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"A New Chernobyl": Narratives of Nuclear Contamination in Russia's 2022–3 Ukraine War

Abstract: In January 2020, I visited the Chornobyl Exclusion Zone as part of research into contemporary narratives that characterized the Zone as a post-human area of timeless and infinitely abundant nature. By the time the resulting paper appeared, however, war had altered the stories being told about the Zone. As I wrote in an afterword, media narratives of the Russian invasion of Chornobyl transformed radioactivity itself into a natural and national part of the Ukrainian landscape, one that was by turns vulnerable (in need of defense and protection) and vengeful (punishing Russian intruders). But what does it mean for anthropogenic radioisotopes to be either 'natural' or 'national'? How might such narratives destabilize readings of the nuclear as inherently disruptive and alien? And does this destabilization make possible new understandings of the Anthropocene as an era defined by the dispersal of anthropogenic radioisotopes? In this paper, I engage in close analysis of media narratives surrounding the Russian invasion of Chornobyl, drawing on both the nuclear humanities (particularly Joseph Masco's work on the "nuclear uncanny" and Kate Brown's history of Chornobyl) and human geography perspectives on the constitution of place. I ask what affordances emerge from a view of radiation as other than contaminating and what dangers might be present in the same claim.

Keywords: energy humanities, nuclear humanities, environmental humanities, Chernobyl

Introduction

When Russia launched a full-scale invasion of Ukraine on 24 February 2022, there was little question that a new era of nuclear anxiety and negotiation had begun. Not only did the invasion and the West's financial and military support of Ukraine raise the possibility of Russian nuclear warfare, but the fraught relationship between Russia and Ukraine has long been entangled with the history of nuclear power. The 1986 Chornobyl[1] Nuclear Power Plant accident, which poisoned and/or permanently displaced hundreds of thousands of Ukrainians and contaminated a large area of what is now Ukrainian land, is strongly linked in the Ukrainian national imaginary to subjugation by Moscow and the birth of post-Soviet Ukrainian national identity (Dawson 1996, 67–79). At the same time, post-Soviet Ukraine's capacity to produce and control nuclear power has become a significant site — especially in the context of successive political revolutions that emphasized a movement away from Russian ties and Soviet practices that was also a movement towards Europe — at which the nation stages its socio-technological modernity and independence from Russia, particularly given the potential of nuclear power to liberate it from energy dependence on Russian gas (Dawson 1996, 81; Kasperski 2015). It's therefore not surprising that the nuclear emerged immediately as a prominent part of the Ukrainian war narrative — first with the capture of the Chornobyl Nuclear Power Plant and surrounding territory by Russian forces on the first day of the invasion, and secondly in the long tension surrounding control and maintenance of the Zaporizhzhia Nuclear Power Plant after its seizure by Russia in March 2022.

What *is* surprising is the way in which Ukraine's nuclear landscapes have been refigured through their mobilization in the ongoing war narrative. Previously, Chornobyl and its irradiated "Zone of Exclusion" have appeared as a site of national injury where Ukrainian identity and heritage themselves were subject to contamination and destruction. They have also functioned as a site at which (chiefly Anglophone) anti-human fantasies of ecological resilience can be staged in ways that relieve and sustain the Anthropocene. In media narratives of the 2022 war, however, Chornobyl emerges at multiple points as a site *of* Ukrainian identity; a Ukrainian identity that nonetheless incorporates the wound of toxicity as part of its own national-ecological body while negotiating toxic suffering in the context of other concerns. Here, I explore how such a negotiation runs counter to established 'toxic discourse,' and contrast it to the way that 'Chornobyl'-as-signifier is used transnationally to articulate Anthropocene anxieties and obscure non-toxic moral demands.

1 In keeping with current Ukrainian preferences, I have chosen to transliterate the site of the 1986 disaster as 'Chornobyl' where not directly quoting or referencing sources that use 'Chernobyl.'

Another Chernobyl

On the first day of the February invasion, Russian forces entered the Chornobyl Exclusion Zone, an approximately one-thousand-square-mile area where human activity is highly restricted due to lasting radiological contamination from the 1986 accident at the Chornobyl Nuclear Power Plant. By nightfall, the Russians had seized control of the power plant. Throughout the following month, anxiety propagated regarding the status of the power plant and its Ukrainian staff, as well as the activity of Russian soldiers within the Zone; the Russian capture of the Zaporizhzhia Nuclear Power Plant, following clashes between Russian and Ukrainian forces that resulted in a fire near the power plant on 4 March, intensified the circulation of conflicting risk reports. It also intensified the circulation of Chornobyl rhetoric; invocations of Chornobyl as historical memory, as material site, and as specter of the future. International news media abounded with warnings of a "second Chernobyl" (Millard and Smith 2022) or "another Chernobyl" (Harshaw 2022; CBS/AFP 2022; Meshkati 2022) in spite of debate about what level of risk the Russian attacks actually posed (Gordon 2022). In late July, conflict around the Zaporizhzhia plant reignited, leading to a new wave of fears about "another Chernobyl" (Olson 2022) or a "new" (Shinkman 2022) or "second Chernobyl" (Bishop 2022), in part seizing on remarks to this extent by Turkish president Recep Tayyip Erdogan (Strozewski 2022).

This rhetorical mobilization of Chornobyl was not confined to international news media. During the attack on Zaporizhzhia in March, Ukrainian president Volodymyr Zelenskiy gave an address on Telegram and Instagram in which he called on "all Ukrainians and all Europeans, all people who know the word *Chernobyl*" (Borger and Henley 2022) to raise alarms about the situation. Later, in an address broadcast on the 26 April anniversary of the Chornobyl disaster, Zelenskiy (2022b) suggested that Russians "do not comprehend what Chernobyl is, in the least bit," or that—in contrast to Ukrainians, who remember—they had "forgotten what Chernobyl is." The word 'Chernobyl' really ought to be demarcated in brackets in here, as Olga Bryukhovetska opts to do in order to emphasize the way in which the name has become a "nuclear signifier," a "knot" of "multiple avenues of meaning" that "acquire[s] different, sometimes opposite, meanings with the changing historical moments" (Bryukhovetska 2016, 97–98). Courtney Doucette (2019), too, observes how the name "Chernobyl" emerges again and again as invested with varying types of meaning; astutely, she suggests that new Chornobyl texts, including the recent HBO miniseries, send "clear messages about the significance of the event for the present" (842) at the

same time as this significance is sometimes built upon fantasy rather than history (845). The polysemy of 'Chernobyl,' as well as the affective power it possesses as a symbol, means that we must closely interrogate what it actually *does* mean to "know the word *Chernobyl,*" and what invocations of a "new Chernobyl" actually suggest.

For Ukrainians, Chornobyl occupies a significant role in the national imaginary. Adriana Petryna, writing in the context of the current conflict, suggests that the Chornobyl disaster inflicted a kind of collective trauma on the people of Ukraine, one that is closely linked to or even indistinguishable from material damage: "the memory of the explosion is carved into Ukraine," she argues, and Russian invaders are "stirring up radioactive particles and also Chernobyl's painful legacy" (Petryna 2022). In her account, Russians trespass into the ground (both physical and metaphysical) of Chornobyl—the "violent encounter between 'Chernobyl invaders' and Chernobyl survivors"—is "its own act of aggression." In many ways, this aligns with the narrative of Chornobyl that is presented in Kyiv's National Chornobyl Museum, where the accident is both national and nationalizing tragedy. The museum's logo (Figure 1.) features the so-called 'Partisan's Tree,' a large pine near the Chornobyl Nuclear Power Plant where Nazi invaders hung Ukrainian partisans during the Second World War; in the logo, the tree appears as a deathly silhouette surrounded by ghost apples, while the bright living apples themselves hover in darkness to the tree's left. Throughout the museum, the apple tree functions as an emblem of the (again both physical and metaphysical) Ukrainian national body, its broken branches symbolizing both a loss of heritage and damaged biological fertility (Ferebee 2022). The twinning of the apple tree and the partisan pine in the logo links this "broken" national body to an image of eternal-but-wounded Ukrainian resistance.

The anthropologist Yaroslava Yakovleva (2014) is among those who argue that the centrality of agriculture and 'native land' to Ukrainian culture has influenced the Ukrainian experience of Chornobyl as a cultural shock. The forced displacement of hundreds of thousands of inhabitants from their native Polesia as a result of the disaster caused lasting trauma. But, more broadly, the alteration and sudden unfamiliarity of the Polesian environment caused Ukraine to become alienated from its own material terrain (Bryukhovetska 2013). This interpretation is still present in many narratives of Chornobyl; a 2022 *New York Times* piece (Bubola and Kuznietsova) that interviews Chornobyl survivors about the recent nuclear threat presents the Polesian terrain around Chornobyl as irrevocably lost to its prior inhabitants. "When I visited my native village [after the accident]," a survivor recalls, "my heart ached the same way." In other words,

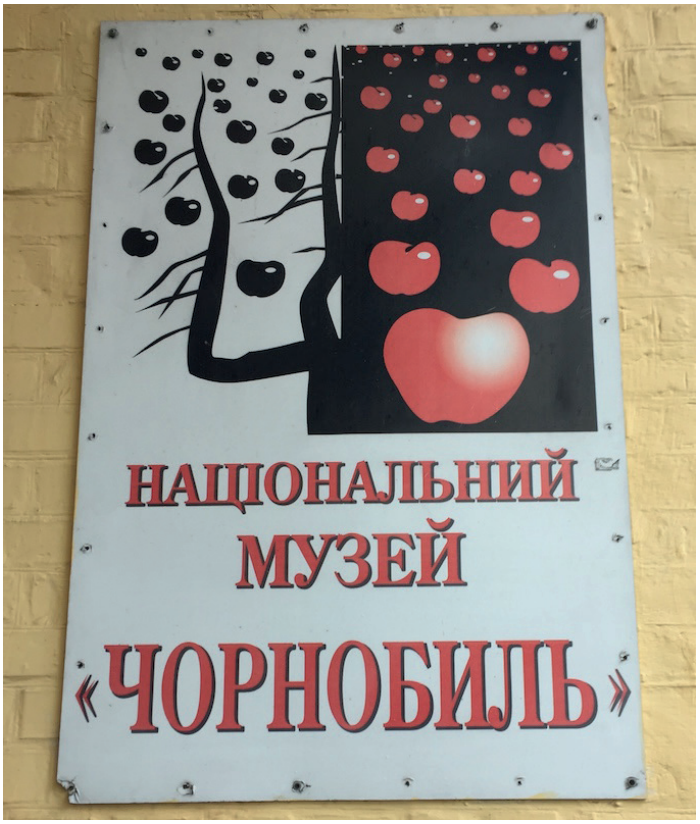

Figure 1. The logo of the National Chernobyl Museum in Kyiv, 7 January 2020 (K. M. Ferebee, photo of Chernobyl National Museum from the author's personal collection)

though the village is still present, it is also *not* present; the change that it has suffered is too abrupt and radical.

This narrative aligns with that presented by Ukraine's National Chornobyl Museum, where the irradiated territory of the Zone is figured as an injury to the very heart of what it is to be Ukrainian. Notably, the museum expends huge amounts of space on displays that connect traditional rural handicrafts and religious faith to the disaster: paintings of angels in the style of Orthodox Christian icons are juxtaposed with the protective uniforms of Chornobyl liquidators (Figure 2.), and the names of abandoned villages line a processional hallway that is draped in *rushnyky*, a traditional form of embroidered cloth (Figure 3.). The lost or 'broken' land of the Exclusion Zone becomes identified here not only with Ukrainianness, but with a vision of Ukrainianness that is opposed to the Soviet goals of modernization and atheism. In Pripyat, as in other Soviet "nuclear cities," there were no churches, though many inhabitants maintained religious faith (Boltovska 2019, 464–5).

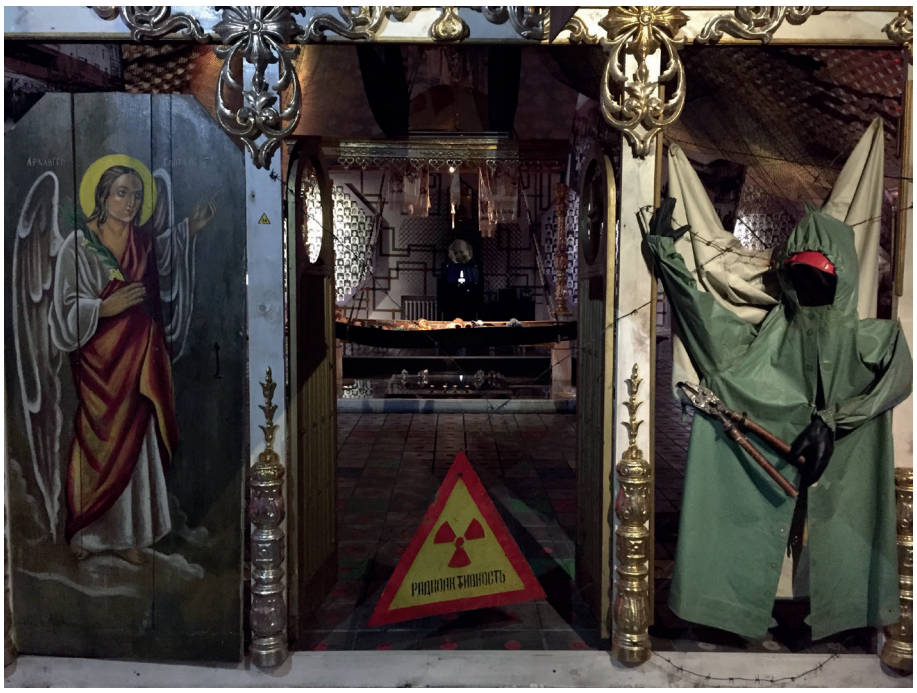

Figure 2. An image of Kyiv's National Chernobyl Museum in which an Orthodox angel and a Chernobyl liquidator's uniform are posed similarly on opposite sides of an archway, 7 January 2020 (K. M. Ferebee, photo of exhibit at Chernobyl National Museum from the author's personal collection)

At the time of the National Chornobyl Museum's founding, in April 1992, this vision was more representative of popular Ukrainian understandings of Chornobyl. In post-Chornobyl Soviet Ukraine, the anti-nuclear movement that emerged in response to the disaster was closely connected to what Jane Dawson describes as "the resuscitation of Ukrainian national identity" (1996, 79). Indeed, Dawson argues, the anti-nuclear movement was "a catalyst for nationalism" (ibid). The entwinement of anti-nuclear and national independence movements was facilitated by a sense that nuclear power was Moscow-based and imposed (with its attendant risks) by Moscow upon Ukraine (Dawson 1996, x; 67). Additionally, the nuclear city of Pripyat was populated by largely Russian-speaking migrant workers with a distinct identity: "young, ethnically and culturally mixed, Russified, and prosperous" (Boltovska 2019, 464). While many of these workers possessed strong ties to family homes in rural Polesia, the city itself—as modern melting pot—materially represented, to some extent, a Soviet modernity that intruded upon and threatened traditional rural life. The accident at the Chornobyl NPP resulted in the displacement of many thousands of Polesian villagers from their rural homes and the way of

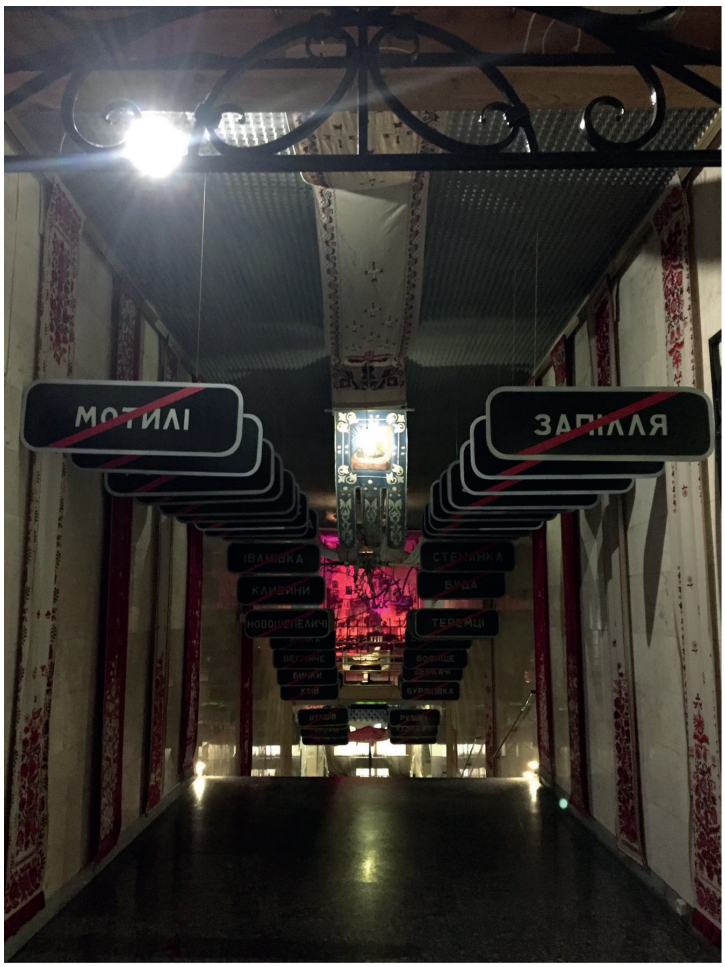

Figure 3. The hallway of lost villages in the National Chernobyl Museum, Kyiv, 7 January 2020 (K. M. Ferebee, photo of hallway in Chernobyl National Museum from the author's personal collection)

life associated with those homes; neatly supporting a narrative in which radioactivity and Russian rule represented a dual and intertwining force of violence against the physical and metaphysical purity and wholeness of a 'natural,' pre-Soviet Ukraine.

Yet in the years following Ukrainian independence, that narrative has been complicated in several ways, as independence meant, Dawson notes, that "nuclear power no longer represented Moscow's dominance in Ukraine; instead, it came to symbolize Ukraine's potential to sustain itself as an independent and self-sufficient country" (1996, 81). The Soviet perception of atomic power as symbol of modernity—the "key to overcome economic and political weaknesses and insure a bright national future" (Kasperski 2015, 57)—remained influential in Ukrainian attitudes towards

nuclear power. When nuclear power was decoupled from Muscovite rule, the anti-nuclear environmental movements that had been entwined with independence lost a great deal of their momentum (Dawson 1996, 81). Nuclear power itself now promised a new form of independence: independence from Russian oil and gas (Kasperski 2015, 64–5), on which Ukraine (like much of Western Europe, in ways that would become problematic during the 2022 conflict) was heavily reliant. This shift in attitudes renders Chornobyl, as historical memory and material site, somewhat ambivalent: it cannot function as Russian-inflicted national injury and wound to Ukrainian nature (or Ukrainian naturalness) if Ukraine itself is imagined as a nuclear nation. So then: how can it function instead?

A New Chornobyl

One of the most curious Chornobyl documents to appear in the early days of the 2022 war was an interview in the fashion magazine *Harper's Bazaar* with a former Chornobyl tour guide, Lara Graldina. Graldina, who is also a model, took part in a photo shoot for the magazine in which she wears a #Chernobyl Hero' t-shirt. She describes Chornobyl as "the most vulnerable part of Ukraine," a part of Ukraine that has been "betrayed by [Russia-allied neighbor] Belarus" (Pendlebury 2022). Seemingly reluctant to have left behind her job—she says that she has taken up smoking, because "if [she] can't work at Chernobyl, [she] need[s] something new to damage [her] health"—she makes a rather striking comment: "[I]t wasn't radiation that stopped everything for me, it was Putin" (ibid). Chornobyl appears as toxic, but toxic in a way that is welcome and desirable, in contrast to the unwelcome violence of the Russian invasion. It is part of a Ukrainian "everything" that Russia seeks to destroy.

The Ukrainian author Markiyan Kamysh, whose memoir of his illegal travels in the Chornobyl Exclusion Zone appeared in English in 2022, portrays Chornobyl similarly in a March 2022 piece for *BOMB* Magazine, which he titled "On Ukrainian Chornobyl, which we have lost—for now." Not only does Kamysh describe Chornobyl as "lost," echoing Graldina's attribution of vulnerability, but he wavers between nonhuman and human (female-gendered) characterizations. He has dedicated his life to the Exclusion Zone, he writes. "Now I don't have it anymore. The Russians took her yesterday." Like Graldina, he openly acknowledges that this "beautiful" Chornobyl is toxic while also embracing its toxicity. His father, he explains, was a Chornobyl liquidator who died of radiation-related thyroid cancer when Kamysh was fourteen. Kamysh's vision of the Zone is consequently

realistic—wrecked, radioactive, and unpleasant—yet, also, written rhapsodically. In his memoir, he writes that he and other illegal "tourists" who wander the Exclusion Zone "seek out the most contaminated sleeping spots, much on sand from the [highly radioactive] Red Forest, and rummage in boxes full of radioactive junk[.] [...] Radiation fetishism serves as a ceremonious rite of initiation into the caste of idiots" (2022b, 50–1). This is almost certainly exaggeration, but it is exaggeration that becomes interpretable when Kamysh describes habitually drinking water from the Zone: over five years and thousands of miles, he writes, "[he's] absorbed all the poison, all the background radiation and the radionuclides of Chornobyl Land, which has long become [his] home" (2022b, 51). How else to affirm one's identity when that identity is profoundly marked by toxicity than to defiantly embrace the toxic, even to the point of mourning its loss?

In these texts, there is a sense that it is not only the space of Chornobyl but its very toxicity that is deeply Ukrainian and to be defended. It is interesting to read, through this lens, the media coverage and memes that emerged from Russia's occupation of Chornobyl, much of which focused on the likelihood that Russian soldiers had, in their ignorance of the area, only succeeded in poisoning themselves. The most factual versions of this media narrative centered on lack of Russian preparation (including lack of protective gear for soldiers) and the extent to which Russian forces had traveled into highly radioactive areas and stirred up large volumes of radioactive dust (Reuters 2022). However, more comic and sensationalized versions abounded: "Russian mutants lost this round of [Chornobyl-themed video game] @stalker_thegame," the Ukrainian Defense Ministry tweeted, suggesting that "losses caused by... radiation exposure" were a major factor in Russian withdrawal (Chappell 2022). Widely-circulated internet memes depicted, for instance, cartoon Russian soldiers with melting faces (Figure 4.) or images of radiation warnings in the Zone with superimposed text that mockingly wished Russians good luck (Figure 5). The manner in which these memes figure the landscape and even the radioactivity of Chornobyl itself is as resisting occupation. Radioactivity is, this discourse suggests, not an alien and violent imposition upon the territory of Ukraine, but in fact Ukrainian or, in some sense, 'fighting on Ukraine's side.'

Such a suggestion should not be taken as dismissing or minimizing the dangers of radioactivity. Rather, it suggests a sense of intimacy with these dangers that has complex roots and more complex effects. Thom Davies, discussing Ukrainians who continue to eat wild food from contaminated areas, points out that many of those who do so know the risks of radiation, as they, like Kamysh, have close personal connections to those who

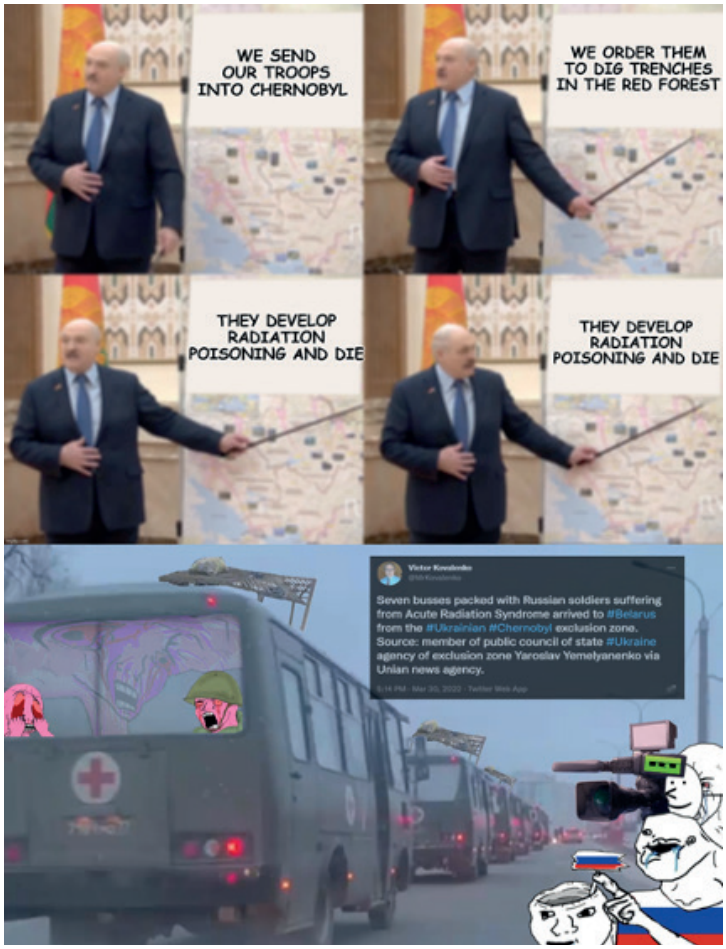

Figure 4. Two memes. The top meme shows Alexander Lukashenko, the president of Belarus and noted Putin ally, at a 1 March 2022 security council meeting where he appeared to reveal Belarussian-Russian plans to invade Moldova and expand troop presence in Ukraine. The format of the meme references another popular meme: a four-panel format in which the animated supervillain Gru, a character in the *Despicable Me* film franchise, appears in each panel pointing to a chart outlining his evil plan. The fourth panel typically features Gru realizing a fatal flaw in his plan.

have suffered serious health effects (2018, 2). Petryna describes the case of a Polesian woman whose husband as well as her son suffer from severe Chornobyl-related health problems, and who herself begins to experience health effects from her work at Chornobyl, yet who resists state warnings regarding the consumption of berries and mushrooms and who suspects that such risk guidance might be 'a swindle' (2002, 88). In part, such attitudes seem connected to the ubiquity of such risk and to individual powerlessness in the face of it: since 1995, food merchants in Kyiv (the closest major metropolis to the Chornobyl area) have no longer been required to display measurements of their products' contamination levels, and though

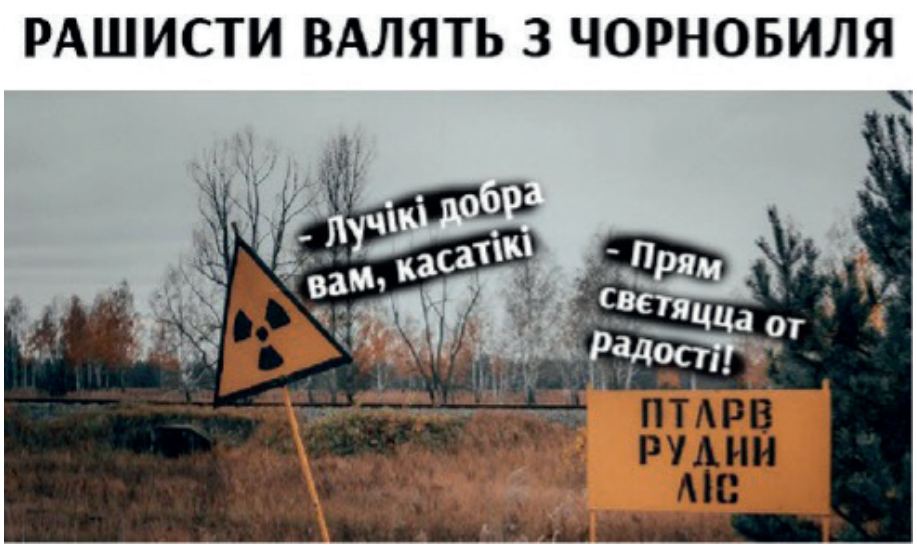

Figure 5. A Ukrainian meme: the top text reads: "Rashisti [a widely-used informal term that combines *Rossiya*, Russia, with *fashist*, Fascist] fleeing Chernobyl." The sign at left reads: "Rays of goodness [a commonly used expression of warm wishes, but here also suggesting the 'rays' of radiation] to you, darlings." While the sign on the right is states: "They really glow with joy!" which is clearly playing on the common idea that radioactivity causes objects to glow). I am grateful to Liubov Vetoshkina for her assistance with parts of this translation.

some food manufacturers advertise their products as uncontaminated, there is no regulation of such claims (Phillips 2002, 30) and therefore no way to reliably monitor one's exposure to radiation.

Not only are the risks ubiquitous, but they are also opaque in their calculation and impermeable to human senses. Radiation cannot be seen, heard, smelled, tasted, or felt; its odd timescales, insofar as it can kill in microseconds but can also endure for hundreds of thousands of years, cause it to be experienced as "uncanny" (Masco 2006). Radiation also produces both deterministic and stochastic effects: that is, while certain effects of radiation are predictable and proportional above a certain threshold, effects whose severity is not proportional to dose and whose occurrence is probabilistic rather than predictable also exist. As a consequence, the danger posed by radiation is always 'uncertain,' and scientific predictions can sometimes contradict the lived experience of those experiencing said danger (Petryna 2002, 17). Indeed, Ulrich Beck suggests that a key characteristic of this type of danger is that it "initially only exist[s] in terms of the (scientific or anti-scientific) knowledge about [it]" (1992, 23), that "even where it is in plain view, qualified expert judgment is still required to determine it 'objectively'" (1992, 27), that indeed it can only become "visible or interpretable" as a danger through tech-

noscientific mediation (ibid). The impossibility of *knowing* danger therefore becomes a central part of the post-Chornobyl experience. Petryna describes how "[t]he apparent arbitrariness of the [health risk] situation prompted people to search for other resources and clues to render an uncertain and unknowable world knowable and inhabitable in some way" (2002, 63). Agents of risk—"invisible but omnipresent pollutants and toxins"—assume the role of "the spirits" in a "kind of new 'shadow kingdom,' comparable to the realm of the gods and demons in antiquity, which is hidden behind the visible world," and interacting with them involves "evasion rituals, incantations, intuition, suspicions, and certainties" (Beck 1992, 72–4).

Toxic Discourse

The less that the risks produced by Chornobyl are perceived to be controllable and the more that they are perceived to be ineradicable, incalculable, ubiquitous, and shared—the more, in other words, that the toxicity of Chornobyl becomes a normal or even "natural" part of life—the less Chornobyl itself (as accident and site) seems to participate in what Lawrence Buell describes as "toxic discourse." This is a genre that draws heavily upon the pastoral ideal and moral melodrama in order to mobilize communities towards social-environmental justice. Buell specifically mentions Chornobyl as one of many examples that thus function both as incidents and as figures in a postindustrial imaginary of "environmental apocalypticism" (1998, 642). Toxic discourse builds upon the rhetorically potent "illusion of the green oasis" (Buell 1998, 648) that is positioned as the natural state of the earth and the natural home of humanity, contrasting the promise of this oasis-home with the threat of "a world without refuge from toxic penetration" (ibid). The emotional-aesthetic content of both discourse and response (Buell refers to the "sheer eloquence—the affect—of testimony or ordinary citizens' anxiety" [665]) has a remarkable capacity to provoke judgment in the absence of evidence. As Buell somewhat ambivalently notes, this may, at times, be justified in situations where a "climate of scientific and legal complexity" (660) is incapable of meaningfully articulating or accounting for risk. Yet, at the same time, its "shrill apocalypticism" (662), reliance on affective production, and mythologization of the uncontaminated past are problematic in ways that the case of Chornobyl clarifies.

Take, for example, the recent theorization of Chornobyl by Gabriele Schwab. Schwab appears to be working from an inaccurate grasp of the

facts of the Chornobyl accident (amongst other problematic claims that populate her book);[2] she references, in what seems to be a misinterpretation of testimony collected by Svetlana Alexievich, abandoned Polesian villages "where native plants — burdock, stinging nettle, and goosefoot — were taking over the untended communal graves of radiation victims" (2020, 165). In Alexievich's book, the "communal graves" (2005, 120) appear to be a reference to old war graves that were previously tended by village residents, now evacuated, rather than the graves of radiation victims. The reference also resonates with a mention, in the previous testimony, that liquidators would bury abandoned "[d]resses, boots, chairs, harmonicas, sewing machines" in ditches and call the ditches "communal graves" (Alexievich 2005, 119). In Schwab's very different vision, villagers died from radiation poisoning in such numbers and at such a rate that their (mass?) graves were abandoned (2020, 165). In reality, the official death toll of the Chornobyl accident is thirty-one, of whom some died months after the accident (Petryna 2002, 2). The difficulty of reckoning with the scale of Chornobyl's suffering is not due to the scale of the disaster as mass fatality event, but rather due to the slow, distributed, and difficult-to-quantify effects of radiation on survivors. The fantasy of mass fatality, however, is consistent with Schwab's portrayal of the Chornobyl Exclusion Zone as a "deathworld," a "mutant transitional space of the living dead" (2020, 165–8). Schwab's use of a continual present tense that conflates testimony from 1986 with the current era collapses all events into one unchanging moment of destruction. In Schwab's view, Chernobyl is overshadowed by death and oscillating between "traumatic shock and a haunting from the future" (168). This is, indeed, a vision of "a world without refuge from toxic penetration" — and, not only that, but a world in which toxicity is synonymous with death.

But toxicity, even nuclear toxicity, is *not* synonymous with death — neither with Schwab's ahistorical deathworld (which she uses to pose the classic toxic-discourse question, "[h]ow many Chornobyls or Fukushimas does it take to convey that we depend on clean water, air, and soil for our survival?" (2020, 147) nor with the mirror image of this deathworld, the cleansing death-of-humanity that is also characteristic of Chornobyl narratives. In the latter case, exemplified by the 2011 PBS *Nature* documentary "Radioactive Wolves" and by Henry Shukman's travelogue of "Chernobyl, My Primeval, Teeming, Irradiated Eden" (for further examples see Ferebee 2022), human self-immolation makes way for a return to the "green oasis" that preceded human civilization and is the natural state of the world. Both of these extremes posit nuclear toxicity as something that is fundamentally apocalyptic insofar as it is unincorporable or un-re-incor-

2 For example, Schwab somewhat oddly suggests, citing a discredited and fringe work of popular history, that Robert Oppenheimer was a Soviet spy.

porable. In each case, nuclear toxicity's unincorporability quite literally ends time: locally collapsing the temporality of the Chornobyl Exclusion Zone in Schwab's account so that it becomes meaningless to order history, since history is over; or, in the Edenic account, completing a circuit so that mythic past becomes joined to mythic future. These Edenic accounts of Chornobyl almost without exception focus on the Exclusion Zone as an ancient wilderness that simultaneously stands in for a post-human future (Ferebee 2022). Though, in the Edenic account, the Exclusion Zone is Edenic precisely because it is too toxic a place for humans to safely live, this toxicity is made invisible through the image of an inexhaustible nature whose vitality is greater than the anti-vitality of the Anthropocene, here embodied by the radioactive. Humans cannot safely live in the Zone because they are not 'natural,' such narratives imply; whereas animals, because they *are* natural, can do so.[3] (Shukman [2011] portrays Chornobyl self-settlers as living a "rustic" and "timeless" life that, apparently, is enough to protect them). In both the deathworld and Edenic narratives of Chornobyl, the end of 'time' is not the end of 'things'; the world *is*, but the world does not 'continue.' Or rather: the world *is*, but the world is, in a sense, post-sense. Ted Toadvine links apocalyptic imaginings to the end of "the world *as we know it*, the total horizon of meaning, value, and possibility within which our lives unfold" (2018, 56); I would suggest that the apocalypse as end of the "meaningful" world/initiation of the "deathworld" (and as substitution of the world-as-nothing-but-itself for the world that is both virtuous and replete with virtualities) fundamentally signals an end of the making-of-sense. Or rather: a refusal to imagine the unfolding of a particular kind of sense.

Apocalypse vs. Apocalypse

Why is nuclear toxicity a site at which so many stage a refusal of sense? Without delving too deeply into the work of Derrida, I think that there is perhaps something in his notion that apocalyptic language itself participates in the apocalypse it proclaims (Derrida 1984, 35) and that the discourse of nuclear toxicity is in this sense a calling-forth of something that is very much desired; which is an escape from the necessity of imagining a world into which the nuclear toxic has been incorporated. In other words, it is a refusal to imagine the possibility that nuclear toxicity might profoundly change the world but not destroy it—the possibility that both the human and the nonhuman might outlast what they are imagined to be, their current "horizon of meaning, value, and possibility (Toadvine 2018, 56).

3 Shukman (2011) portrays Chernobyl self-settlers as living a "rustic" and "timeless" life that, apparently, is enough to protect them.

Derrida himself sketches the paradoxical shape of the "apocalypse *without* apocalypse" that results from a refusal of apocalypse, in which "the catastrophe would perhaps be *of* the apocalypse itself…a closure without end, an end without end" (1984, 35). What is apocalyptic is the fact that the apocalypse is not coming (or rather, perhaps, that the apocalypse can only ever be imagined in advance of itself, owing to the fact that any real "end" would necessarily postdate representation). There will be no posthuman Eden in which natural abundance erases the specter of radiation, and there will be no deathworld in which the specter of radiation erases everything else. Rather, the very persistence of this world denies us the ability to manufacture "meaning, value, and possibility" from it—or, more accurately, reveals that the means through which we did so were always tenuous and flawed.

When I refer to making "meaning," I am drawing on the way in which Jean-Luc Nancy discusses bodies as having (or, more pertinently, not having) a sense. Nancy argues that our world is increasingly exposed as "ecotechnical," and that the ecotechnical destabilizes both linear narrative logics and binaries of natural/artificial. "[F]or the projections of linear histories and final *ends*," he writes, the ecotechnical "substitutes the spacings of time, local differences, and numerous bifurcations" (2008, 89). It "deconstructs the system of ends, renders them unsystemizable, nonorganic, even stochastic" (ibid). Thus: "[t]he world of bodies has neither a transcendent nor an immanent sense" (ibid); importantly, it "owes its *technē* and its existence, or better, *its existence as technē*, to the absence of a foundation, that is, to 'creation'" (101). As Henk Oosterling (2005, 96) has noted, in my opinion correctly, what Nancy calls "world" (*monde*) in his work seems to be what Derrida discusses as *khōra*: the precedent to and mother of legible being, the unformed ferment that "has no meaning or essence" (Derrida 1995, 103) and is defined by its situation outside of the sensible or the intelligible (103–4). *Khōra* invites or even demands a making-sense-of, but it is not the sense that is made of it. It *precedes* the sense that is made of it. I say *precede* in a very specific sense that Derrida highlights, in which "[*b*]*efore* signals no temporal anteriority" (125) insofar as *khōra* is eternally prior to (one might say "outside of") "the meaning of a past" (ibid). All of this sounds very abstract, but in fact, as Derrida also points out (109) it is *not* abstract. *Khōra* refers very materially to a territory or region. The Ancient Greeks used the term in its non-philosophical sense to refer to the land or environment that exists in opposition to the *polis*, the mapped and ordered city, and the concept of *khōra* is used somewhat differently in rhetorical studies to discuss material, embodied practices (Ulmer 1994; O'Brien 2020). So it is not particularly odd to

suggest that *khōra* is the material world prior to sense or meaning, an ecotechnical world that is stochastic and neither sensible nor intelligible.

In outlining this vision of *khōra,* I wish to evoke a world without reference to 'nature,' a world in which there is no 'natural state of things' from which all else exists only as deviation. The 'natural state of things' is of course the Edenic to which toxic discourse hearkens back, the world-as-it-was-created. (Of course, we understand that this is not, in any historical-scientific sense, how the world was when it came into being. This helps us to understand that the Edenic does not acquire semantic force through any particular historical-scientific situation, but rather through its mythic-symbolic signification). Meaning is interpreted in part through the measurement of difference: thus, in toxic discourse, deviation from the "natural" (Edenic) is mobilized for both aesthetic and moral impact. This deviation is usually characterized in resolutely spatiotemporal terms; we are 'far' from the natural, or it is eternally receding into the 'past,' as Raymond Williams (1973) famously found when he attempted to trace back the "golden age" of the English pastoral.

In other words, the world of sense orientates itself around an Edenic axis. It is for this reason that the nuclear toxic is experienced as disorientating bodies (Masco 2006, 32–3). What Masco describes as a "theft of sensibility" (28), the inability of the senses to make sense of the signs in the environment around them, is, in fact, the realization that we cannot rely on a symbolic lexicon that understands signs according to their alignment with or deviation from an Edenic image. (Masco suggests that the "strange duality of the nuclear age" can be seen in the way that "contamination, and the possibility of mutation, can travel hand in hand with visible signs of health and prosperity" [2006, 33]. But in fact the visible becomes interpreted as "signs of health and prosperity" insofar as it, or they, align with a specific vision of the Edenic.) We experience this failure as a loss of the Edenic even though the Edenic has never been real; we mourn the Edenic as imagined-origin and as virtual possibility of the future, even though neither of these has ever been the case. Our disorientation is not, in fact, a disorientation *in* or *of the world*, but a disorientation of the imaginary: an apocalypse of our ability to make sense.

The persistence of the world in the face of this interpretive collapse (which, it is important to point out, is not a collapse of meaning caused by some extreme characteristic of the nuclear, but rather an exposure of the fact that our meaning-making practices have *always* been arbitrary and insufficient) is what creates the uncanniness that Bryukhovetska (2013) identifies at Chornobyl and that Masco identifies as a trait of the nuclear more broadly. The familiar (the material world) becomes unfa-

miliar through the failure of meaning-making practices. We see that what we had thought was immanent (meaning) is in fact unmoored. And the more we look for a mooring-point to which to tie our meaning-making practices, the more we are confronted with the arbitrariness and insufficiency of those practices. If the Chornobyl Exclusion Zone is neither Eden nor apocalypse, then what is it? And on what basis (lacking 'the natural state of things' as interpretive mooring-point) can we make any argument about what it is?

Current representations of Chornobyl-as-place suggest that, in a Ukrainian context, one way to look at it is: a dwelling-place, or, in other words, a home. This is the impression that one receives from interviews not only with Graldina but also with other Chornobyl tour guides who used their equipment to track the invasion of the Exclusion Zone and shared fabricated local 'knowledge' about radioactive risk to discourage Russian soldiers (Arhirova 2022; Berger 2022). It is also the impression that is given by Kamysh's account of the anthropomorphized Chornobyl whom he loves and whom he has "lost — for now." And it is the impression given by memes that represent a specifically toxic Chornobyl as embodying Ukrainian resistance to Russian invasion. It is even the impression given by some news coverage that centers around the risk of "another Chernobyl": a *Reuters* report (Vyshnevska 2022) centers on a Ukrainian couple who had worked as engineers at the Chornobyl NPP, had been evacuated from their home in 1986, and were now refusing to leave their new home near Chernihiv. "God forbid we should have to be evacuated again," they tell Reuters; figuring their central fear as one of displacement rather than of possible nuclear toxicity. In contrast to the Chornobyl survivors interviewed by the *New York Times,* who view radiation as the source of their exile and alienation, the *Reuters* subjects seem to blame the war and its Russian aggressors. One is reminded of Graldina's claim: "it wasn't radiation that stopped everything for me, it was Putin" (Pendlebury 2022). The couple acknowledge that in the case of a Russian attack on the Chornobyl NPP, "radiation would spread all over Europe," but this oddly frames the nuclear risk as one that is primarily posed to the rest of Europe rather than to Ukraine itself, whose primary concerns are different.

Contamination Thinking

The introduction of the threat of radiation "spread[ing] all over Europe" opens a new dimension to the question of why Chornobyl functions as a particularly potent rallying-point. Large parts of the Chornobyl discourse

in the current war are circulating in non-Ukrainian communities for whom Chornobyl is neither a national trauma nor an affectively-powerful piece of 'home.' Given this, why does Chornobyl so effectively mobilize the attention and emotions of the transnational community? It is a question whose answer is less obvious than it may initially appear: after all, large areas in the industrialized world are already toxic and/or even radioactive;[4] as Kate Brown (2019) points out, the transnational community may even already eat produce from the contaminated Polesian area around Chornobyl, as the Polesian berry-picking industry routinely 'cheats' radiation monitors by mixing contaminated and uncontaminated berries to achieve an acceptable average emissions measurement for export (Brown 2019, 363–4). Though intense anxiety in Western Europe and the U.S. surrounded the 1986 Chornobyl accident and its possible biological effects, most of this has proved to be unfounded (for a detailed discussion of the complex dynamics involved in assessing the 'real' effects of the accident, see Kalmbach). It is therefore unlikely that the landscapes of the West, even if they were not already toxic, would be significantly affected by a 'new Chernobyl' in Ukraine. Ukraine itself *would* be affected, but this too is a more complicated statement than it appears. Brown argues that "Chernobyl is not an accident but rather an acceleration of a timeline of exposures that sped up in the second half of the twentieth century" (2019, 362). It's therefore inaccurate to think of any "Chernobyl" as a single event with an effect, separate from the context of institutional violence and global pollution that surrounds it. At the same time, Ukraine is *already* being affected, more seriously, by the Russian invasion: loss of life, mass displacements, social and economic disruption, and the long-term mental, physical, and environmental effects of this crisis. Yet the threat of Chornobyl clearly exercises a separate and unique power, as its prominence in transnational news media shows.

This affective power suggests that 'Chernobyl' as signifier operates as a container for cultural anxieties that are only somewhat related to Chornobyl itself. These anxieties tend to center around themes of contamination. Jaimey Fisher, for example, reads Chornobyl in German cinema as a site where post-Cold War fears about permeable and shifting national identities are worked out; the inability of Chornobyl-as-disaster to be contained by national borders stands in for larger discomfort with the "porous borders of the nation… here made parallel to the porous borders of the psyche" (2011, 20). Fears of a "new Chernobyl" reflect similar anxieties insofar as they involve a perception that suffering elsewhere cannot be contained and will reach across borders to 'contaminate' the here-and-now. Indeed, Volodymyr Zelenskiy (2022a) specifically evoked such anxieties in a

4 Both Kate Brown (2013) and Joseph Masco (2006; 2021) discuss the underpublicized nuclear toxicity of American regions, while Brown also explores the contamination caused by Soviet nuclear disasters. Non-nuclear toxic contamination is well-attested, but particularly striking is the discovery of microplastic contamination in human blood (Carrington 2022), human amniotic fluid (Carrington 2020), and the remote Mariana trench (Carrington 2018) as well as the discovery that toxic 'forever chemicals' are present in rainwater almost everywhere on Earth (McGrath 2022).

4 March 2022 speech that saw him remind Russians that "[r]adiation does not know where the border of Russia is." In an 11 August 2022 speech to the Council of Defence Ministers of Northern European Countries, Zelenskiy (2022c) began by describing the moment in 1986 when a Swedish nuclear power plant detected contamination borne from Ukraine on the wind, again drawing attention to the failure of boundaries in the face of radioactive crisis.

At the root of these interlinked fears of national, ecological, and bodily transgression seems to be a fear that what was once pure and whole has become contaminated or broken; that, having demonstrated itself to be porous/permeable, it might at any moment reveal itself as something 'unnatural' and incomprehensible to us. This is the same soil that toxic discourse grows in. Fundamentally, we fear that 'our' world will be revealed as not 'the' world (any alteration to which can only be perceived as impurity or loss), but rather as one of innumerable possible worlds generated by the fermenting nonbeing of *khōra*. This is the apocalypse without apocalypse. And this is, of course, precisely the disaster that Chornobyl figures or is figured as, a figuration that is evident in Zelenskiy's description, in his 4 March 2022 speech, of the Russian attack on Zaporizhzhia as "the night that could have stopped the history of Ukraine and Europe" (2022a). It figures thus perhaps most powerfully in the moment at which one can envision a 'second Chernobyl,' since to do so posits the survival of a world beyond the first. In fact, to talk about 'second Chernobyl' is inherently problematic insofar as "the first Chernobyl" has not really ended. Its biological effects continue to propagate. Therefore, to talk of a 'second Chernobyl' is to implicitly foreground the troubling fact that the first Chornobyl did not *end* the world, and yet the world has also not *survived* it, or at least has not survived it intact. This phrase pushes on this point of contradiction and raises the haunting possibility that our world is contaminated already. At the same time, however, it engages in another paradox or contradiction: in highlighting the 'second Chernobyl' as a disaster that is categorically different from other disasters (a disaster that is uniquely far-reaching in its temporal and spatial impact, a disaster that is uniquely contaminating in its ability to penetrate the body, the nation, and the environment), it attempts to demarcate a world that is 'still pure.' If a 'second Chernobyl' poses a threat, then this must be because we have survived (and therefore contained) not only the first Chornobyl, but also the multitude of other 'contaminating' agents that threaten to tear apart our world at the seams. The rhetoric of the 'second Chernobyl' thus doesn't so much *threaten* the apocalypse beyond apocalypse as it does *repress*

the realization that this apocalypse has already (and even always already) occurred.

I am reminded here of the way in which Lennard Davis mobilizes Lacan in the context of disability theory. "For Lacan," Davis writes, "the most primitive, the earliest experience of the body is actually of the fragmented body" (1995, 138). Only gradually does the infant unify these fragments through the "hallucination of a whole body" (139), leading to the child's ability to "misrecognize" the singular and whole object it sees in the mirror as itself. The disabled body, Davis argues, causes cognitive dissonance because the subject looks at the disabled body and recognizes its own fragmented body, which it has repressed. The idea of the whole body is always only a hallucination and always on the verge of falling apart; "the 'real' body," Davis writes, "the 'normal body,' the observer's body, is in fact always already a fragmented body" (140). To say this is not to suggest that a disabled body might not experience suffering; it is to suggest that there is no such thing as a categorically "disabled" body, because there is no such thing as a categorically "whole" body. All bodies are fragmented, and all bodies have the potential to experience suffering. If we insist upon making sense of our bodies by mapping them as deviance from an imaginary whole, we don't actually attend to suffering. We turn away from our bodies, creating an exculpating account of loss and incompleteness that is eternally orientated towards the never-was and has-not-yet-been.

In many ways, this turn benefits those who stand at a distance from crisis. There is little that the Global West can do to prevent "another Chernobyl"; at least, little that does not involve more direct involvement in the Ukraine war, which is perhaps why the Ukrainian government deploys this rhetoric so frequently. Anxiety about this 'second Chernobyl' therefore asks little of the world in terms of immediate, practical anti-fascist action. It does not demand aid for Ukrainian refugees. It diverts attention from the ways in which the transnational and highly complex nature of global capitalism leaves corporations and governments enmeshed in financial support for Russia. Fundamentally, it hearkens to the way that Sara Ahmed (2014, 20–22; 2010, 34–37) suggests that certain objects (including certain words and certain stories) work to produce emotional transformations that allow the subject to feel certain ways. Often, these transformations also obscure certain agencies or responsibilities that are at work in the object. Here, fear of contamination (and the Anthropocene anxiety that underlies it) obscures more probing questions about what kinds of suffering are happening and how these kinds of suffering are being produced.

How can we learn to engage with Chornobyl as a lived experience and material site rather than engaging with 'Chernobyl' as affective signifier?

Recent efforts have not been particularly successful. Though I agree with Courtney Doucette's assessment of the 2019 HBO miniseries *Chernobyl* as a failure insofar as it fabricates an ideological explanation of the Chornobyl disaster, I strongly disagree with Doucette's position that the history of Chornobyl points us towards a need to be skeptical of nuclear power (846). Fundamentally, Doucette seems to commit the act that she criticizes in others: Doucette argues that Chornobyl ought to function as a lens through which to assess the global present (849), yet what makes HBO's *Chernobyl* so troubling is that it bends history in its commitment to utilizing Chornobyl as, primarily, a way of talking about current events. Indeed, the miniseries has been prominently read as a text that is "about" climate change (PRI; Kahn). This search for transhistorical, universal meaning refuses to ask what Chornobyl is *as Chornobyl:* what it continues to be for those enfolded within its expanding assemblage. Maybe we need to stop forecasting a 'new Chernobyl' and grapple with the ongoing Chornobyl that we've got.

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