

Daniel G. Spencer *The Chernobyl Herbarium, the Nuclear Sublime, and Progress After an End of the World*

Abstract: Philosopher Michael Marder and visual artist Anaïs Tondeur's *The Chernobyl Herbarium: Fragments of an Exploded Consciousness* (2016) is a hybrid of philosophy, memoir, and visual art, aestheticizing the event and place of Chernobyl as an object of sublime reflection, and offering a creative-critical account of the notion of art's utility after the end of the world instigated by the nuclear event. As an aesthetic project, *TCH* renders the futurity of the disaster as an ongoing process whose lack of finality or closure adopts the character of the sublime, mostly notably the Kantian formula of the sublime. Utilizing theories of the sublime—its assessment in Kant, Herder, and its contemporary influence in Morton's "dark ecology"—this paper argues that the book has the ability to surpass the restrictions of the sublime formula, namely what is recognized by Marder as the sublime's complicity in the nature of historical progress toward twentieth-century nuclear culture. The main goals of this article are to outline Marder's philosophical reading of the sublime, to assess this reading through case studies of individual "artworks" or art-like objects found in the Chernobyl Zone, and to ultimately reassess the uncanny, lingering futurity of the nuclear event not as the 'end of the world,' but as progress toward a future aesthetic model in which humanity's supposed rational hierarchy over nature is exchanged for the hesitant optimism of future ecological art.

Keywords: Chernobyl, aesthetics, sublime, eco-anxiety, eco-trauma

Michael Marder, philosopher of vegetal life, and Anaïs Tondeur, a visual artist whose works embrace environmental themes, collaborated on an interdisciplinary book about the effects of the Chernobyl nuclear disaster of 1986, titled *The Chernobyl Herbarium: Fragments of an Exploded Consciousness* (2016).¹ This text, published digitally and in print by the Open Humanities Press, offers thirty fragmentary reflections, one for each year since the event leading to the book's publication. The work is a hybrid of philosophy, memoir, and visual art, aestheticizing the event and place of Chernobyl as an object of sublime reflection, and offering a creative-critical account of the notion of art's utility after the end of the world; that is, as a suture to the wounds of personal, communal, and ecological trauma caused by the nuclear event. Chernobyl (the event) and the Zone (the place) are *not* artworks of the same kind as those found at any major museum in the West, nor are they of the same quality as artworks *about* the event. Yet as an aesthetic project, *TCH* renders the futurity of the disaster as an ongoing process whose lack of finality or closure adopts the character of the sublime, mostly notably the Kantian formula of the sublime. Utilizing theories of the sublime—its assessment in Kant, Herder, and its contemporary influence in Morton's (2016) "dark ecology"—this article argues that the book has the ability to surpass the restrictions of the sublime formula, namely what is recognized by Marder as the sublime's complicity in the nature of historical progress toward twentieth-century nuclear culture. The main goals of this paper are to outline Marder's philosophical reading of the sublime, to assess this reading through case studies of individual 'artworks' or art-like objects found in the Chernobyl Zone, and to ultimately reassess the uncanny, lingering futurity of the nuclear event not as the 'end of the world,' but as progress toward a future aesthetic model in which humanity's supposed rational hierarchy over nature is exchanged for the hesitant optimism of future ecological art.

Philosophy and Memoir

Marder's contribution to *TCH* includes autobiographical and philosophical writing on the impact of Chernobyl. Each meditation reflects personal details, as well as historical, scientific, and theoretical discussions of the implications of the disaster. Outside of *TCH*, Marder's work synthesizes continental, political, and ecological philosophy, with an emphasis on phenomenological approaches to the autonomy and subjecthood of plant life in relation to humanity. Philosophers, he claims, allot to plants a "generally

¹ Forthwith *The Chernobyl Herbarium* will be referred to in the abbreviated form: *TCH*.

inferior place in their systems; [use] their germination, growth, blossoming, fruition, reproduction, and decay as illustrations of abstract concepts” (Marder 2015, xiv). What results from this work, and the approach to Chernobyl at hand, is a system which places plants at the center of its thinking, employing vegetality as the fulcrum between humanity’s engagement with nature, and the subjecthood of a living, breathing, and *feeling* world, whose human objects adopt the character of vegetal embeddedness.

TCH’s account of Chernobyl is a study of the contact between humans, plants, and largely ‘unknowable’ scientific forces, namely the power of nuclear radiation, which maintains distance from the observers who attempt to cognize it. “What is there to say,” Marder writes, “about exposure to radiation that cannot be seen nor smelled nor heard nor touched nor tasted?” (Marder and Tondeur 2016, 24). Language about the event fails to capture its visceral and spectral character. Take, for instance, the situation in rural Belarus following 1986, where folk were cautioned from foraging for berries and mushrooms, a readily available source of nutrition and leisure, to avoid contact with radionuclides embedded in the vegetation and soil (Kuchinskaya 2014, 43). Rather than heeding these warnings or following local protocols to boil meat and test milk before consumption, most simply learned to live with the ghost of fallout, where the everyday reality of poverty and hunger outweigh the potential long-term effects of radiation poisoning (Kuchinskaya 2014, 51). How does language begin to capture the grim, lived reality of those who persist to this day in and around ground zero of the disaster?

In the case of nuclear events, those who articulate language about the phenomenon no longer appear to exert control over the materials of nature or of words. Marder suggests that “Those of us who have been in its eerie neighborhood” — in the presence of radiation — “have resembled objects, onto which certain effects have been inflicted, as opposed to subjects in control and aware of what is going on” (Marder and Tondeur 2016, 24). Lacking observational or physical agency, human subjects appear to conform to passive inaction, adopting a more plant-like state: unable to quickly react, or to describe the status of one’s being, one has much more in common with vegetal life.

TCH’s text also serves as a mode of philosophical mourning, where the subtitle of the work, *‘Fragments of an Exploded Consciousness,’* speaks to the radical and irreversible changes of catastrophic events. Marder conceives of this change in terms of ecological trauma manifesting as a result of personal radiation exposure, agricultural effects, and geopolitics. The interest in aesthetics, and the reticence to subscribe to a moralizing account of the dangers of a nuclear future, align this approach

with Timothy Morton, whose most recent dictum that “all art is ecological” speaks most clearly to a privileging of artistic ideas through ecology (Morton 2021). Marder’s philosophy also recalls the work of Peter C. van Wyck, whose research untangles the hidden aesthetic logic behind nuclear iconography (i.e. the history of official symbols denoting nuclear waste and radiation contamination) and the proposed Waste Isolation Power Plant (W.I.P.P) ‘monument’ near Carlsbad, New Mexico, deep in the American West. Both Morton and van Wyck serve as appropriate interlocutors to Marder’s unique blend of aesthetic thinking and exploration of ideas which shape our (mis)understandings of the impacts of nuclear culture, both of which will return in the analysis to follow.

Marder’s rhetoric is also closely allied with ethnographic storytelling which has, perhaps more than any other work on the subject, shaped international consensus on the tragedy of the event. Belarusian journalist Svetlana Alexievich’s *Voices from Chernobyl* (1997), the first account of its kind, collects stories of those directly impacted by the explosion: residents of Pripyat, the families of the firefighters, the so-called ‘liquidators’ of the Soviet military responsible for the long cleanup in the years which followed, and ‘normal people’ who have suffered the lingering effects of fallout. Rather than retelling the stories of others, Marder tells his own: he was on a train in 1986 when the smoke was rising from the ruined reactor; he was shuttled, along with countless other children, to the shores of the Black Sea, in yearly trips on a medical mandate “sponsored by the healthcare system of the U.S.S.R.,” as a sickly child to alleviate potential sources of allergenic irritation. All the while, he was unknowingly exposed to fallout radiation which, months after the event, had dispersed into the atmosphere (Marder and Tondeur 2016, 16). This story is personal, but not unique, and Marder’s biography is but one voice in the panoply of stories which encompass the lived reality of the disaster, a reality which continues to unfold within the lives and memories of those directly and indirectly affected by its looming presence.

Photogram and Herbarium

The entwining of philosophy and memoir is but one half of *TCH*, the other consisting of ghostly renderings of plants found in and around the Zone. Tondeur, Marder’s collaborator, is a French artist-researcher whose work is centered around ecology. According to her website biography, this work crosses the fields of natural science, anthropology, myth, and new media with creative and critical experiments exploring modes of perception

beyond the human/nature divide. This multi-disciplinary practice spans photography, video art, performance, and installation, though her contribution to the book is focused on the realm of photogrammetry, the art of creating photographic prints by placing objects on paper (usually light-sensitive material, or chemically coated photographic paper) and exposing those objects to light. The result is a negative image of the object, bathed in shadow and as translucent or transparent as the exemplar (and the intensity of light) allows.

As an art form, photogrammetry is nearly as old as photography. Several forms of photo-chemical experiments predated the first photograms, with the first true photographic negatives appearing during the 1840s. An early exemplar, Talbot's *The Pencil of Nature*, featured a wide array of negatives, ranging from delicate lace to large buildings (Talbot 1844–46). The first major application of nature photogrammetry was Atkins's *Photographs of British Algae: Cyanotype Impressions*, whose images were produced "by placing wet algae directly on light-systemized paper and exposing the paper to sunlight" (Atkins 1843–53). Atkins's book is hailed as a fusion of scientific inquiry and creative expression, where the white outlines of sea plants, foregrounding the blue pages which hold their images, appear as almost dreamlike translations of their aquatic originals (The Met n.d.).

The photogram also saw a resurgence during the 1920s, with the work of Modernist artists, including the Surrealist Man Ray, who called his own versions 'rayographs,' capturing mundane objects in abstract and quasi-three-dimensional light, and eventually adapted the technique to moving pictures in *Le Retour à la Raison* (1923). It was undoubtedly photogrammetry's relative simplicity (and aleatoric ethos) which drew Man Ray to the form. In the photogram, mundane items like scissors and coiled wire appear as uncanny simulacra whose photographic negatives are so much like objects of daily use, yet distant from memory in their new light. What results, at least in Man Ray's *rayographs*, is an alienation of the everyday, where the familiar is made unfamiliar through a spectral medium, where the everyday object, visible in the light, is rendered uncannily invisible in shadow.

For Tondeur, whose usage of the photogram is undoubtedly tied to nineteenth and twentieth-century predecessors, the everyday plant-life of the Chernobyl Zone is presented and de-familiarized (from its original biological and geographical context) through this process, and further alienated from its photogrammic double through radiation in the flora, which 'appears' to make its mark on the surface of the image. Each photogram lists the plant's radiation level in microsieverts/h, a unit used to measure

the effects of low doses of ionizing radiation on the body, though each image's halo-like luminescence has more to do with the character of the medium than it does with the presence of radiation. Nevertheless Marder, commenting on Tondeur's art, considers this phenomenon in light of the Greek roots of *photogram*: a "*line of light*," in contrast to the *photograph*, or "*writing of the light*." Rather than merely capturing the essence of an image on photographic paper, as is the case with the photograph, the photogram is "etched, engraved, engrained, [and] the energy [...] both reflected (or refracted) and absorbed" (Marder and Tondeur 2016, 14). Tondeur's photograms respond to this trauma as "visible records of an invisible calamity, tracked across the threshold of sight by the power of art" (Marder and Tondeur 2016, 14). The photogram is a 'detonation,' mirroring but not wholly replicating the event. The peaceful, or at very least neutral images of flora, do not immediately recall the violence of the corresponding disaster. By releasing "explosions of light trapped in plants," as Marder suggests, Tondeur recalls the intensity of Chernobyl without replicating its destructive power, harnessing science, history, and art to attempt once more to render the allusive, un-thematizable nature of the event (Marder and Tondeur 2016, 14).

Along with photogrammetry, Tondeur's contribution recalls the hybrid scientific and creative genre of the herbarium, an invention of the Renaissance, which first appeared in the early sixteenth century in the work of the Italian botanist Luca Ghini. Though scholars of his day relied almost entirely on classical sources for their knowledge of plants, Ghini emphasized fieldwork and observation of live specimens. This teaching experience inspired Ghini to create a device which would allow his pupils to study plants during the winter. Thus, he developed the *herbarium*, which in its simplest form is a book of pressed plants which have been dried and glued to pages, and are accompanied by a taxonomic description (see Thiers 2020, 13–24). Later, in the eighteenth century, Carl Linnaeus, the 'Father of Taxonomy,' innovated the form of the herbarium further, opting to mount his plants on large sheets of paper, which were then catalogued in cabinets for easy accessibility. Linnaeus's model is still widely used today, across academic research and museum institutions, to catalogue specimens according to taxonomy (Thiers 2020, 20–24).

In its conceptual depth, the herbarium presents the opportunity for the intense exploration of natural phenomena in relation to aesthetic or philosophical principles. One may arrange the herbarium according to one's own rules, inclinations, or tastes, in order to craft any narrative about its materials. It is often the case that when placed together, the plants of a region begin to tell a tale of their own, and where the logic

at first seemed haphazard and chaotic, it is sometimes revealed to be profound. Elsewhere in *TCH*, Marder refers to the plant photograms in context to the “autonomy” of vegetation, stating that plants often have their own “meaning” which is absent of their use toward human ends. This autonomy manifests in the photogram, and in their arrangement in *TCH*, as an “excess of meaning,” an escape from the cultural and scientific application of the plant toward an image which speaks to its “visual and semantic” vibrancy. The radioactivity which these photograms so hauntingly mirrors might also be conceived as a visual reminder of a plant’s unseen agency. In light of the un-thematizable, it is possible that plants, in an arrangement instigated by human creativity, create their own meaning absent of human ends, pointing toward the possible unknowability of nature when presented to human eyes. In other words, when we discover traces of this meaning in what was once considered random or chaotic, we are slowly approaching the possibility of understanding that logic through contemplation of the philosophical sublime, though troubled by the very history that concept embodies.

Kantian and Nuclear Sublime

Marder’s engagement with the sublime requires additional investigation into Kant’s expansion of the concept, as well as its contemporary application in its engagement with nuclear culture. Immanuel Kant did not invent the sublime, nor was he the first modern thinker to separate it from the categories of beauty and the beautiful, though his formulation of the two major classes of the sublime, the dynamic and mathematical, have served as the touchstone for modern philosophical debate to follow. In the *Analytic of the Sublime*, the second book of *The Critique of Judgment* (1790), Kant outlines the notion of *limitlessness*: that which is sublime “cannot be contained in any sensuous form, but rather concerns ideas of reason, which, although no adequate presentation of them is possible, may be aroused and called to mind by that very inadequacy itself which does admit of serious presentation” (Kant 2007, 75). Natural phenomena, like the sea or the awesome storms which often rage upon it, are not sublime so much as the *feeling* which arises upon reflection of the event. Chaos, furthermore, excites the sublime; disorder and desolation, the contemplation of that which is both absolutely great and that which transcends “every standard of the senses” in meditation of the monstrous or colossal, approaches the alluring and abjective quality of the sublime (Kant 2007, 81–83). What is observed in the Kantian sublime is the boundless strength

of human spirit against the powers of nature, for that which is as vast as the abyss of the sublime still cannot swallow the vastness of imagination. Kant conceives the sublime as giving observers the strength “to discover within us a power of resistance of quite another kind [and] which gives us courage to be able to measure ourselves against the seeming omnipotence of nature” (Kant 2007, 91). Nature, as a whole, is sublime insofar as it grants human imagination the power to envision reason as that which can comprehend nature and, in comprehending, eventually surmount it.

Marder’s approach to the sublime is primarily in reference to Kant and his influence in Western thought. Other approaches, however, are useful in considering the sublime nature of the nuclear event. Kant’s contemporary, Johann Gottfried von Herder, whose work is lesser-known in English-language scholarship, proposed a vision of the sublime more consistent with Marder’s critique of modernity. In opposition to Kant, Herder not only denied the gap between language and reality—a gap which, in Kant’s philosophical system permits him to envision the purposeless mechanism of nature, and therefore the “purposeless purpose” of aesthetic objects—but he also rejected the mentality of modern progress and the critical project of modernity (see Schulte-Sasse 1990). Herder’s diagnosis of the Enlightenment’s emphasis on self-identity, and the reorganization of society away from the expression of the sublime imaginary and aesthetic imagination, toward the ‘socially-inspired ideals’ of modern progress and the centrality of the machine as the organizing principle of life and education of everyday people, suggests a link between the Kantian sublime’s insistence upon the separation of nature and culture and the centralizing ethos of industrial modernity. In following Herder’s sublime, nature no longer appears ‘out there,’ far removed from human life, nor ‘in there,’ as crucial aspect of human identity, but existing purely as the fuel for expansion. Had Marder turned to Kant’s critics to demonstrate the flaws in this approach to the sublime, its complicity in modernity’s industrial, and later nuclear, project would be much more apparent.

What Herder and Marder appear to share in their assessments of modernity is the inducement of a kind of ‘false sublime’ in which the fear, abjection, and eventual surmounting of the phenomenon is instigated rationally or intentionally. Marder, who clearly sees the sublime formula as the imperceptible, in which such events signal the disintegration of human control (i.e. reason and intellect), suggests that the only way to make sense of such events is through the attempt to mediate (and thereby aestheticize) the event. Such mediating actions, however, have the potential to transform the event into the rationale for further exploitation, either for technological or personal aims. ‘Dark tourism,’ for instance, can be

interpreted through this lens as an attempt to re-make or re-experience the sublime through extreme activity, or at the very least, through a kind of second-hand, false-psychological intensity. Visits to sites of nuclear trauma, like Chernobyl, often do not serve to heal the wounds of that event, but to perpetuate that trauma through the personal drama of the false, 'nuclear sublime.'

Frances Ferguson, in tracing contemporary developments of the Burkean and Kantian sublime, formulates a concept of the nuclear sublime in relation to ideas about nuclear power and warfare which reached an apex in the late-1980s. The terror and fascination with nuclear power vacillate between the harrowing admiration of its amenity (in the form of affordable energy) and the terrible unknowability of its potential ("in the effort to imagine total annihilation" after the bomb), resulting in a "mislocated" threat which cannot summarize the human response to the potential of radiation's influence (Ferguson 1987, 7–8). What manifests after a nuclear disaster is often a vicarious pull of "pleasure and terror," as evidenced by the trend of nuclear tourism to such places (Goatcher and Brunsden 2011, 128). Adorno's assessment of this conceptual admixture has proven highly useful for Ferguson and other scholars who have diagnosed Chernobyl's abject allure. For Adorno, the sublime has the potential to trace the residue of unimaginable horror in cultural memory—the twin-forces of fascism and the Holocaust—and for others, it can bring tragedy into focus, almost knowable in mundane terms, as a site for travel and tourism. Photographs of a visit to a site of disaster "can link us back to what has disappeared from view and grasp [...] what has become unknown" (Goatcher and Brunsden 2011, 129). What is required for observers to understand art is the "experience" of works which are "formed in themselves according to their own logic and consistency as much as they are elements in the context of spirit and society" (Adorno 1997, 349). Theory of the nuclear sublime takes Adorno's dictum a step further, suggesting that such experience is not passively witnessed in the observation of art, but actively *remade* through visiting sites of trauma, and by embedding oneself and one's own experience within the history and lived reality of those places and events.

The possibility of personal embeddedness raises the question as to whether experience truly reveals the unknowability of the nuclear sublime, or rather cements its enigmatic nature as an inseparable part of an impenetrable whole. Such attempts to arrive at a sense of the meaning of tragedy through amateur photography are deeply personal expressions of subjectivity and aesthetic experience (Goatcher and Brunsden 2011). Perhaps it is the case that photographs allow a subject to embed their own

complex subjectivity in the midst of the nuclear sublime as the tourist's own version of Caspar David Friedrich's enigmatic and ubiquitous Romantic painting *Wanderer Above the Sea of Fog* (1818), though this does not answer the question as to how such an assessment of the nuclear sublime might actually challenge the notion of sublimity altogether. It is the case in Marder's philosophy, however, that the sublime begins to show its cracks, and makes its fallibility known through the domineering force of radiation's intolerable unknowability.

According to Marder, Chernobyl has rendered Kant's notion of the 'dynamically sublime,' the sublime which a sense of movement that is far enough away from the human subject as to not directly affect it. The dynamically sublime relies upon the notion that immensity can be rationalized in the human mind at a distance, understood to lack the depth that imagination affords. Reason or imagination, however, cannot truly triumph in the face of the reality of nuclear fallout. Marder contends that:

Radiation brings to naught our detachment from a threatening force and annihilates the independence of a viewing subject standing in opposition to a viewed object. Reason evinces its impotence. More than that, the imperceptible nature of radiation elevates it higher than the sublime. Absolute and free—in the sense of being untethered from any given source of danger—terror intrudes into our psychic lives. In the fallout zone, everything is dangerous, not only around but also within our bodies. We are not separate from the threatening reality, "caused" by and residing in us (Marder and Tondeur 2016, 66).

Comfortable distance, bolstering the illusion of proximity from the event, may define the Chernobyl tourist's photograph, much as it characterizes a Romantic *Rückenfigur*, but radiation's reality negates the distance between observer and phenomenon. The sublime can only thrive in a situation where the observer maintains a comfortable distance from the horror of the phenomenon—after all, sublime painting can embolden one's sense of adventure in the face of such horrors, seen from the comfort of a gallery or computer screen—but with radiation, untouchable in its presence, unseen in its dispersal, and uncertain in its truly long-lasting effects, the distance both recedes into the background and forcefully emerges into the foreground at a seemingly infinite rate, obliterating the observer's sense of temporal and spatial distance. Without this distance, sublime judgment crumbles, and one is left with the dark ecological reality of uncertainty.

Evidently, there exists a lack of a clear distinction between the nuclear event and its aftermath. Such events—literal explosions—correspond to an overbearing force and massive distribution of the technological sublime. These events, and their effects, are human-made artefacts inducing the sublime event. But this event's ending is never clear. Lingering radiation persists as an uncanny phenomenon, and not all victims of Chernobyl, of any nuclear accident on record, died in the days and weeks following the event. This temporal blurring is itself another instance of the sublime—in this case, the dynamic sublime—not as a false sublime engendered by disaster tourism or television drama, but a true, weird, aesthetic unknowability which appears to haunt the Zone itself. The uncertainty of this ending is, ultimately, one of the core symptoms of its historical trauma, which poses the question: if one cannot identify where the event *ends*, how can one move *beyond* it?

Ultimately, Marder's revision of the sublime through radiation and nuclear culture relies on the relationship between his ideas and Tondeur's plant photograms, which are themselves artistic representations of real-life objects, once living, and now preserved in the negative image of light. As Kant stresses, sublime objects are not to be confused with their real-world doubles. The sublime does not exist in nature, but in art, and in aestheticized consciousness of phenomena, therefore radiation, in itself, does not take on the character of the sublime, but only in our cognizing of it, and only in relation to its representation in art or aesthetic consciousness could it ever be presented as an object of sublime contemplation. Tondeur's photograms are artistic representations of the place and event of Chernobyl, where radiation or the "nuclear sublime" makes itself known (or, at the very least, knowable) through the medium of art. Tondeur's photograms do not "represent anything," but merely catalogue radiation, not imitating life but, rather, recording "life's vulnerability, amplified by the failure of reason to protect us, on the hither side of the beautiful/sublime divide" (Marder and Tondeur 2016, 66). In the face of such forces, the indomitable power of the human will can resemble the crumbling landscape of the Zone itself, once a promising and pioneering future, and now a ruinous remnant of a lost future uneasily foretold.

Dark Ecology and Radiation as Miasma

Visions of lost futures recall the territory tread in ecological thinker Timothy Morton's (2016) 'dark ecology,' an approach to nature which is neither bright nor entirely bleak. The path toward this mode of thinking is fraught

with doubt, danger, but also a sense of hope, though hope informed by the knowledge of decay. One must travel through several stages of this doubt, the first of which is nihilism, a depressive reaction to crisis; the second stage is uncanny, in the sense that Freud describes the phenomenon as deeply unsettling, oddly familiar, and potentially soul-shaking in its revelation of hidden impulses; and the third, dark ecological awareness that doesn't outright accept ecological destruction but embraces the 'weird,' the aesthetic domain that Western thinking generally wishes to avoid in favor of the 'known' (see Freud 2003).

The primary concern of *Dark Ecology* is *how* an acknowledgment of the uncanny and the weird aspects of ecological awareness—not to mention the increasingly fragile lived reality of human and non-human species in climate crisis—will heal the wounds of ecological destruction. Morton's answer is a question, or a series of related questions: how do we live considering destruction? How do we 'think the self' as a member of the human *species*? How do we conceive of the relationship between humans and nonhumans? How do we live *with* the Anthropocene, *with* hyperobjects—the objects and ideas, often created by humans, which radically outlive all human life—and *within* the porous boundaries of human and nonhuman space? Dark ecology makes room for ambiguity and darkness, for doubt and uncertainty, in light of radical individual and communal change. The question (and the answer) is then: how does the subject become constantly present in the face of forces which seek to subsume it?

One answer is to grant philosophical weight to those concepts which modernity has thoroughly discredited: magic and the supernatural (taken together as the transcendent) are interrelated categories of mythical thinking which, through positivist discourse, have been thoroughly scrubbed from the palimpsest of modern thinking. But like the palimpsest, which retains traces of the words once written on its surface, modern thinking recalls the mythical underpinnings of its structure. This is precisely why Freud, an exemplar of modern positivist thought, could not rid himself of myth in his analysis of dreams: the traces of mythical consciousness are interwoven into the fabric of the human mind, providing the logic upon which the sleeping mind makes sense of the waking world (see Freud 1999). The world of light provides opportunities for the forgotten past to make itself known, whereas darkness kindles the ever-burning flame of the mythical past. To attune oneself to the forces of the world which attempt to consume it means to grant weight to these categories, to acknowledge them as vital aspects of contemporary thought which have not disappeared under the domineering hand of modern progress.

The logic of radiation, whose influence is thoroughly modern, also behaves, at least conceptually, as a transcendent phenomenon, and looking to the mythical past for an exemplar, radiation most closely resembles the miasma, a medical term referring to a type of airborne disease-causing pollution. Versions of miasma theory proliferate in classical and medieval sources, though it is in the work of the fourth century B.C.E. Greek physician Hippocrates, the so-called ‘Father of Medicine,’ where it is articulated in a medical capacity to refer to the aerosol spread of contagion. Contemporary scholarship has revealed that ‘miasma’ was not originally conceived as a medical term in ancient Greece. Its root is in the Greek verb *μιάνω* (‘to stain, pollute, or be unclean’), and its first uses as the noun *μιάσμα* are found in Greek tragedy “in connection with the stain of blood spilt in a crime” (Jouanna 2012, 121). Miasma also has roots in purification rituals of ancient Greek religion, where adherents must go to great lengths to purge either the corporeal or cultural body of its contagion (see Parker 2001). Miasma first had its use in religious, mythological, and artistic contexts, taken up later by Hippocrates and his successors in the form of ‘miasma theory’ as an explanation for disease. In any discussion of its cultural and etymological lineage—such is the case with many other scientific concepts now taken for granted as pure scientific discourse—myth, and the translation of myth into artistic consciousness, must play at least a starting role.

Simon Ryle turns to ancient miasma theory, in the form of Sophocles’s *Antigone*, as a way of providing a conceptual model for understanding the interrelationship between humans and nuclear waste in the Anthropocene. Ryle’s “poetics of miasma” reassesses Sophocles’ engagement with miasma—in the form of Antigone’s refusal to submit to the laws of the *polis* and Creon’s authority—through the lens of Morton’s eco-poetics and the notion of the ‘Away,’ a concept denoting the general abstractions of waste management in Western thought. Ryle, quoting Morton, evokes the image of the “U-bend in the toilet” as a symbol of “the ontological space that [takes] whatever we flush down into a totally different dimension called the *Away*, leaving things clean over here” (quoted in Ryle 2018, 42). Creon’s attempts to curb the potential “pollution” of the Theban *polis* engendered by Antigone’s desires to honor the body of her fallen brother Polynices—a traitor who, according to Creon’s declaration, cannot receive sacred burial rites—is for Ryle an instance of proto-ecological thought.

Creon’s prohibition anticipates the contemporary ‘chthonic obsession’ evidenced in the nuclear waste disposal facilities of Yucca Mountain, in Nevada, and Onkalo, Finland. A genealogy of pollution might not begin

with Creon's proclamation, though it necessarily features his extraordinary efforts to contain the miasma of political and ritual transgression, wholly out of sight and mind from the contemporary world. To maintain waste in its own 'zone' is to keep its polluting influence at bay, at least until a greater solution can be devised for its storage. The monument-like status of nuclear disposal facilities is shaped as miasma-containment, each 'zone' a polluted space to be protected, and maintained. Even the prime symbol of Chernobyl—the so-called 'sarcophagus' erected over the ruins of the fourth reactor, and its updated New Safe Containment enclosure—borrows the prototypical symbol for the burial of the dead. The separateness of nuclear waste will perhaps forever signal a world that is fundamentally abstracted from the daily lives of citizens until, of course, one begins to ponder the long future of its decay. Such spaces are living testaments to the degree that myth and art still shape contemporary consciousness, as such that aesthetics might be the only philosophical, effective equipment which we possess to assess the longevity of radioactive materials. Aesthetics, then, becomes a kind of healing process for the trauma of nuclear events. So, to consider the aesthetic character of such events is a critical step in the healing cleansing of this miasma, as it is central in Marder's process of philosophical and poetic mourning in the various geographical and conceptual 'case studies' of *TCH*.

The 'Myth' of the Red Forest

The Zone has adopted the character of a monument and the quasi-aesthetic distance of a museum space. Chernobyl and Pripyat stand witness to the period of late Soviet architecture and monument construction which preserved in its ruinous state, is a rare sight that undoubtedly fuels cultural fascination and the increasing interest in official and unofficial tourism to the Zone. Yet, as Darmon Richter writes in his book on Chernobyl 'stalkers,' many of the sights in schools and hospital wards, where children were reported to have scattered their toys as they left, are little more than the cheap effect of post-disaster pageantry. He writes:

There were monuments of plausible truth along the way (miniature, self-contained stories, like the upright piano abandoned on the seventh floor of an apartment building, too big for the elevators, too heavy to drag down the stairs), but for the most part, the interior spaces of Pripyat looked like bad taxidermy (Richter 2020, 54).

Richter dubs this form of observation the ‘Pripyat myth,’ one which has inspired so much distanced reflection on both the aesthetic value and historical tragedy of the ruins which still remain there. Marder and Tondeur’s attempt to aestheticize the Zone in *TCH* does not seek to reinforce this lie—neither in rehearsing the same rehearsed still-lives of abandonment found in Pripyat’s schools and hospitals, nor in blindly supporting the political program of nuclear energy—but instead actively reconfigures it toward ecological reflection, positioning its tragedy and capacity for mourning as a future step toward dark ecological attunement.

Rather than focusing on the remains of commercial and residential spaces, now invaded by the presence of largely unbridled wild growth, Marder turns his attention toward the so-called ‘Red Forest’ (Рудий ліс), a 10-km² area surrounding the former power plant, which absorbed massive amounts of radiation in the days which followed the initial explosion. Normally, the forest still measures 50–100 $\mu\text{Sv/hr}$, though it can reach as high as 1,000 $\mu\text{Sv/hr}$ during extreme heat and periods of forest burning, when fire can denature the wood into gas and ash, releasing radiation into the air (Brown 2019, 125). Typical ambient radiation levels in a home or office setting, in comparison, hover around 0.1 $\mu\text{Sv/hr}$, averaging 20 mSv/hr *per annum*. As a result of exposure to this massive amount of radiation, pine trees died and took on the reddish color they still hold today. Dead, though preserved, they appear locked in time at the moment(s) when they absorbed fallout from the reactor. Since this vegetation no longer decays naturally, the “timescale of finite life has been disrupted and the same fate has befallen death as well, which is to say, the material afterlife of rotting and decay” (Marder and Tondeur 2016, 28). In light of the poetics of miasma discussed earlier, we might argue that such a space serves as the living reminder of nuclear contagion, where the docile image of natural landscape—turned to an almost otherworldly hue, drawing our attention even further inside—is much more deadly than the post-apocalyptic scenes found on the abandoned Pripyat streets. This miasma is contained within each tree, ready to be released if disturbed from its slumber.

The Red Forest also behaves like a herbarium for the Zone at large, a monument to radioactive decay, where the very act of decomposition is halted in a geological fashion for the study of future generations. If it is the case that the plants grown in radioactive soil reveal the “shards of our own exploded consciousness,” and can be reassembled to discern “fragments of ourselves, of our bodies and thoughts,” then the Red Forest performs this feat at a massive scale, absorbing radiation which may only be released at great peril (Marder and Tondeur 2016, 28). Yet in the plant photograph, and the preserved radioactive fossils of the Red Forest,

there still remains a sense of ruin, of civilization's collapse, of an inescapable nostalgia and loss for a world which could never be fully reclaimed or mended. The world of the Red Forest, to an observer at a distance—and especially an inhabitant of the Zone—is no longer local or tangible, but as a ruin utterly lost to time.

Inhabited place is local, frequented and maintained by daily human presence, whereas ruinous space has been stripped of this presence. The ruin is marked by a displacement; spatial and temporal disorientation which inspires feelings of melancholy, serving as a reminder of a world that no longer 'exists' for the people who once inhabited it (Trigg 2006, 121–123). The ruins—especially the ruined post-industrial spaces of capitalism—are marked by ambiguity and indeterminacy, where once-inhabited space now appears pre-spatial, quasi-primordial, and malleable to both time and our position to and within it (Trigg 2006, 130–131). These ruins are 'haunted' spaces which intrude "upon the seamless present, disordering the unmarked line of time by invoking a spectral plan of uncanniness" (Trigg 2006, 131). The ruin at times appears unfinished, the death of a future which could not come to pass; the decaying Socialist utopia of Pripjat stands as a striking example of this phenomenon. Perhaps it is even the case that the spectators of history wait for the future time in which the ruin will become "enjungled," to borrow a phrase from Rose Macaulay's analysis of classical ruins (quoted in Trigg 2006, 137). There is, after all, a unique, melancholic pleasure which can arise in the discovery of these long-lost lands, where one loses oneself in speculation of their ways of life, and the causes for their sudden or gradual decline.

In the case of the Red Forest, its ruinous state is not a product of the unstoppable passing of the ages, in which the natural world has sought to reclaim this space, and where brief glimpses of the past make their appearance among the trees. If one wishes to find this kind of ruin, to seek out a contemporary vision of a "world without us," one looks to images (though not the lived reality) of Pripjat's "abandoned" streets. What one finds at the threshold of the deadly and virtually impassable Red Forest is the experience of an utterly different kind of ruin, that of the ecological landscape, trapped in time. It is, in short, the sublime miasma, preserved in stasis as a wide-scale exhibit for what might happen at the so-called 'end' of the world.

Reading the growth of trees, both living and (especially) dead can reveal the long intimacies of human and non-human interaction over the past centuries and millennia. Anthropologist Andrew S. Matthews refers to this practice as "reading ghost forests," of which he has offered the pine and chestnut forests of Mount Pisani in central Italy as an example.

Italy's Mount Pisani, nearby Lucca—a longtime ancient, medieval, and modern city—is a place where “people, trees, and other nonhumans have been entangled for a very long time” (Matthews 2017, G145). By Matthews's account, this period spans roughly fifteen hundred years, though the tree fragments and ancient stumps of today speak to a period of neglect, and a temporal foreground of a much longer period of human engagement with the wood through careful sculpting, pasturing, and fertilization (Matthews 2017, G146). What remains there now is a “complex Anthropocene landscape,” an example of the many “ruins of past landscapes of cultivation” where “ghostly presences” persist (Matthews 2017, G146). Careful ecological fieldwork can reveal traces of this past, though it is far from the only tool an anthropologist can employ to understand the history of engagement between humans and the forest. “Words,” Matthews writes, “are an index of the degree to which people and plants are entangled” (Matthews 2017, G152). The language about the cultivation and maintenance of plants is the historical reminder of ecological engagement, evidence of the intensely fostered relationships between people and place. This practice of ‘reading landscapes’ doesn't simply reveal how people of the past described their world, but can also reveal patterns which apply to our current historical situation, namely the ever-changing conditions of the Anthropocene. One possible way of attending to this practice is to “pay attention to the co-emergence of material forms and linguistic terms, of causal accounts, and of histories that can multiply our ways of thinking and acting in the face of overwhelming environmental change” (Matthews 2017, G154). What results is not a singular ‘Anthropocene’ but a plurality of ‘Anthropocenes,’ irreducible to a single cause or history, yet nevertheless connected through the enmeshment of ecological and natural history, and irreversibly tied to the language (and by extension, the ‘art’) which people have used as a form of engagement with the land.

Matthews's methods pose a bevy of questions in relation to the ‘dead’ forest of Chernobyl, though the most important for this study remains: what is the story of engagement over time which the Red Forest reveals, or perhaps more poignantly, *will* reveal in future days? The stories which will continue to unfold in the centuries to come, where radioactivity will continue its slow release from the trees into the surrounding atmosphere, will stand as a place to be protected, though not in the sense that large tracts of national forest are zoned in the preservation of outside, human forces. Instead, the Red Forest will be maintained to keep its dangerous potential within, in hopes of a future where humans can pass harmlessly through its wooded arches, preserved against the forces of both nature and humanity. It is, in a sense, a time capsule of the nuclear event, for the

residents of the future—if people indeed remain scions of that place—to open when the time is safe.

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The “Time Capsule” of the Zone

If the Red Forest is a type of time capsule, so too is the entirety of the Zone. Chernobyl’s status as a ‘place’ is complicated further by its current historical and spatial reality, halted in a state of preservation and decay. Though people and objects continually move through the Zone, it nevertheless appears to have taken on the character of what Marder refers to as a “time capsule,” where the memory of disaster lingers with the “silent scream” of clothes left to dry, books scattered in rooms, and vegetation which now consumes entire streets (Marder and Tondeur 2016, 58). This is both true and not: scientists, laborers, and shopkeepers still maintain a faint presence in the Zone, which is enough to keep the New Safe Confinement, the structure whose 2019 completion replaced the old ‘sarco-phagus,’ operational.² Tourists, both official and not, further contribute to traffic through the Zone, manipulating it in subtle and minute ways. A true “time capsule” would entail the untouched preservation of an archive, or the maintenance of a place against human manipulation, but in reality, the so-called “ghost city” of Pripyat changes in a fashion more akin to a preserved landscape, than to a forgotten time capsule. Perhaps it is the case that Marder misappropriates, or deliberately rewrites, the intentionality of the time capsule as a conscious attempt to send messages into the future or as a preservation of the way of life at a certain place and time. If Chernobyl is a “time capsule,” it is only unintentionally so—regardless of its semi-performative status in cultural imagination—with its archive instigated by the disaster and the events which followed. However, this observation is not entirely without merit: Marder’s application of the phrase has the potential to reveal the profound distance between aesthetic and historical lenses of worlds which appear close yet far from contemporary perspective.

Time capsules are a manifestation of the cultural impulse to communicate across generations, to send objects into the future in the hope of conveying a sense of the state of things at a particular historical moment, and what things mattered to those who contributed to the archive. One of the major complications of the time capsule is translation: there is no guarantee that those who uncover the capsule will possess the skills necessary to appreciate, or much less even ‘understand’ its contents. The Voyager spacecrafts, launched in 1977, are perhaps the most significant

² Recent military conflict, in the form of Russia’s 2022–23 occupation of the country, has also served to prematurely ‘re-open’ this capsule, and place its future in limbo.

instance of humanity's transmission of such capsule-like messages in space and time. The phonographs contained on the spacecraft attempt to "communicate a story of *our* world to extraterrestrials," a slice of significant human achievements as a sample to would-be galactic interlocutors (Van Wyck 2004, 34). It is also a message to and from humanity from a time of extreme scientific and cultural optimism, a kind of summing-up of progress toward the end of the twentieth century. While there is some certainty that humans will be able to appreciate its contents for generations to come, there is no guarantee that any life which intercepts it in the vastness of space—or whether it would reach any life-form at all—would possess the skill or interest to play it.

The notion of the time capsule relies upon its comprehensibility to a future audience. Much like the Rosetta Stone, another capsule or capsule-like artifact from the past, the Zone's future 'usefulness' hinges upon the lessons it may teach the audience that uncovers or deciphers it. Nuclear objects complicate the notion of a time capsule, or a stable record of the past, precisely because of their radical distribution through space and time. Nuclear materials "end the idea that there is a definite 'over yonder' and a 'hither' that remain constantly present so that we can point to them," an idea reliant upon the human vantage point (Morton 2016, 171). Though the physical point of Chernobyl is the place, it is also the 'event,' a record of trauma distributed through the senses and memories of everyone it affected. For Morton, "[n]uclear radiation is an augury, a writing in the flesh or in the sky, but an augury that lacks a stable or consistent system of meaning to underwrite it. We have no idea what it will all mean—yet" (Morton 2016, 172). Carl Sagan, when curating the materials which constitute the Voyager phonograph, intimately understood their significance as cultural artifacts. No doubt King Ptolemy V, who decreed the construction of the Rosetta Stone in 196 B.C.E., also saw the cultural significance of his act. In the case of these objects, there is always the potential that their benefactors envisioned a time when their meanings would radically expand beyond the contexts in which they were created—this is the potential of all objects and events at any given historical moment—though these objects, at least in their physical nature, lack the hyper-objective quality of radiation. Events like Chernobyl, or the disasters at Hiroshima and Nagasaki which preceded it, continue to play out in the presence of their mark upon the Earth-text of geo-trauma.

Progress After an End of the World

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Marder, like Morton, believes that the world has arrived at some sort of ending, an ending which has been in process for a long time. Morton identifies this ending somewhere around the time of the invention of the steam engine and the genesis of the Industrial Revolution, where capitalism and industry merged into an inseparable whole, and whose fusion signaled the dominance of techno-scientific culture and the death of ecological holism. Gone are the old, mythical-pastoral ways of conceiving space and time in relation to progress: the real world is no longer spatial or temporal—as progress extends infinitely in the direction of the future—but rather ceaselessly ‘material,’ judged in the fashion of those ever-looming hyperobjects created by humans, designed to radically outlive their lifespan. Marder’s ending is, perhaps, more recent, though no less drastic in its erosion of spatio-temporality:

The world has ended, is ending in innumerable ways, and will keep ending for some time to come. So much so that it is defined by its relation to the end. Thoroughly finite, if not the very figure of finitude, the world *is* its ends [...] Endlessly worried about the finitude of finitude, twentieth century philosophy flirted with the possibility of banalizing the expression and, thereby, inoculating us against its disturbing force. Although something or someone did not survive one of the world’s ends, survival was unflinchingly affirmed, often in the guise of mourning (Marder and Tondeur 2016, 64).

The Chernobyl disaster of 1986 is not even the most recent instance of this mourning—the events of Fukushima, and the ongoing military conflict near the Zaporizhzhia N.P.P. in Ukraine, rest more closely in contemporary consciousness—though it nevertheless destroyed the “horizon of existence against which the world could still appear meaningful,” rupturing consciousness seemingly beyond all mending. A reconstruction of a “scale and order of time tailored to human measure” would, it appears, need to do away with the things that made such tailoring possible in the past (Marder and Tondeur 2016, 64).

In order to follow Marder and Morton and their end-of-world thinking, and to begin the long process of building a new world, much would need to be replaced in the old ways of philosophizing and making art about nature. The aesthetic doctrine of the sublime, as outlined here, is severely in need of revision. This article has offered an assessment of *TCH*’s critique of the sublime by outlining the ways that radiation and nuclear culture radically

alter the ideas of what it means to compare the scale of nature to human imagination and will. One cannot, it is clear, surmount radiation's largely invisible presence in the same fashion that one can climb a mountain, or purport to master its iconography through painting or photography. It is true that the sublime is rooted in the mimetic desire to represent the world through the lens of human genius, to render landscape as a great foil to ultimately be 'conquered' through human ingenuity. Such a view is necessarily flawed, in that it sets up the natural world once again as fuel for human activity, though it has allowed us to view Chernobyl as a kind of sublime 'artwork' through four case studies: the herbarium as genre; the nuclear miasma; the Red Forest of the Zone; and the so-called "time capsule" of Chernobyl and Pripyat. Each view has taken us on a path to aestheticizing place and event as a way of understating how disaster disrupts the sublime's potential to domineer the forces of nature. Yet at this juncture, we still face the question of the end of the world, and how, by diffusing the aesthetic principles born from and continually reinforcing the exhaustion of nature, how we might escape this cycle.

One possible option, following the philosopher Vladimir Marchenkov's assessment of the Hegelian "end of art" thesis, is to conceive of our contemporary situation not as the *end* of history, but the end of the period known as *modern history*.³ Such an ending offers its participants the opportunity to begin a truly genuine history in which the notion of "the infinite progress of immanent humanity, i.e., humanity construed as devoid of a transcendent dimension" no longer dominates the logic of history (Marchenkov 2014, 236). Nature will no longer be conceived as providing an "inexhaustible reservoir of resources" but as a constant companion and, crucially, a necessary and inseparable aspect of the human subject (Marchenkov 2014, 236). Modern art was born from the very same principles of industrial technology, namely the impulse of art's autonomy and apparent isolation from any dimension exceeding its own production. "This mythology," Marchenkov writes, "must be surmounted and must yield its place to a more rational relation between nature and art where the aporias of the abstract intellect can be resolved without doing violence to nature and without reducing art to something existentially irrelevant" (Marchenkov 2014, 236). Marder and Tondeur, in their project to enliven the cultural impression of the Zone through philosophy, memoir, and photogrammetry certainly appear to grant the creative process an existential weight, otherwise it might have been the case that Marder would have resorted to purely philosophical means in order to critique the aesthetic of the sublime. But in its critical-creative approach, *TCH* seeks to position itself in a world where the power of art has significant

³ Marchenkov's work, rooted in the intersections of art and mythology, is a thorough indictment of modern teleology, and serves as a useful interlocuter in a discussion of the impact of the nuclear sublime.

purchase over the relationship between the human person and the natural world, and between philosophical concepts and radioactive realities. If it is the case that the ‘end of the world’ has already happened, or is in the process of continually happening with each passing moment, then this herbarium looks forward to a day when we might have considered that reconstruction to have begun when artists and philosophers took the question of nature’s exhaustibility to be at the very center of their practice.

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