# 'Traumatomic' Encounters. Trauma through Radioactivity in Photofilmic 'Experimental Documents' of Chernobyl



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# 'Traumatomic' Encounters

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#### Abstract

Nuclear trauma has always resisted verbal and visual portrayal, calling for various alternative, formbreaking methods. This article discusses three artistic works which I consider "experimental documents" because of their various photographic and filmic practices of intimately approaching the radioactive contamination still present in the Chernobyl Exclusion Zone. The site-related projects of Alice Miceli (Chernobyl Project, 2006–2010), Lina Selander (Lenin's Lamp Glows in the Peasant's Hut, 2011), and Daniel McIntyre (Lion series, 2011-2014) go beyond the journalistic representations of the area and directly engage with the material traces, embodiment and objectification of immaterial radioactivity, devoting key role to the artist's bodily and sensorial presence in the traumatic landscape. I examine these works of art in a conceptual context that assumes a structural similarity between radioactive radiation and trauma due to their uncontrollable and retrospective nature, their specific aspects of embodiment, and their manifestation through various emotional and physical symptoms. According to my observation, although the artists initially aim to investigate and document the immateriality of toxic radiation through the mediums of photography and film, they not only reveal the original, hyperobjective nature of nuclear trauma, but also touch on its affective qualities. I will argue that these three works, despite their differences, are based on "traumatomic encounters" with the radiation-contaminated sites and have in common the perception of Chernobyl as a "traumascape" (Tumarkin), which is saturated with an invisible, radioactive, and at the same time affective "atmosphere" (Böhme).

#### Keywords

nuclear radiation, radioactivity, traumascape, affective atmosphere, hyperobject, experimental film, material witness

#### Introduction

With the nuclear age, a new type of pervasive trauma appeared. The ontological insecurity generated by the invention of the atomic bomb, and the sense of danger and risk resulting from its first military deployment acted as key factors in the formation of a "nuclear subjectivity".<sup>1)</sup> Later, with the accidental explosion of power-generating reactors, nuclear trauma extended to the sites of slow or structural violence, leading to complex, long-term environmental, biological damage and physical, psychological consequences.<sup>2)</sup> While any disaster can cause trauma symptoms, nuclear events are more likely to lead to catastrophic consequences, not only because they can affect large communities or entire countries, but because that the insidious nature of radiation exposure and the lack of knowledge about the effects of nuclear energy allows fear and stress to prevail in different ways from more well-known and understandable disasters (like e.g. natural catastrophes).<sup>3)</sup>

The accident at the Chernobyl RBMK nuclear reactor No. 4. on April 26, 1986, in Ukraine was considered the worst man-made, technological disaster in the history of humanity, receiving the highest possible rating on the international nuclear disaster ranking (7 on INES),<sup>4)</sup> a score that holds alone to this day. The resulting radioactive fallout, including plutonium, iodine, strontium and caesium, was 200 times bigger than the bombs of Hiroshima and Nagasaki; the neighboring town, Pripyat and many surrounding villages were emptied in the next 36 hours, in total 200,000 people were relocated, and the contamination was affecting most of the European areas.<sup>5)</sup> The disaster was traumatic on individual and collective levels as it had a serious negative psychological and physical impact, mostly due to misinformation and unknown health consequences. Chernobyl trauma, in addition, unfolded continuously and retrospectively over time,<sup>6)</sup> creating a general feeling of insecurity and uncertainty in the region. The traumatic cultural, ecological, and biological aftereffects<sup>7)</sup> indirectly and directly undermined the political stability of the Soviet Union, leading to the collapse of the communist system in 1991.

Nuclear catastrophes spreading radioactive contamination and activating human and non-human agencies not only represent a special case of ecological disaster but seem to highlight some ontological similarities between the concept of trauma and the nature of nuclear radiation.<sup>8)</sup> The Holocaust-based theories of trauma formed at the beginning of

- 1) Gabriele Schwab, Radioactive Ghosts (Minnesota: University of Minnesota Press, 2020).
- Gabriele Schwab, "Transgenerational Nuclear Trauma," in *The Routledge Companion to Literature and Trau*ma, eds. Colin Davies and Hanna Meretoja (London and New York: Routledge, 2020), 438–451.
- 3) Shannon Moore, "Nuclear Trauma," in *Encyclopedia of Immigrant Health*, eds. Sana Loue and Martha Sajatovic (New York and London: Springer, 2012), 1128–1129.
- INES: The International Nuclear and Radiological Event Scale User's Manual, 2008 edition (Vienna: International Atomic Energy Agency, 2013), 2, 152, accessed January 19, 2023, https://www-pub.iaea.org/MTCD/Publications/PDF/INES2013web.pdf.
- "Frequently Asked Chernobyl Questions," *International Atomic Energy Agency*, accessed January 18, 2023, https://www.iaea.org/newscenter/focus/chernobyl/faqs.
- 6) Ekatherina Zhukova, "From Ontological Security to Cultural Trauma: The Case of Chernobyl in Belarus and Ukraine," *Acta Sociologica* 59, no. 4 (2016), 332–346.
- 7) Lynn Barnett, "Psychosocial Effects of the Chernobyl Nuclear Disaster," *Medicine, Conflict and Survival* 23, no. 1 (2007), 46–57.
- 8) For a discussion of the metaphorical 'radioactivity' of trauma, in a different context, see: Yolanda Gampel,

the 1990s (which understandably did not yet reflect the events of Chernobyl as trauma at all), especially the writings of Cathy Caruth, Shoshana Felman, Dori Laub, and Geoffrey Hartman, defined trauma as a hidden, unrepresentable, inner affective experience, which is related to an "event without a witness", and is understood and processed retrospectively. The reception and assimilation of the original event begin only later because it is "registered rather than experienced," thus it is not so much the event itself, but the "structure of the experience" that explains the traumatic consequences. 10) Some later theories on the other hand emphasized the physical registration of trauma, which hides in the body as an invisible scar and generates long-lasting effects.<sup>11)</sup> These features show strong similarities with the phenomenon of nuclear radiation, which despite its pervasive presence, cannot be detected by the human senses. According to the scientific descriptions, radiation is invisible, inaudible, odorless and intangible, tasteless and colorless, its presence is hardly experienced. Intrinsically immaterial, it manifests itself in other substances and living organisms; its effects become visible "only after a delay, as the diseases come to the surface of the body." <sup>12)</sup> Based on these correlations I propose to think of radiation as an illuminating conceptual metaphor for trauma, taking up the idea of the "radioactivity of trauma," which refers to its uncontrollable, retrospective status, embodied aspects, and manifestations through various emotional and physical symptoms. I see the works of art presented below as situated in this conceptual interrelatedness, raising questions and pointing to further sensual, affective details of this web of similarities and reflections between radiation and trauma.

The unrepresentable and inexpressible nature of (nuclear) trauma has always posed a challenge bordering on provocation to the visual and verbal media and arts, prompting all kinds of alternative, unconventional, form-breaking methods.<sup>13)</sup> In the following, I will discuss three artistic works which I consider "experimental documents" because of their various photographic and filmic (photofilmic) practices of intimately approaching the radioactive contamination still present in the Chernobyl Exclusion Zone. These works form a special group in the rich and diverse corpus of documentary depictions and interpretations of the Chernobyl disaster, whose history began immediately after the explosion at the end of April 1986, and has remained a popular topic of documentaries, tourist videos,

<sup>&</sup>quot;Historical and Intergenerational Trauma: Radioactive Transmission of the Burdens of History — Destructive versus Creative Transmission," in *Approaches to Psychic Trauma: Theory and Practice*, ed. Bernd Huppertz (London and New York: Rowman & Littlefield, 2018), 53–63.

<sup>9)</sup> Shoshana, Felman and Dori Laub, eds., *Testimony: Crises of Witnessing in Literature, Psychoanalysis, and History* (London and New York: Routledge, 1992).

<sup>10)</sup> Cathy Caruth, "Trauma and Experience: Introduction," in *Trauma: Explorations in Memory*, ed. Cathy Caruth (Baltimore: Johns Hopkins University Press, 1996), 3–12.

<sup>11)</sup> Bessel Van der Kolk, The Body Keeps the Score: Mind, Brain and Body in the Transformation of Trauma (New York: Penguin Books, 2014).

<sup>12)</sup> Trond Lundemo's words from a conference presentation are quoted in: Hannah Goodwin, "Atomic Tests: Experimental Filmmaking in the Nuclear Era," *Journal of Film and Video* 73, no. 2 (2021), 11–25.

<sup>13)</sup> The idea of unrepresentability typically appeared in the classic, Holocaust-related, post-structuralist trauma theories, and was later criticized by various philosophical and aesthetic discourses and therapeutic practices. For a more recent comprehensive overview of the topic, see e.g.: Anna-Lena Werner, *Let Them Haunt Us: How Contemporary Aesthetics Challenge Trauma as the Unrepresentable* (Bielefeld: transcript Verlag, 2020).

and TV broadcasts ever since. <sup>14)</sup> Leaving behind the journalistic representation of the area, in the case of the *Chernobyl Project* (Alice Miceli, 2007/2011), *Lenin's Lamp Glows in the Peasant's Hut* (Lina Selander, 2011), and *Lion* series (Daniel McIntyre, 2011–2014) the artists act as translators or mediators who, sensing and scanning the atmosphere of the traumatic site, turn their work of art into a medium of an embodiment for the invisible, ethereal radioactivity. <sup>15)</sup> I will refer to these embodiments as "traumatomic encounters" and I will argue that by the examination and documentation of the immateriality of toxic radiation through the sensory, and material aspects of photography and film, these artworks actually come closer to exploring and exposing the hyperobjective and affective nature of nuclear trauma.

# Nuclear trauma: (hyper)objective and affective

Studying the traumatic effects of the Chernobyl explosion in the context of the environmental culture of the Soviet Era, Anna Barcz highlights the iconic and symbolic significance of the location, which was developed despite the fact that beginning with the mid-1950s several nuclear accidents occurred in the Soviet Union. Among other things, the reason for this was that the reactor incident could not be kept a secret because of the obvious consequences, so it received international publicity within a short time, and the news caused existential shock and transnational human and ecological trauma in the entire region. From then on by mentioning Chernobyl we no longer mean the village or the place itself, as its multiple meanings exceed into what Olga Briukhovetska calls 'master signifier' or 'key symbol', comparable to "Hiroshima" in quotation marks. 17)

- 14) These documentaries usually combine interviews (with experts, scientists, historians, doctors, journalists, researchers, survivors and relatives, tourists and guides), and typically alternate between four representative locations of the Exclusion Zone: the reactor site (the Sarcophagus), natural landscapes, village households and the abandoned buildings of Pripyat (Nikolaus Geryhalter, *Pripyat*, 1990; Frederic and Blandine Huk Cousseau, *A Sunday In Pripyat*, 2006; Phil Grabsky, *Heavy Water*, 2006). A group of these films deal with the natural life, the animals living in the area and the environmental effects of radiation (e.g.: Peter Hayden, *Chernobyl: An Animal Takeover*, 2007; Luc Riolon, *Tchernobyl: Une histoire naturelle*, 2010; Otto Clemens, *Radiactive Wolves*, 2012; Chiara Belatti, *Life After Chernobyl*, 2016); others with the different group of people affected by the events, like the liquidators (Serhiy Zabolotnyi, *Chernobyl 3828*, 2011), villagers (Anne Bogart and Morris Holly, *The Babushkas of Chernobyl*, 2015), children (Maryann DeLeo, *Chernobyl Heart*, 2003), or follow individual stories of some survivors (Gunnar Bergdahl, *The Voice of Lyudmilla*, 2001; Christopher Bisson and Maryann DeLeo: *White Horse*, 2008; Garcia Chad, *The Russian Woodpecker*, 2015); while some others reconstruct the original events with archive footage and digital visualizations (Rollan Serghienko, *The Bell of Chernobyl*, 1987; Kurt Langbein, *The Bell of Chernobyl* 10 years later, 1997; BBC Horizont: *Inside Chernobyl Sarcophagus* 1.–2., 1991–1996).
- 15) Other experimental multimedia projects related to Chernobyl, which mix animation, live recording, photography and artistic reenactments, but do not specifically build on the physical presence of the artists and the embodiment of radioactivity are e.g.: Galina Adamovich, Once upon a time, 2001; Rainer Ludwigs and Tetyana Chernyavska, Leonid's Story, 2011; Ksenia Simonova, Eternal Tears, 2011; Jane and Louis Wilson, Toxic Camera, 2012; Emilija Skarnulyte, Aldona, 2013; Pol Cruchten, Voices from Chernobyl, 2016; Maxim Dondyuk, Untitled Project from Chernobyl, 2019.
- 16) Anna Barcz, Environmental Cultures in Soviet East Europe: Literature, History and Memory (London: Bloomsbury Publishing, 2020), 127.
- 17) Olga Briukhovetska, "Nuclear Belonging': 'Chernobyl' in Belarusian, Ukrainian (and Russian) films," in

In the recollections of Chernobyl witnesses and the literary writings of Christa Wolf and Svetlana Alexievich, Barcz distinguishes two main difficulties in approaching nuclear trauma. She even observes "a tension between the need to objectify this catastrophe [...] and the affective side of nuclear risk narrative." In the traumatized language of cultural memory about Chernobyl, the accident appeared as an ontological shock and epistemological challenge from the beginning; the survivors and witnesses struggled with understanding the so-called objective nature and side effects of nuclear radiation. This complexity is well conceptualized in Timothy Morton's hyperobject theory, by which Morton marks the ecological aftereffects of human interventions into the ecosystem in the Anthropocene. Hyperobjects are "hyper" in relation to other entities, regardless of whether they were produced by humans or not. By definition, these are the largest, longest-lived objects humanity knows, existing beyond our comprehension, enveloping us, attacking and penetrating the physical body at every opportunity. In Morton's vision hyperobjects such as radiation, climate change, oil- and plastic pollution are "massively distributed in time and space relative to humans" entailing unpredictable consequences. On the consequences are consequences.

Nuclear trauma, on the other hand, similar to post-Holocaust definitions, is not caused directly by the accident, but by the serious affective aftereffects related to nuclear pollution, which through the contamination of water, air, soil, plants, and animals led to human losses, cancer cases and genetic mutations. These effects of radiation become visible only gradually; the destruction is delayed, and scattered in time and space, being a typical example of what Rob Nixon calls stratified slow violence, by which Nixon highlights cases when chemical or radiological violence is "driven inward, somatized into cellular dramas of mutation that [...] remain largely unobserved, undiagnosed, and untreated." Barcz also mentions the anti-representational and philosophical character of the Chernobyl narrative, which shows how the event "shook memory and disrupted the borders between the visible and the invisible, the known and the unknown." In my view, it is precisely this "hyperobjective nature" of nuclear trauma that poses a double dilemma for any artistic and aesthetic practice, in the sense that both the objective phenomenon and its affective consequences resist direct portrayal.

The Chernobyl-related artistic projects of Alice Miceli, Lena Selander, and Daniel McIntyre discussed in the following were inspired by direct, first-hand contacts with the site of past traumatic events and the experience of entering and crossing the marked area around the exploded reactor. The artists do not strive to capture the effects of nuclear trauma directly; still, they get closer to it through the phenomenological study and reproduc-

Contested Interpretations of the Past in Polish, Russian, and Ukrainian Film: Screen as Battlefield, ed. Sander Brouwer (Leiden and Boston: Brill, 2016), 97–98. The symbolic interpretation of Chernobyl has been studied by many, see e.g. Sarah D. Phillips, "Chernobyl's Sixth Sense: The Symbolism of an Ever-Present Awareness," Anthropology and Humanism 29, no. 2 (2004), 159–185; Hiro Saito, "Reiterated Commemoration: Hiroshima as National Trauma," Sociological Theory 24, no. 4 (2006), 353–376.

- 18) Barcz, Environmental Cultures in Soviet East Europe, 133.
- 19) Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis and London: University of Minnesota Press, 2013), 85.
- 20) Ibid., 1.
- 21) Rob Nixon, Slow Violence and the Environmentalism of the Poor (Cambridge, MA, and London: Harvard University Press, 2011), 6.
- 22) Barcz, Environmental Cultures in Soviet East Europe, 134.

tion of radiation and radioactivity. This reminds us of the critical approach of Griselda Pollock, who, in relation to artistic representation, proposes the demystification of the idea of trauma as an effect, a condition, a shadow, or an event that we cannot know, and instead suggests to think about it as "an encounter that assumes some kind of space and time, and some kind of gap as well as a different kind of participating otherness." This encounter is created here through experiments to collect or reproduce visual samples of nuclear radiation existing in the area, how the artists initially attempt to approach the hyperobjective phenomenon, yet they also touch on its affective qualities. The shift or transition between the hyperobjective and affective is produced by the way in which the artistic projects perceive Chernobyl as a *traumascape*, which is saturated with a specific, invisible, radioactive, and at the same time affective *atmosphere*, that can be grasped in its sensuality, embodied and enclosed in works of art.

### Traumascape, radiation and the photofilmic: Chernobyl Project

The visit to the reactor site is an event of key importance in the case of the three works. The evacuated, closed and essentially uninhabited Chernobyl Exclusion Zone, a 30-kilometer radius area around the exploded reactor No. 4. redefines the notion of a traumatic land-scape in its own way. The empty, apocalyptic, post-urban areas of the past atomic city, Pripyat, and surrounding rural landscapes, rewilded by animals and plants in a flourishing "radioactive paradise,"<sup>24)</sup> simultaneously show a haunting, post-human radioactive future and the natural world's vitality in the human absence. As a still severely contaminated area, various prohibitions and restrictions govern its visit, and despite being a popular destination for dark tourism, Chernobyl has never been, nor can it be such a memorial site or place of pilgrimage like for example Auschwitz-Birkenau, Ground Zero, Hiroshima or the Cambodian Killing Fields.

The idea of approaching trauma through location recalls the concept of 'traumascape', by which Maria Tumarkin wishes to draw attention to the importance of physical places of traumatic events, in contrast to the temporal dimensions that have long been emphasized in trauma theories.<sup>25)</sup> In these haunted and haunting places constituted by particular past experiences and their aftermath, "visible and invisible, past and present, physical and metaphysical come to coexist and share a common place." Pointing to the essential affectivity of these sites, Tumarkin states that the significance of traumascapes lies in the specific

<sup>23)</sup> Griselda Pollock, "Art/Trauma/Representation," parallax 15, no. 1 (2009), 40-54, 40.

<sup>24)</sup> Barcz, Environmental Cultures in Soviet East Europe, 132.

<sup>25)</sup> With the concept of traumascape, Tumarkin reflects on a long-standing asymmetry in trauma theories. Although time and temporal dimensions appeared from the beginning as basic definitional elements of trauma, which was envisioned as something that can be processed retrospectively, the importance of physical locations was recognized in these theories only recently. Tumarkin cites several examples of descriptive terms given to locations of violent, tragic events, like wounded space (Deborah Bird Rose), places of colonial uncanny (Ken Gelder and Jane M. Jacobs), spaces of death (Michael Taussig), landscape of violence and tragedy (Kenneth Foote), or Dominic LaCapra's engagement with Claude Lanzman's *non-lieux de la mémoire*. See: Maria Tumarkin, "Twenty Years of Thinking about Traumascapes," *Fabrications* 29, no. 1 (2019), 4–20.

cultural work they perform, and the way they become involved in individual and collective rituals of grieving, remembering and interpreting of specific traumatic events. In Chernobyl Project (2006-2010), Brazilian artist Alice Miceli researches the possibilities of "recording radiation [...] embedded into other physical matter," with particular regard to the (in)visibility of traumatic aspects of a place.<sup>27)</sup> According to the IAEA measurements, more than a hundred radioactive elements were released into the atmosphere at the time of the explosion, most of them though decayed in the meantime; the isotopes Caesium-137 and Strontium-90 however are still present in the area.<sup>28)</sup> As indicated by the title and duration of Miceli's work (Chernobyl Project, 2006-2010), the artist borrowed the methods of a scientific experiment, when first replicated the conditions of Chernobyl radiation (especially Caesium-137), in a controlled, laboratory environment. The recordability test was refined following further on-site visits. After laying and leaving radiographic films used for X-rays on the surfaces of trees, ground, and houses in the Chernobyl Exclusion Zone, Miceli realized that the ideal direct exposure time is 2–8 months, for the gamma rays to become clearly visible on the radiation-sensitive substrates. The series of more than 30 large-format (11.9×15.8 inches) radiographic negatives in this way stand before us as silent, ruthless material witnesses of the radiation still present in the highly contaminated landscape, mediating their hyper-objective nature into visible evidence.

By letting radioactivity "expose itself," <sup>29)</sup> Miceli's 'experimental document' joins those hundred-year-old efforts, which aimed to visualize radiation in the form of contact prints (or radio-autographs) through direct contact with photosensitive materials. Artist-researcher Susan Schuppli outlines an imaginary timeline of these accidental or planned occurrences, starting with Wilhelm Conrad Röntgen's discovery of X-rays (1895), the "ghost pictures" of mysterious agency, and Henri Becquerel's experiments with uranium salt and phosphorescence (1896). Vladimir Shevchenko's first documentary film (*Chronicles of Difficult Weeks*, 1986) shot at the exploded Chernobyl reactor, right after the day of the tragedy is another example of what Schuppli calls "material witness." Shevchenko first suspected that the film stock used was defective, as he noticed speckles, extraneous static interference, and strange noise in the developed 35mm footage. He realized only after a while that what he had captured involuntarily on film was "the image and sound of radioactivity itself." Shevchenko's spontaneous filmic discovery, together with such projects as *The Chernobyl Herbarium* (2016)<sup>31)</sup> can be included in the list of later examples this time

<sup>27)</sup> As her artist's statement says: "If a place does not reveal itself in the visual, the question then becomes how to look. By what means? The project was rooted in this question, therefore developing a means by which to see it." See: Alice Miceli, *Portfolio*, accessed March 19, 2022, https://nararoesler.art/usr/library/documents/main/30/gnr\_alice-miceli\_portfolio-eng.pdf.

<sup>28) &</sup>quot;Frequently Asked Chernobyl Questions."

<sup>29)</sup> Susan Schuppli, "Radical Contact Prints," in *Camera Atomica*, ed. John O'Brian (Toronto: Art Gallery of Ontario, 2015), 280.

<sup>30)</sup> Susan Schuppli, *Material Witness: Media, Forensics, Evidence* (Cambridge, MA: MIT Press, 2020), 62. In Schuppli's opinion this damaged film stock proposes a rethinking of the ontological nature of the image itself, as it "reconceptualizes the sudden emergence of radiation as a 'capture of the real' rather than a continuation of the representational program of the documentary film." Ibid., 64.

<sup>31)</sup> Michael Marder and Anaïs Tondeur, *The Chernobyl Herbarium: Fragments of an Exploded Consciousness*. (Open Humanities Press, 2016). See: https://library.oapen.org/bitstream/handle/20.500.12657/32750/1/6062 20.pdf.

already related to nuclear events.<sup>32)</sup> The "radicalism" of Miceli's radiographic negatives lies in their interpretation of the idea of 'encounter', which is overshadowed by the possibility of real danger to life present at the site. As Schuppli declares, the provocation of these radical contact prints "is ultimately that of bearing witness to processes, in which images do not merely represent events but are themselves continuous *with* and materialized *as* events."<sup>33)</sup> In her previous photographic works, like the *in depth (landmines)* series, Miceli investigated post-war, mine-contaminated traumascapes of Angola, Bosnia, Colombia, and Cambodia to capture the (in)visible, present, and future aspects of past traumas, still haunting these locations, maintaining the real potentiality of death. Her photographs do not show anything tragic or traumatic, their affectivity is not figural; it rather states in their indexical, haptic, and uncanny closeness to the atmosphere of past and possible future catastrophes.

The design of the *Chernobyl Project*'s exhibition room served the same purpose; as an important interior spatial effect, the original black-and-white radiographic negatives were displayed backlit. The dark room, resembling a developing lab, with the glowing, life-sized boards offered the opportunity for a close investigation of the actual matter entrapped in Chernobyl.<sup>34)</sup> As Miceli did not transform, copy or reprint the originals in any way, the dark areas in the negatives indicated the immediate and intimate presence of radiation, expressing itself through textural alternations, repeating patterns of blurred and saturated areas, a Rorschach test-like, unknown visual language of radioactivity (Fig. 1). Such a sensuous, dynamic and at the same time static exposure of a "temporally undulating", "non-local" hyperobject<sup>35)</sup> creates the sense of facing the swirling *force* of radiation, accumulat-

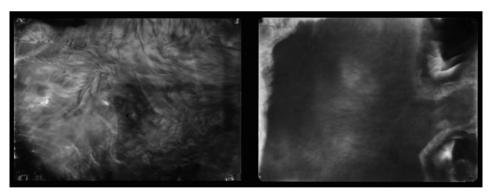


Fig. 1. Alice Miceli: "fragment of a field III - 9.120  $\mu$ Sv (07.05.09–21.07.09)", "fragment of a field V - 9.120  $\mu$ Sv (07.05.09–21.07.09)"

<sup>32)</sup> See e.g. David Bradley's contact prints of animal tissues after the atomic tests in the Bikini Atoll in 1946, or the "atomic shadows" appearing in Hiroshima and Nagasaki after the bombings. Schuppli, "Radical Contact Prints," 277–291.

<sup>33)</sup> Ibid., 291.

<sup>34)</sup> Emily Watlington, "Alice Miceli on X-raying Chernobyl," Art in America, November 11, 2019, accessed April 2, 2022, https://www.artnews.com/art-in-america/interviews/alice-miceli-chernobyl-radiographs-americas-society-56497/.

<sup>35)</sup> Nonlocality and temporal undulation are two of the five interrelated aspects of hyperobjects described by Timothy Morton, which is discussed in the last section of this article about Daniel McIntyre's work. See: Morton, *Hyperobjects*, 38–54, respectively 55–70.

ed over months and condensed onto the photosensitive surface of a single still image. The fingerprints on the edges of the images, and the scratch marks of the on-site anchorage on the surfaces appear as subtle but perceptible traces of a human agency, indicating the past *presence* of the artist, whose intention was to (in)visibly embed her off-screen operation and penetration into the atmosphere of a traumatic area.<sup>36)</sup>

# Nuclear atmosphere and hyperobjects: Lenin's Lamp

Radiographic contact prints of uranium-rich rocks, reminiscent of Bequerel's early experiments, appear in a different context in Swedish Lina Selander's 2011 mixed-media installation. The series of white paper sheets with various rock-shaped black spots were not only part of the exhibition but also 'offered up' for direct touch by becoming the main visual motif on the cover of the accompanying book.<sup>37)</sup> After exposing radiation and its visual recording in such transmedial ways, Selander's 25-minute silent, black-and-white film, another important piece of the installation, further developed the idea of radioactivity, placing it into the historical, cultural, and political context of civilizational energy demand, and the human-nature relationships. The title "Lenin's Lamp Glows in the Peasant's Hut" was borrowed from an intertitle of Dziga Vertov's The Eleventh Year (1928), a silent film about the building of a dam on the Dnieper, shot for the 10th anniversary of the Soviet State. Although Selander's project is anchored in the Chernobyl accident, the film pays little attention to the events or their aftermath, its significance being configured rather by an imaginary chronology beyond history and a web of photographic and physical documents through which Selander associates certain temporal, spatial and visual echoes to the region.38)

Some of the spatial and visual echoes are directly related to the site of the Exclusion Zone, in the sense of what Gernot Böhme describes as the "atmosphere" of a place. The post-apocalyptic mood of the emptied Zone, still under the effects of the constant radio-active radiation, the potential danger, the visiting rules, and the haunting past life all contribute to this atmosphere, which Miceli's work also attempted to capture. Atmosphere in Böhme's interpretation refers to everything that is first and immediately perceived in space, appearing in the interplay of environmental properties and human presence, something that "mediates the objective qualities of an environment with the subjective, bodily-

<sup>36)</sup> As Miceli states about her work on traumatic landscapes in general: "What I propose is an action that is both a performance (that of my own body off-screen) and an exploration of what this action, the penetration into mined areas, means for the image, creating a visual narrative with which to experience treks across the topography of mine-contaminated lands where space, positioning and movement lay interconnected, embedded in the images." See: Miceli, *Portfolio*.

<sup>37)</sup> Helena Holmberg, Lina Selander: Echo: The Montage, the Fossil, the Sarcophagus, the X-ray, the Cloud, the Sound, the Feral Animal, the Shadow, the Room, and Lenin's Lamp Glows in the Peasant's Hut (Stockholm: The Swedish Contemporary Art Foundation, 2013).

<sup>38)</sup> The word "Echo" is also borrowed from one of the intertitles of Vertov's film, from a sequence that juxtaposes the images of construction with a close-up of a Scythian skeleton. At the same time, 'Echo' as a concept illuminating the relationship between the layers of the work, appears in the title of the publication accompanying the exhibition, see: Holmberg, *Lina Selander: Echo*.

sensual states of a person in this environment"<sup>39)</sup>. This essentially spatial concept refers to the way spaces are "*pregnant* with moods" and "quasi-objective sentiments, feelings that are *suspended in the air*," which can be sensed immediately when entering the respective locale. <sup>40)</sup> With all this, atmosphere does not only refer to particular forms of circulation and dynamic interactions between individuals, affects, and spaces, but also recalls the nature of radioactivity, which allows us to think in terms of a 'nuclear' atmosphere in the case of Chernobyl traumascape. Here radioactive contamination intervenes in the engagement with the place, and the (im)materiality of sensual qualities becomes intermingled with the invisible, spectral presence of nuclear radiation, resulting in an extra affective charge. <sup>41)</sup> Nuclear atmospheres, as affective atmospheres, thus embrace and connect such opposite concepts as presence and absence, cognition and emotion, materiality and immateriality, between which they simultaneously maintain a vibrant, oscillating tension.

Embedded into the aforementioned thematic and medial context in *Lenin's Lamp*, there appear some emblematic shots filmed in the present in the Zone, which show the touch of this atmosphere of the traumascape. The interiors of the abandoned, decaying buildings of the ghost town of Pripyat are presented in two different photofilmic modes in the first part of the film: on the high-contrast, perfectly composed, black and white stills the neatness of careful, photographic framing stands in sharp tension with the ghostly assemblage of disintegrating elements and materials. This sequence of images is interrupted by a close-view video footage of ruined, neglected, dusty clothes, household items, books, and furniture left in the buildings of Prypiat in a chaotic jumble, now appearing as a pile of useless objects. The handheld camera follows the artist's bending, constantly moving, off-screen body, sometimes revealing a balancing foot, but mainly mapping the narrow field of vision of the recording person. As it hardly stops for a second, there is no time to focus; due to the movement fluctuations, we move from blurry images to more blurry ones. The abandoned Pripyat blocks of flats filmed from a moving car appear in a tracking shot very similar to this: here the sharp sunlight constantly breaking into the camera lens only gives us a hint of the real scene (Fig. 2). In this sense, the camera image figuratively destroys and spoils further the already decaying and ruined objects, transmitting the haunted and haunting<sup>42)</sup> atmosphere of the place, formed in the in-betweenness of the

<sup>39)</sup> Gernot Böhme, "The Theory of Atmospheres and Its Applications," *Interstices: Journal of Architecture and Related Arts* 15 (2014), 92. Böhme's phenomenological and aesthetic approach may recall Walter Benjamin's concept of aura for the respect and distance exclusively possessed by original works of art, and lacked by their mechanical reproductions. Although it is worth mentioning that Benjamin refers to the concept of aura not only in an artistic sense; in the epilogue of his 1936 essay, talking about the destructive power of war and its entanglement with technology, he also writes about how destruction is extended into the gaseous sphere, poisoning the breathable air: "through gas warfare the aura is abolished in a new way." Benjamin Walter, "The Work of Art in the Age of Mechanical Reproduction" (1936), in *Illuminations*, ed. Hannah Arendt (New York: Schocken Books, 1969), 217–251. (This idea can also be linked to the harmful, gaseous nature of nuclear radiation.) However, Böhme's atmosphere as a new aesthetic program, as Ben Anderson emphasizes, goes further than Benjamin's aura and engages both with the materialist roots and the affective potential of the concept. See: Ben Anderson, "Affective Atmospheres," *Emotion, Space and Society* 2, no. 2 (2009), 80.

<sup>40)</sup> Böhme, "The Theory of Atmospheres and Its Applications," 93. [emphasis in original]

<sup>41)</sup> This undoubtedly correlates to Ben Anderson's extension of Böhme's concept into "affective atmospheres," which refers to the affective 'excess' with which these intensive space-times are saturated. Anderson, "Affective Atmospheres," 80.



Fig. 2. Lina Selander: Lenin's Lamp Glows in the Peasant's Hut, 2011 (stills, black and white)

perceiving body and the uninhabited place. The contrast is further 'echoed' by alternating these shots with photographs of the interiors of museum and archive warehouses, showing the sites of classification, conservation, and preservation as sterile, tidy but similarly silent, lifeless, and haunting places.

Selander's other interpretational framework of the Chernobyl traumascape seems to evoke a logic and perspective of Mortonian hyperobjects, which exist in a time and space "relative to humans." Digging down to the focal point of the nuclear explosion, Selander follows a thread taking to underground areas, where in the first hours after the accident, the radioactive leak and the fire had to be urgently smothered with sand and earth. In an intermedial collage, the news footage about Chernobyl liquidators' hasty and claustrophobic mining work is alternated with glorious images of hydroelectric power plant construction from the twenties, as documented by Vertov's film. The two iconic events mark the beginning (twenties) and end (eighties) of a utopian political system, the start and fall of a social and technological revolution, the optimistic dreams of electrification and nuclear power, and, implicitly, the collapse of the Soviet system. <sup>43)</sup> The fossils of prehistoric plants and animals collected from geological excavations and preserved in museums are contrasted with the image of a 2000-years-old Scythian skeleton from Vertov's film, possibly uncovered during the construction of the dam (Fig. 3). The evocation of these archeolog-

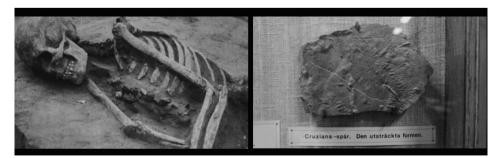


Fig. 3. Lina Selander: Lenin's Lamp Glows in the Peasant's Hut, 2011 (stills, black and white)

<sup>42)</sup> Tumarkin, "Twenty Years of Thinking about Traumascapes," 5.

<sup>43)</sup> On the Soviet socialist dream about modernization see Lisa E. Bloom, "Hauntological Environmental Art: The Photographic Frame and the Nuclear Afterlife of Chernobyl in Lina Selander's Lenin's Lamp," *journal of visual culture* 17, no. 2 (2018), 223–237.

ical layers activate the presence of these different past, (pre)historical periods, and outline an imaginary timeline that in another direction can be extended towards a posthuman, radioactive future, which may only be populated by humanity-surviving, large-scale hyper-objects. <sup>44)</sup> The trace fossils like Curziana, which preserved the movement of such 500 million years old early animals as trilobites and arthropods, appear here as the earliest contact prints,' distantly related to the exhibition opening imprints of radioactive uranium-rich rocks, and the radiographs of hands, fishes and little animals, which are edited together into another intermedial, photofilmic montage of the Selander's video.

# Celluloid hyperobject and personal traumascape: the Lion series

Daniel McIntyre's collection of seven short films shot on 16mm celluloid (*Lion*, 2011–2014) addresses the hyperobjective and affective nature of nuclear trauma in a personal and medium-specifically experimental way. McIntyre invites those explicit, geographical details of the Chernobyl incident into his subjective, lyrical celluloid universe, with which he can associate family relationships, poetic impressions, and personal experiences.<sup>45)</sup> Some of the short films explicitly create the site-specific layers of an imagined affective atmosphere of the traumascape: in episode forever, for example we follow the voice-over recollections of a Chernobyl survivor, who was a teenager in the spring of 1986 when the annual Peace Bike Race and the May Day Parade were held despite the accident; the Chernobyl liquidators' heroism is imagined in the episode cowboys and iodine, while their self-sacrifice is unfolded in episode water. Beyond this, McIntyre creates a celluloid-compatible metaphor for radiation contamination, imagined as radioactive particles traveling in waves, 46 a technique reminding of the emulsion-manipulating, avant-garde experiments of Stan Brakhage, Kurt Kren, or Malcolm LeGrice in the sixties and seventies. These visually disturbing, photochemical, hand-made interventions in the continuity of the emulsion damage and destroy the filmstrip as radiation would — that is, they attempt to display a nuclear atmosphere materializing on celluloid. Unlike the contact prints of Miceli and Selander, in which radiation was let "to expose itself," McIntyre's images are the material imprints of an artistic re-exposure, equally penetrating each piece of the series.<sup>47)</sup>

In addition to devoting some episodes to different radioactive elements,<sup>48)</sup> the 'radioactivity' of the *Lion* series can also be detected through the appearance of the five interre-

<sup>44)</sup> Morton defines hyperobjects recurrently as scale-changing entities, that involve "knotty relationships between gigantic and intimate scales." Morton, *Hyperobjects*, 47.

<sup>45)</sup> For the personal background of the series, see Bombardini's interview with artist: Silvia Bombardini, "Lion," *Zoo Magazine*, no. 43 (2014), 2–5.

<sup>46)</sup> Ibid., 3.

<sup>47)</sup> McIntyre first experimented with different techniques of getting the radiation effects on film "by shooting it." As he explains: "Essentially, to get the same effect on film from radiation, the radioactive source would have to be too strong and it would be unsafe for humans. [...] after some more research, exposing film in the precise way I needed wasn't possible and would just yield a product that was filmed with a layer of fog on it." Personal communication of the artist, via correspondence, May 7, 2022.

<sup>48)</sup> The emulsion destruction techniques are inspired by the different aftereffects of radioactivity specific to the Chernobyl area. Some of the still present radioactive elements are related to different diseases, like thyroid

lated properties of hyperobjects described by Timothy Morton. 'Phasing' (1) for example refers to how hyperobjects, due to their transdimensional quality "phase in and out of the human world," and thus cannot be fully perceived in the usual three-dimensional human scale. 49) Lion not only experiments with going against this concept of undetectable radiation but also endows the filmic medium with the sensitivity to perceive and express radioactivity via its medial devices. By distributing these effects in a recurring manner in all the episodes, the series implements another characteristic, that of 'viscosity' (2), the allpenetrating power of radiation, by which it sticks to everything, making escape or resistance impossible. 50) The experimental techniques fluently transpose 'nonlocality' (3) and 'temporal fluctuation' (4), the invisible and irreversible travel of radiation as "unseen alpha, beta, and gamma particles, floated in air currents across Europe and the Pacific,"51) mixing profoundly different temporalities.<sup>52)</sup> McIntyre edits together various archive images from different cultural backgrounds and different registers (e.g. North American and Soviet commercials, news footage of first May parade, scenes from the Hollywood musical The Sound of Music, shots of radiation panic films) with his own, recent recordings, which are all equally permeated and contaminated by the 'airborne particles' of emulsion destructions (Fig. 4).53)

The fifth property refers to the 'interobjectivity' (5) of hyperobjects, as they exist in the interplay between different objects, revealing themselves by their imprint, their intrusion into something else. Radiation as "floating among objects, »between« them; pointing to the strange interconnectedness of things"<sup>54)</sup> is re-exposed by the dip split process which resulted in the fracture between positive and negative in the same strip of film.<sup>55)</sup> McIntyre's film thus not only refers to Chernobyl's hyperobjective nature, but it is meta-

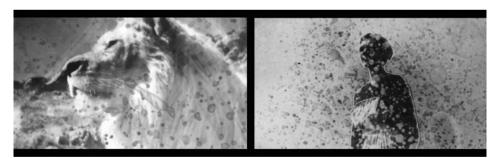


Fig. 4. Daniel McIntyre: Lion series (stills, black and white)

cancer (iodine), leukemia (strontium), liver and spleen damage (caesium). See: Frequently Asked Chernobyl Questions. Episode sodium lamp study is dedicated to Iodine-131, and the treatment of thyroid cancer; and cure to Radium-88 used in cosmetic products; while Strontium-90 appears in the episode the weight of snow.

- 49) Ibid., 70-71.
- 50) Morton, Hyperobjects, 36.
- 51) Ibid., 38.
- 52) Ibid., 55.
- 53) For the details of the photochemical techniques (e.g. hand-applying developer, spray process) applied on the 16mm Kodachrome film strips, see Bombardini, "Lion," 3–4.
- 54) Morton, Hyperobjects, 85.
- 55) Bombardini, "Lion," 3-4.

phorically contaminated by nuclear radiation and its prolonged consequences.<sup>56)</sup> In a similar way to Shevchenko's recording, but through a conscious imitation, the analog film here also appears as a medium affected by radiation, "a type of nuclear sensor narrative," making visible and perceptible something that cannot be empirically experienced.

Although on-site recordings and atmosphere sensing are key motives in Miceli's and Selander's works too, the rituality and affective consequences of the visit to the reactor site in McIntyre's work is explored in a more personal way. The penultimate piece of the *Lion* series, the essay-film-like *the weight of the snow*, is a diary-style chronicle of the transatlantic travel from Canada to Kyev, Pripyat, and the Chernobyl Exclusion Zone, jumping in time back and forth through associations, reminding of Tumarkin's question about the human agency related to traumascapes: "what do these places do to *us*?" <sup>58)</sup> (Fig. 5) For



Fig. 5. Daniel McIntyre: Lion series (2 stills, color)

McIntyre, the affectivity of the Chernobyl trauma becomes a personal experience when he enters the nuclear atmosphere of the site and perceives it as a personal traumascape. The home video shot during the journey and the diary-like voice-over also document this cathartic effect, which was triggered not by what was actually seen or experienced there, but because of the fantasies and memories evoked by the Zone. The constantly measured and documented level of radioactivity reminds of the sister's cancer treatment and radiation therapy reflected in *sodium lamp study* episode; while the wild horses seen from afar vividly recall one of the past journeys with the then-dead grandmother. Jien is permeated by the nostalgia of remembering the grandmother's religious devotion with a reference to the biblical story of Daniel in the lion's den, which is also a distant allegory of the artist's journey to Pripyat. The encounter with the radiation-contaminated zone generates private expressions of grief, fear, and anxiety — and at the same time relief, which seems to be related to the peculiarity of the atmosphere, that it can fill the space with emotional nuances, and at the same time makes the subject aware of its own presence. Display to the atmosphere of the same time makes the subject aware of its own presence.

<sup>56)</sup> Barcz expresses a similar idea in relation to literary works, see Barcz, *Environmental Cultures in Soviet East Europe*, 135.

<sup>57)</sup> Ibid., 137.

<sup>58)</sup> Tumarkin, "Twenty Years of Thinking about Traumascapes," 10.

<sup>59)</sup> After beginning to work on the project, the coincidence of some tragic family events — the death of her grandmother and her sister's cancer — contributed to elaborating the original plan into an extended work. For details see the interview with McIntyre, Bombardini, "Lion."

<sup>60)</sup> Gernot Böhme and Jean-Paul Thibaud, The Aesthetics of Atmospheres (London: Routledge, 2016), 89.

#### Conclusion

The three works of art discussed show that even after three decades, the Chernobyl Exclusion Zone appears as a traumascape saturated with an affective atmosphere that is equally accessible and perceptible to visual artists and filmmakers from different cultural backgrounds and continents. This is also influenced by the globalization of the Chernobyl phenomenon and the strengthening of its symbolic importance, which was not only served by the awareness of the risks associated with nuclear energy, but also events that keep it on the agenda, such as the Fukushima Daiichi triple disaster in 2011. At the same time, it becomes more and more visible that, due to the interdependence of capitalist systems, natural disasters can no longer be completely separated from the technological, economic, and political entanglements that exist behind them, 61) which may also contribute to the creation of such transcultural projects.

As I've argued above, the radiographic negatives of Chernobyl Project recording the invisible, spectral presence of gamma rays, the pre- and posthistorical contextualization of atomic energy, and the capturing of the haunted and haunting atmosphere of Pripyat in Lenin's Lamp Glows in the Peasant's Hut and the artistic re-exposure of the nuclear atmosphere to celluloid in the Lion series all contribute to the exploration of the affective nature of nuclear trauma through the hyperobjective qualities of radiation. Their non-narrative and experimental strategies use both the medial properties of photography and film, representing radiation on a scale between movement and immobility, present and past, life and death: while Miceli's contact prints freeze the swirling dynamism of invisible rays into still images, Selander's work operates with archive and recorded, black and white, still and moving images, as McIntyre explores the imaginative representation of nuclear radiation and implements movement onto different cinematic layers (moving images, montage and exposure).

According to Freud's conceptualization, an event is registered as traumatic only by deferred action (Nachträglichkeit), through a later event. In other words, there is a need for something else to happen, to retrospectively recognize the trauma of the original incidence. This idea echoes the theories of Caruth, Felman, and Hartmann, who emphasized that trauma is not directly triggered by the original happening, but is formed in the subsequent processing. "It always takes two traumas to make a trauma." — as Jean Laplanche puts it. 62) In this sense Miceli, Selander, and McIntyre's contemporary 'traumatomic encounters', their photofilmic explorations created decades after the reactor accident, provide a more nuanced and contoured insight into the nature of the Chernobyl trauma, joining the discourse of its understanding and processing, which in itself attests that the interpretation of the original trauma event is still under construction.

<sup>61)</sup> Jean-Luc Nancy, After Fukushima: The Equivalence of Catastrophes (New York: Fordham University Press, 2015), 4.

<sup>62)</sup> Quoted by Hal Foster, The Return of the Real: Art and Theory at the End of the Century (Cambridge and London: MIT Press, 1996), 29.

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