Decaying Properly", *Smithsonian Magazine*, March 14, 2014 <http://www.smithsonianmag.com/science-nature/forests-around-chernobyl-arent-decaying-properly-180950075/?no-ist>. Last accessed on December 10, 2015.
8. Cf. Jacques Derrida, *Demeure: Fiction and Testimony*, translated by Elizabeth Rottenberg (Stanford: Stanford University Press, 2000).
9. For Ulrich Beck's conceptualization of "risk society," refer to *Risikogesellschaft: Auf dem Weg in eine andere Moderne* (Frankfurt am Main: Suhrkamp Verlag, 1986)—published in the year of the Chernobyl catastrophe.
10. Majia Holmer Nadesan, *Fukushima and the Privatization of Risk* (Basingstoke: Palgrave, 2013), p. 76.
11. Michael Marder, *The Philosopher's Plant: An Intellectual Herbarium* (New York: Columbia University Press, 2014).
12. Marder, *The Philosopher's Plant*, p. xvi.
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14. Cook, *Jean-Jacques Rousseau and Botany*, p. 15.
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16. Simon Dubnow & Israel Friedlaender, *History of the Jews in Russia and Poland*. Volume 1: *From the Beginning Until the Death of Alexander I* (Philadelphia: The Jewish Publication Society of America, 1916), p. 258.
17. Richard Evans, *Rereading German History: From Unification to Reunification, 1800-1996* (London & New York: Routledge, 1997), p. 155.
18. For firsthand accounts of these activities, see Aleksievich's *Chernobyl'skaya Molitva, passim.*
19. R.F. Mould, *Chernobyl Record: The Definitive History of the Chernobyl Catastrophe* (Boca Raton, FL: CRC Press, 2000), pp. 126, 131.
20. Michael Marder, *Plant-Thinking: A Philosophy of Vegetal Life* (New York: Columbia University Press, 2013), p. 67.
21. Polesie State Radioecological Reserv, "Non-Fiscal Activity of PSRER" <http://www.zapovednik.by/en/Non_fiscal_activity/>. Last accessed on December 10, 2015. In a bizarre twist, Belorussian authorities could not resist the temptation to exploit the "Reserve" by breeding horses and pigs there, producing honey, and engaging in timber collection and processing.
22. Cf. Kostin's testimony in *The Russian Woodpecker* (2015), directed by Fedor Alexandrovich.

23. "Radiation Neuropathy," in *Merritt's Neurology*, Twelfth Edition, edited by Lewis Rowland and Timothy Pedley (Philadelphia: Kluwer, 2010), p. 833.

24. Michael Marder, *Energy Dreams: Of Actuality* (New York: Columbia University Press, 2017).

25. This is a reference to the first line of Dante's *Divine Comedy*: "In the middle of our life's path…"

26. https://www.ft.com/content/6f7fdbae-4b3b-11ea-95a0-43d18ec715f5, https://www.theguardian.com/news/audio/2020/feb/25/could-coronavirus-be-china-chernobyl-moment-podcast, https://thediplomat.com/2020/03/is-covid-19-chinas-chernobyl-moment/

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30. Alexievich, *Voices from Chernobyl*, p. 89.

31. Alexievich, *Voices from Chernobyl*, p. 92.

32. Martin Heidegger, *Sein und Zeit* (Tübingen: Max Niemeyer Verlag, 1993); English edition: *Being and Time*, translated by John Macquarrie and Edward Robinson (San Francisco: Harper Collins, 1962), p. 277.

33. Heidegger, *Sein und Zeit*, p. 356.

34. Martin Heidegger, *Country Path Conversations*, translated by Bret W. Davis (Bloomington: Indiana University Press, 2010), p. 138/213.

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36. Michael Marder, *Time Is a Plant* (Leiden: Brill, 2023).

37. Sigmund Freud, The Standard Edition of the Complete Psychological Works of Sigmund Freud, 24 volumes, translated and edited by James Strachey (London: Vintage, 2001). "SE" is the abbreviation for Standard Edition, followed by the volume and page number.

38. Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton & Oxford: Princeton University Press, 2015), p. 3.

39. "The timing of the bomb in August would have corresponded to the beginning of the matsutake fruiting season. How radioactive those mushrooms were is a continuing mystery. One Japanese scientist told me he planned to research the radioactivity of Hiroshima matsutake, but the authorities told him to stay away from this topic. The U.S. bomb exploded more than five hundred meters above the city; official wisdom has it that the radioactivity was carried into global wind systems, with little local contamination." Tsing, *The Mushroom at the End of the World*, p. 290, FN#3.

Philosophy/Art

We entrust readers with forty fragments of reflections, meditations, recollections, and images—one for each year that has passed since the explosion that rocked and destroyed a part of the Chernobyl nuclear power station in April 1986. The aesthetic visions, thoughts, and experiences that have made their way into this book hover in a grey region between the singular and self-enclosed, on the one hand, and the generally applicable and universal, on the other. Through words and images, we wish to contribute our humble share to a collaborative grappling with the event of Chernobyl. Unthinkable and unrepresentable as it is, we insist on the need to reflect upon, signify, and symbolize it, taking stock of the consciousness it fragmented and, perhaps, cultivating another, more environmentally attuned way of living.

> In this beautiful book, Michael Marder and Anaïs Tondeur reflect deeply on the hyperobject that is the nuclear radiation from Chernobyl through the device of the herbarium, miniature ecosystems that botanists used in the Victorian period. Under the fragile traveling glass of paper and pixels, Marder and Tondeur host tendrils of prose and cellulose. It's a stroke of genius to have miniaturized something so vast and demonic—we don't even know how to dream any of this yet (it's called ecological awareness), and as Marder observes here, just upgrading our aesthetics to cope with the trauma of this awareness is a key unfinished project.
>
> – *Timothy Morton, Rita Shea Guffey Chair in English, Rice University*

Michael Marder is IKERBASQUE Research Professor in the Department of Philosophy at the University of the Basque Country (EHU), Vitoria-Gasteiz. His most recent books include *The Phoenix Complex* (2023), *Time Is a Plant* (2023), with Edward S. Casey, *Plants in Place* (2024), *Eco-Freud* (2025), *Metamorphoses Reimagined* (2025), with Anaïs Tondeur, *Fiori di fuoco* (2025), and *Of Joints and Other Articulations* (2026). More information at michaelmarder.org.

Anaïs Tondeur is a visual artist. Attending to invisible materialities of the air and the climate, plants and soil, Anaïs Tondeur develops image-based investigations as anthropological tools. She catches images at the interstices of bodies and environments, in sites marked by human activity where she breeds novel engagements, pointing to alternative forms of relationalities and photographic materialities. Trained at Central Saint Martins and the Royal College of Arts, Anaïs Tondeur has exhibited internationally, from the Centre Pompidou to the Kröller-Müller Museum and the Nam June Paik Art Center, and received numerous awards, including the Grand Prix RPBB and the Prix Art of Change 21. www.anaistondeur.com

Cover Image: Byrsonima lucida, Rayogram on rag paper, 2011-2016
Exclusion Zone, Chernobyl, Ukraine – Radiation level: 1.7 microsieverts/h

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