SCMS

IN FOCUS: Film and Media Studies in the Anthropocene

Introduction

by JENNIFER PETERSON and GRAIG UHLIN, editors

> The West thinks it is the sole possessor of the clever trick that will allow it to keep on winning indefinitely, whereas it has perhaps already lost everything.
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> —Bruno Latour[1]

A crisis tends to focus attention on the exigencies of the present moment, and our current environmental crisis is no exception. New warnings about the dangers of a warming world pass across social media and news headlines, providing daily reminders of rising sea levels, desertification, defaunation, extreme weather events, and the social and political instability that comes with them. Collective action must be taken immediately, we say; the time for change is now. But there is still time, we think. The catastrophe may be arriving more quickly, but it remains deferred until some later moment of reckoning. Worse yet, climate change denialism, particularly in the US context, cynically declines to take action because it refuses to acknowledge any underlying problem. How much more difficult is it to imagine and enact long-term solutions to an ongoing crisis when, as of the time of writing this introduction, the term "climate change" remains scrubbed from the official policy documents of the Environmental Protection Agency?[2] Like it or not, though, insofar as we imagine that environmental crisis is a problem for the future, we are all in denial.

1 *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993), 9.

2 Lisa Friedman, "EPA Scrubs a Climate Website of 'Climate Change,'" *New York Times*, October 20, 2017; Umair Irfan, "'Climate Change' and 'Global Warming' Are Disappearing from Government Websites," *Vox*, January 11, 2018, https://www.vox.com/energy-and-environment/2017/11/9/16619120/trump-administration-removing-climate-change-epa-online-website.

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We might consider another possibility: the catastrophe is not to come, but instead, it has already happened. The "business as usual" crowd likes to imagine that technology will come to the rescue, that capitalism can be made compatible with a "green" future in which natural resources are not overexploited, even if while we wait, mitigation strategies may be necessary. New York City has proposed erecting seawalls to protect Lower Manhattan from the ocean incursion seen during Hurricane Sandy.[3] Miami is engaged in an arms race with rising sea levels, utilizing water pumps and elevated infrastructure to stave off inevitable disaster.[4] In Alaska, low-lying towns are being evacuated on account of melting permafrost, producing some of the first US "climate refugees."[5] Globally, the problem is worse, especially in locations—Bangladesh, Pacific Island nations, and Syria among them—without the economic resources to defend against changing conditions. Resilience is the environmentalism of wealthy nations. Resilience strategies also deny that the problem of climate change, as Roy Scranton argues, is not technocratic but philosophical: that is, "understanding that this civilization is already dead."[6] The difficulty in recognizing that the catastrophe is already behind us is that it requires us to reconcile the geological time scale of Earth with the readily apparent scale of human events. In effect, given the delay between anthropogenic carbon emissions and their impacts on the climate, by the time the consequences of our actions are evident, it is in some sense already too late to correct our course. This temporal gap between past actions and their subsequent effects allows for denial to take hold, but to the degree that we've known all along about our irresponsible stewardship of the planet, denial more closely resembles disavowal, a refusal to recognize the extent to which our footprint extends over Earth.

Cinema and media studies has only just begun to consider its medium anew from the perspective of environmental collapse, focusing on narratives of Armageddon and climate change in a range of multiplex features and ecological documentaries.[7] But in

3 Christa Marshall, "Massive Seawall May Be Needed to Keep New York City Dry," *Scientific American*, May 5, 2014, https://www.scientificamerican.com/article/massive-seawall-may-be-needed-to-keep-new-york-city-dry.

4 Kevin Loria, "Miami Is Racing against Time to Keep Up with Sea-Level Rise," *Business Insider*, April 12, 2018, http://www.businessinsider.com/miami-floods-sea-level-rise-solutions-2018-4; Elizabeth Kolbert, "The Siege of Miami," *New Yorker*, December 21 and 28, 2015, https://www.newyorker.com/magazine/2015/12/21/the-siege-of-miami.

5 Alan Taylor, "Alaska's Climate Refugees," *Atlantic*, July 7, 2015, https://www.theatlantic.com/photo/2015/07/alaskas-climate-refugees/397862.

6 Roy Scranton, *Learning to Die in the Anthropocene: Reflections on the End of a Civilization* (San Francisco: City Light Books, 2015), 23.

7 A nonexhaustive list would include Nadia Bozak, *The Cinematic Footprint: Lights, Camera, Natural Resources* (New Brunswick, NJ: Rutgers University Press, 2011); Jennifer Fay, *Inhospitable World: Cinema in the Time of the Anthropocene* (New York: Oxford University Press, 2018); Joseph K. Heumann and Robin L. Murray, *Ecology and Popular Film: Cinema on the Edge* (Albany: State University of New York Press, 2009); David Ingram, *Green Screen: Environmentalism and Hollywood Cinema* (Exeter, UK: University of Exeter Press, 2004); Brian Jacobson, "*Ex Machina* in the Garden," *Film Quarterly* 69, no. 4 (Summer 2016): 23–34; Pietari Kääpä and Tommy Gustafsson, *Transnational Ecocinema: Film Culture in an Era of Ecological Transformation* (Chicago: Intellect, 2013); E. Ann Kaplan, *Climate Trauma: Foreseeing the Future in Dystopian Film and Fiction* (New Brunswick, NJ: Rutgers University Press, 2015); Selmin Kara, "Anthropocinema: Cinema in the Age of Mass Extinctions," in *Post-Cinema: Theorizing 21st-Century Film*, ed. Shane Denson and Julia Leyda (Falmer, UK: REFRAME Books, 2016); Stephen Rust, Salma Monani, and Sean Cubitt, eds., *Ecocinema Theory and Practice* (New York: Routledge, 2013); Stephen Rust and Salma Monani, *Ecomedia: Key Issues* (New York: Routledge, 2016); Nicole Starosielski and Janet Walker, eds., *Sustainable Media: Critical Approaches to Media and Environment* (New York: Routledge, 2016); Alexa Weik von Mossner, ed., *Moving Environments: Affect, Emotion, Ecology, and Film* (Waterloo, ON: Wilfrid Laurier University Press, 2014); and

addition to reshaping our understanding of contemporary media, the Anthropocene provides an opportunity to reconceptualize cinema and media history. The concept of anthropogenic climate change does not exactly provide a theory of history, but as Dipesh Chakrabarty has argued, it pushes the limits of historical understanding and requires us to think across different time scales.[8] Film history occupies only a tiny moment in the planetary perspective of Earth's geological history. However, human interventions have accelerated a typically steady and slow-moving natural history, resulting in a new time scale of ecological change that is recent and fast enough for cinema to capture or imagine it. As the contributors to this In Focus section variously argue, film and media histories are instrumental—empirically and ideologically—for registering this symptomatic awareness of humanity's discernible impact on the earth's ecosystems. The essays collected here pursue historical avenues and open conceptual pathways to address media history's "Anthroposcenery," to borrow a term from Karl Schoonover's contribution. The objective is to examine the ways that film and media histories look different from the perspective of the Anthropocene, which designates a new geological epoch in which human activities are significant enough to affect planetary ecosystems. Parallel to climate science's tracking of the stresses placed on the environment by industrialization, film and media texts trace a cultural history of the Anthropocene, charting the ways of living and thinking that have led to this crisis.

The term "Anthropocene" recognizes that humanity now collectively functions as a geological force, capable of intervening in a biospheric system once thought large and stable enough to simply absorb the waste products of human civilization. Of increasing relevance to the environmental humanities, the term "Anthropocene" was first popularized in the year 2000 by chemist Paul Crutzen and ecologist Eugene Stoermer to suggest that the postglacial geological epoch of the Holocene, which coincided with the rapid expansion of the human species, has ended and a new epoch has arrived.[9] Scientists are in the process of formally certifying the Anthropocene, overseen by a working group of the International Commission on Stratigraphy, and ratification requires a clear marker in the stratigraphic record, a "golden spike," as it called. The start of the Anthropocene is often dated to 1945 (see Jennifer Fay's contribution), as the inauguration of both the nuclear age and the Great Acceleration, designating an exponential growth in observable stresses to planetary ecosystems from the effects of global capitalism.[10] Locating the transition between the Holocene and the Anthropocene in 1945, at the start of the postwar economic expansion, makes cinema into a witness of a turning point in geological time, and as a result, the history of film and the history of climate become explicable in terms of one another. Other proposed dates link the Anthropocene to a longer history of industrial capitalism beginning

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Paula Willoquet-Maricondi, ed., *Framing the World: Explorations in Ecocriticism and Film* (Charlottesville: University of Virginia Press, 2010).

8 Dipesh Chakrabarty, "The Climate of History: Four Theses," *Critical Inquiry* 35, no. 2 (Winter 2009): 197–222; Dipesh Chakrabarty, "Climate and Capital: On Conjoined Histories," *Critical Inquiry* 41, no. 1 (Autumn 2014): 1–23.

9 Paul Crutzen and Eugene Stoermer, "'The Anthropocene,'" *Global Change Newsletter*, no. 41 (May 2000): 17–18, http://www.igbp.net/download/18.316f18321323470177580001401/1376383088452/NL41.pdf.

10 For more on the Great Acceleration, see J. R. McNeill and Peter Engelke, *The Great Accleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: Belknap Press of Harvard University Press, 2016).

with the invention of the steam engine in the 1780s, or to the history of imperialism (measurable in the 1610 "Orbis spike") in which colonialist violence, mass death, and cross-cultural contact intermingling plant and animal species left discernible traces in the geological record (see Kali Simmons's contribution).[11] Regardless of the chronology that scientists ultimately adopt, cultural historians can make use of the Anthropocene's multiple onset dates to find parallels, patterns, and uncanny synchronicities between human actions and ecological change. The Anthropocene, in other words, puts an end to any separation of natural history from human history, and if there is any representational medium that best captures natural environments made human, it is cinema.

These In Focus responses offer an invitation to develop historiographical methods that locate and uncover these points of intersection in order to find new ways of telling film and media history in the epoch of the Anthropocene. This means remaining attentive to how media forms both perpetuate and critique the ideologies that underwrite the Great Acceleration. The Anthropocene perspective on film and media history might be compared to the famous reverse-zoom camera technique used in Alfred Hitchcock's *Vertigo* (1958), zooming into the past to closely analyze specific film and media texts while simultaneously tracking out to consider historical time on a geological scale. The reverse zoom of Anthropocene history involves a dizzying confluence of human and nonhuman perspectives. Situating media history in its relation to geological history entails bridging largely incommensurable time scales, but it is precisely the disorienting perspective of the Anthropocene, where previously slow-paced geological and climatological transformations appear accelerated to the scale of human action, that makes these connections apparent. Each essay in this section isolates sites at which the focal points of the lenses of media history and Earth's geohistory converge.

The term "Anthropocene" is a topic of impassioned debate that has generated a number of competing frameworks for characterizing this epoch. By foregrounding humanity as a unitary force (the *anthropos* of the Anthropocene) collectively responsible for ecological collapse, the Anthropocene arguably fails to account for the disproportionate responsibility attributable to various actors. The continuing inequities of fossil-fuel capitalism and imperialism are integral to historicizing not only the differential causes of environmental disasters but also their unevenly distributed effects, as economically dispossessed populations are left vulnerable to a changing climate while the economies of the Global North develop mitigation strategies. The Capitalocene, an alternative framework to the Anthropocene most commonly associated with Andreas Malm and Jason W. Moore, emphasizes the capitalist extraction of value from nature in pursuit of unrestricted economic growth. This approach faults not humanity as a whole but industrialization's dependence on the "free gift" of nature.[12] Donna Haraway's Chthulucene offers another alternative to the "too big" frameworks of the

11 See Crutzen and Stoermer, "'The Anthropocene,'" 17–18; David Biello, "Mass Deaths in Americas Start New CO_2 Epoch," *Scientific American,* March 11, 2015, https://www.scientificamerican.com/article/mass-deaths-in-americas-start-new-co2-epoch.

12 See Andreas Malm, *Fossil Capital: The Rise of Steam Power and the Roots of Global Warming* (New York: Verso, 2016); Jason W. Moore, *Capitalism in the Web of Life: Ecology and the Accumulation of Capital* (New York: Verso, 2015); and Jason W. Moore, ed., *Anthropocene or Capitalocene? Nature, History, and the Crisis of Capitalism* (Oakland, CA: PM Press, 2016).

Anthropocene and Capitalocene, forsaking narratives about human exceptionalism and capitalist accumulation to take up residence among the chthonic beings of the earth. Their tentacular relations offer a model for sustainable living on a damaged planet.[13] These conceptual interventions have much to offer film and media studies, which need not select among the proliferating terms.

In return, film and media studies is particularly well suited to understanding the experience of the Anthropocene because it has long known how to think about nature made strange by human intervention. The natural environments perturbed and reshaped by humanity's hand ever more closely resemble the artificial environments created by film. What used to be called simply nature now seems like something more cinematic, an amalgam of the human and nonhuman, continually changing and unsettled through their interaction. Film and media histories offer many lessons for living in the Anthropocene, for understanding how we got here and what is to come. ✻

13 Donna Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016).

Cinema's Hot Chronology (5:29:21 Mountain War Time, July 16, 1945)

by Jennifer Fay

In the history of film and media there are banner periods in which technology, aesthetics, and politics collide in especially striking ways. In the US context, we could rattle off years (e.g., 1896, 1927, 1946) that exemplify what James Chandler, borrowing from Claude Lévi-Strauss, calls "hot chronologies," dates that are overrepresented in historical accounts relative to both their duration and as compared with other periods that are "less eventful." The "thermometric metaphor," explains Chandler, has nothing to do with actual temperatures. In Lévi-Strauss's anthropology, hot chronologies emerge out of advanced "hot societies," those "in which time may be said to count and be counted" in the annals of world history. This is in contrast to "primitive" cultures, which are so seemingly invariable or "cold" that they "lack internal temperature deviations" and therefore appear to have an "internal environment" resistant to periodization and therefore to elucidation by history.[1]

1 James Chandler, *England in 1819: The Politics of Literary Culture and the Case of Romantic Historicism* (Chicago: University of Chicago Press, 1998), 65.

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This essay focuses on a hot chronology of a different and perhaps more literal order that takes stock of rising temperatures and radioactive fallout and also connects a hot chronology to the first-world hot society most responsible for global warming. Yet this chronology encapsulates utterly incommensurable scales of time and space, so vast and so small that it should fall outside of what "counts" as history altogether. It also enfolds film, a particular film that hardly registers as significant in the histories of film, into an expansive geological past and an apocalyptic end of human innovation. What are cinema's hot chronologies in the Anthropocene epoch? How can we "do" film and media history against the deep time of a geological record and planetary future that far exceed humanity, much less cinema? I propose one such chronology here and consider the reading practices and aesthetic attunements that this instant summons forth.

Two Epochs, One Instant. The time stamp 5:29:21 Mountain War Time, July 16, 1945, is etched in both historical memory and the planet's geological record as the precise beginning of two different epochs: the nuclear and the Anthropocene, each producing a new kind of human, a different kind of world, and a peculiar relationship of humankind to both history and the future. At this moment exactly, the American military and scientific establishment detonated the most powerful weapon the world had known. The Trinity nuclear test marked the onset of a new, soon-to-be-global paradigm in which weapons of mass destruction were a reality of twentieth-century life. German-Jewish philosopher and antinuclear activist Günther Anders summed up the meaning of Trinity in 1956 when he remarked that the test had given rise to a new ontology of the human as "cosmic parvenus . . . usurpers of apocalypse," who had now replaced the godly power of "*creatio ex nihilo*" with its demonic other, "*potestas annhiliationis*" or "*reductio ad nihil*."[2] The concentration camps, he explained, expanded the truism that "all men are mortal" into a new lethal proposition: "All men are exterminable." But nuclear weapons initiated "a new historical epoch" with an even more expansive caption: "Mankind as a whole is exterminable."[3] Previous wars had destroyed "'merely' people, cities, empires or cultures," but humanity in some form always survived.[4] Now humanity and everything that grants the species immortality, its history and archives, was subject to immediate and remainderless erasure. Like many midcentury philosophers, Anders envisions a future thermonuclear war so devastating that it erases time altogether, catapulting our dead planet into a cosmic no-man's-land and inhuman temporality. "All history [before Trinity] is now reduced to prehistory." In this, "the Last Age" ("even if it should last forever"), human existence is summed up in the paradox of "not yet being non-existing." Trinity marks the beginning of "the possibility of self-extinction" that "can never end, but by the end itself."[5]

In 2015 the Anthropocene Working Group of the International Commission on Stratigraphy returned to the Trinity time stamp as the start date for the Great Acceleration and thus also the proposed Anthropocene epoch. The fallout from Trinity and

2 Günther Anders, "Reflections on the H Bomb," *Dissent* 3, no. 2 (Spring 1956): 146–147.

3 Anders, 148.

4 Anders, 147.

5 Anders, 146.

subsequent nuclear explosions introduced to the earth artificial radionuclides that are now embedded in the planet's sedimentary record, providing a uniquely anthropogenic signal. In this new geological epoch, human activities on the planet (e.g., carbon emissions, large dam construction, deforestation) have risen to such preponderant levels that they have intermingled with and altered the Earth system, setting the planet on a climatological course beyond what natural science can predict. The Trinity test did not cause the Anthropocene, however; it merely serves as a stratigraphically clear marker. "We suggest," writes the working group, "that the Anthropocene . . . be defined to begin historically at the moment of detonation of the Trinity A bomb." And they specify: "5:29:21 Mountain War Time . . . July 16, 1945." Although the date could be moved up several years on the basis of the evidence, "placing the benchmark at the first nuclear test provides a clear, objective moment in time."[6]

Never has a geological epoch been coordinated with the human calendar and history, much less pinpointed to the exact instant. Suddenly geological time, as archived in stone, is aligned with the microchronology of seconds. Sharing the same inaugural instant, however, these two epochs posit a different thesis for humanity and its future. From the perspective of nuclearism, 5:29:21 is the instant humanity became its most *destructive*, capable of instant self-extinction. From the perspective of the Anthropocene, it marks humanity at its most *unnatural* and on a trajectory in which human life erases what's left of the natural world. It so happens that the onset of these two epochs is also archived on film. Should the Anthropocene be officially adopted and the July 1945 start date accepted, this would also be another first in geological and film history: a movie marking the exact transition when one geological epoch ended and another began.

Trinity and the Ends of The Anthropocracy. In *Trinity 1945* (US Department of Energy, 1945), it is difficult to perceive the historic import of this day.[7] Shot in color but silent, the twelve-minute film opens with a series of panning shots across New Mexico's Chihuahua Desert. Low mountain peaks dotted with yucca and mesquite bushes dwarf the few vehicles parked along a distant roadway. In the hands of a professional cinematographer, this could be an awesome view: a near-pristine landscape absent signs of human residency. But this is not a professional film or an especially artful framing. From the tremulous panning shots, a sudden cut places us at the base of a tower where men laboriously unload from a truck "the gadget"—the two-hundred-ton, steel-encased nuclear device. Keeping a distance (but hardly keeping safe!), the camera records the effort and time needed to move this preponderant weapon, arm it by hand (as it were), and then, as seen from below, hoist it up the tower. Roughly eight and a

6 Jan Zalasiewicz, Colin N. Waters, Mark Williams, Anthony D. Barnosky, Alejandro Cearreta, Paul Crutzen, Erle Ellis, Michael A. Ellis, Ian J. Fairchild, et al., "When Did the Anthropocene Begin? A Mid-Twentieth Century Boundary Level Is Stratigraphically Optimal," *Quarternary International* 383 (2015): 196–203, 200.

7 The film can be viewed at the Internet Archive, https://archive.org/details/gov.doe.0800001. For a discussion of nuclear test films at the Nevada Test Site, see Susan Courtney, *Split Screen Nation: Moving Images of the American West and South* (New York: Oxford University Press, 2017), 191–254. For a discussion of nuclear testing as a phenomenon of the Anthropocene, see Jennifer Fay, *Inhospitable World: Cinema in the Time of the Anthropocene* (New York: Oxford University Press, 2018), 59–96.

half minutes of this film are devoted to these preparatory activities, shot with what appears to be a handheld 16mm camera, in the spirit of a home movie, or even the Lumière brothers' *Embarquement d'une chaudiére* (1896). With the gadget still ascending the shot tower under blue skies and a bright sun, the film abruptly goes black: have we arrived at the end of the world, or just the end of the reel?

The detonation of the device, signaling the onset of a new deadly epoch, is marked when the screen flashes from black to white. A desert floor is barely visible when atomic light overwhelms the screen. Seconds later a glowing mushroom cloud forms; this is what will become the iconic, even cliché, image of the nuclear age. In *Trinity 1945*, we see this same detonation not once, but three separate times, each from different camera positions, filming speeds, and exposure rates. The explosive sequence is both an upgrade to 35mm film stock and a throwback to early cinema's attractional overlapping editing, a repetition that at once forecasts a regime of nuclear bombing and testing to come but that also provides no reassuring immediate after. A film that begins with an image in which a bit of civilization is overwhelmed by natural formations ends with an image of science overwhelming and replacing creation.

Time is both condensed in *Trinity 1945* (to eliminate the dead time of preparation) and expanded (to repeat and extend the portentously exterminating event of detonation). With each version, the explosion becomes an increasingly groundless abstraction negating any distinction between foreground and background. Yet the instant 5:29:21, so essential to marking both the nuclear and Anthropocene epochs, is lost to perception and too minute and discrete, too fast and complex, at this distance, for film to record.[8] Richard Rhodes describes this primordial explosion as a series of invisible "millisecond scale . . . events." What we see are two blinding but short flashes (too close together to be distinguished as such) at about 5:30. The shock front of the blast "cools into visibility," and only then does the mushroom cloud rise. The fireball we see "is several things at once: [a]n isothermal sphere invisible to the world; a cooling wave moving inwards toward that sphere, eating away its radiation; a shock front propagating into undisturbed air, air that has not yet heard the news." Keeping time with nuclear physics, "this is a slow process, taking tens of seconds."[9]

However clumsy and inadequate, this first film of the nuclear epoch plays with the optics of a vanishing point, perhaps even literalizing vanishing as an aesthetic operation as the visible desert gives way to the detonation and its abstracting visual culture. Indeed, maybe Trinity marks the beginning of the end of cinema as the inheritor of Renaissance perspective and the rational human spectator it presupposed. The early modern spatial field, Erwin Panofsky argues, ruled its world according to geometric calculation, translating "psychophysical space" into a "detheologized," "mathematical space" whose vanishing point attributed to the onlooker a knowing spatial mastery.[10] "The history of perspective may be understood with equal justice as a triumph of the distancing and objectifying sense of the real, and as a triumph of the distance-denying

8 Photographs of the detonation are more exact, but they do not animate the transition from the prenuclear to the nuclear age.

9 Richard Rhodes, *The Making of the Atomic Bomb* (New York: Simon & Schuster, 1986), 671.

10 Erwin Panofsky, *Perspective as Symbolic Form* (New York: Zone Books, 1991), 66.

human struggle for control."[11] The appearance of perspective as a technique in art was the "sign of an ending when antique theocracy crumbled" and the sign of a beginning when "modern 'anthropocracy' first reared itself."[12] Perspective is the ur-optics of humanism that begins with the superimposition of a grid onto a visible world and the production of an onlooker for whom seeing is tantamount to knowing and controlling the visual field as projected even beyond the frame and perhaps also into the future. As Panofsky declares, "the discovery of the vanishing point . . . is, in a sense, the concrete symbol for the discovery of the infinite itself."[13] In *Trinity 1945*, the calculation of this new atomic science overwhelms not only the natural world but also the visual technology whose optics emerge out of the anthropocracy that nuclearism threatens to erase. The vanishing in this film—the point at which a landscape appears to disappear into a perspectiveless fulguration—is both in front of the viewer spatially and ahead of the viewer chronologically as an image not of infinity but of the end itself. What we see not once but three times with the repeated detonation is a forecast of a future war that forecloses the possibility of any kind of future.

A Catastrophe Barring Catastrophe. As a film documenting the onset of the Anthropocene epoch, however, *Trinity 1945* also fails to capture the uniqueness of 5:29:21 as the onset of the age in which anthropogenic materials first settled into the planet. The film is too fast, too short, and too attuned to the immediate visible light patterns to capture the radioactivity, or to follow the mushroom cloud (at its peak, six miles high) that would form and drift across the country, depositing synthetic elements onto the earth it passed over. The film is too short to linger with surfaces that will harden into stone. These Anthropocene traces, like the nuclear detonation, are also not visible to a cinematic technology too attuned to human ways of seeing the world. And we must rethink our interpretation of the end of this film in light of the Great Acceleration to come.

Indeed, the oft-reproduced socioeconomic metrics of the Great Acceleration, reflecting planetary "human enterprise" after 1945, are signs not of a devastated or even warmongering humanity. Instead, the graphs indicate postwar consumer confidence, affluence, and even peace as signaled by the exponential rise in international trade, travel, and telecommunications.[14] Nuclear materials do not feature in any of these significant graphs, and none of the environmental scientists claims that Trinity or atomic testing caused the Great Acceleration. The socioeconomic trends signal disaster only when set against changes to the "Earth system trends" that they inadvertently and in aggregate cause to spike: rises in nitrous oxide, methane, and carbon

11 Panofsky, 67.

12 Panofsky, 72.

13 Panofsky, 57.

14 The metrics include population, real gross domestic product, foreign direct investment, urban population, fertilizer consumption, large dams, water use, paper production, transportation, and telecommunications. See Will Steffen, Wendy Broadgate, Lisa Deutsch, Owen Gaffney, and Cornelia Ludwig, "The Trajectory of the Anthropocene: The Great Acceleration," *Anthropocene Review* (2015): 1–18, 4, 6.

dioxide, not to mention tropical forest loss and the expansion of domesticated land.[15] The socioeconomic trends have not only altered the planet but also made it increasingly imprinted by human design and hostile to Holocene life. From the perspective of climate science, times of war and economic depression may be good for the environment, as they are generally associated with depressed birth rates, checks on consumer spending, and bans on travel. Periods of relative peace and prosperity are far more damaging.[16] Compared with nuclearism's dead ends, the Anthropocene posits a proliferative humanity, a species whose capacity to make and consume materials rises exponentially after war.

Historians J. R. McNeill and Peter Engelke state in their book *The Great Acceleration* that the postwar trends are unsustainable. There are, after all, limits on how much groundwater can be pumped, fossil fuels burned, marine fish captured, and so forth, and there are only so many more rivers to dam and trees to fell. Yet as they declare in their introduction, "The Anthropocene, *barring catastrophe*, is set to continue."[17] The trends of the Great Acceleration will have to decline as a result of diminished resources, they note, but the Anthropocene epoch it sets into motion will "last long into the future, barring some calamity that removes humankind from the scene."[18] The Anthropocene, these historians tell us, is a catastrophe barring catastrophe. Its image-world is not devastation, but the persistent routines of everyday, first-world, middle-class life and the transnational industries and military infrastructures that support it.

The Trinity test, from this perspective, is just one of many polluting, resource-intensive, highly unnatural activities carried out in the name of protecting, if not promoting, the culture of the Great Acceleration. It is the first of 1,054 nuclear tests carried out by the US military, and *Trinity 1945* is the first of several thousand US films to be made of such tests.[19] The film itself performs the compulsion to repeat the explosion, first on film and then in the world.

What is stunning about this hot chronology is that there is an amateur film capturing the onset of these two incommensurable epochs on Earth. As an image of the nuclear end, *Trinity 1945* is a film about an apocalypse barring apocalypse. In keeping with

15 For this graph, see Steffen et al., "Earth System Trends," 7.

16 The 2008 global financial market crash, for example, produced a measurable reduction in greenhouse gas emission. See the US Energy Information Administration, *Emissions of Greenhouse Gases in the U.S.* (US Department of Energy: Washington, DC, 2009), https://www.eia.gov/environment/emissions/ghg_report/index.php.

17 J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: Harvard University Press, 2014), 5. Italics mine.

18 McNeill and Engelke, 208.

19 Of the 1,054 nuclear tests, 24 were carried out in conjunction with the British military. For a list, see US Department of Energy, National Nuclear Security Administration Nevada Field Office, *United States Nuclear Tests: July 1945 through September 1992* (Oak Ridge: US Department of Energy, 1994), xi. For a discussion of the proliferation of US atomic test films and the secret film studio created to make them, see Kevin Hamilton and Ned O'Gorman, *Lookout America: The Secret Hollywood Studio at the Heart of the Cold War* (Hanover, NH: Dartmouth College Press, 2018). According to Zalaziewicz and colleagues, in "When Did the Anthropocene Begin?" (196), atomic bombs were detonated "at the average rate of one every 9.6 days from 1945 to 1966." This statistic compares with the equally startling fact that large dams were constructed at a rate of one per day over the past sixty years. See Colin N. Waters, Jan Zalasiewicz, Colin Summerhayes, Anthony D. Barnosky, Clément Poirier, Agnieszka Gałuszka, Alejandro Cearreta, Matt Edgeworth, Erle C. Ellis, Michael Ellis, et al. "The Anthropocene Is Functionally and Stratigraphically Distinct from the Holocene," *Science* 351, no. 6269 (2016): 137–147, 141.

"end times" critique, nuclearism is the event after which there is no after, and thus the last event that promises no revelation or hope for redemption. The once-known visual field of the New Mexico desert simply incinerates, and we are left in the nuclear haze of nothingness. By ending with the end itself, *Trinity 1945* provides this image for a potential global nuclear war that would end all human potential. Read differently, however, *Trinity 1945* is also a catastrophe barring catastrophe. The repetition of the end is suggestive of what would become the ongoing regime of global atomic testing. Thus, the catastrophe of nuclearism, far from bringing about the end of the Anthropocene, projects into a future the almost-daily event of detonation—an everyday catastrophe—that would soon lose all singularity and association with any especially hot chronology. ✻

Cinema's Natural History

by James Leo Cahill

In the name of recycling, this contribution attends to old film theories and films that are strangely attuned to a *longue durée* conceptualization of the Anthropocene, or the geological epoch in which humans have become a determinant factor in climatological and ecological change on a global scale.[1] Selmin Kara has written insightfully on "anthropocenema" in reference to a cycle of contemporary films that allegorize the environmental degradation and accelerating extinction of the extreme present and even more extreme future.[2] In developing natural history as an anthropocenematic genre, I expand its film historical scope and shift emphasis from a taxonomic categorization of shared textual properties to the conceptualization of genre as a mode of historical interpretation and perception applicable across a range of cinematic sources, from nature documentaries to studio-produced fictional narratives. The generic work of natural history enables us to rethink film and media at the level of text, medium, and industrial practices of expenditure and conservation along historiographical axes that often disturb and reconfigure our experiences of and implication in pasts, presents, and possible futures.

Natural history commonly refers to the study of living organisms and their environments, but in the 1920s and early 1930s key surrealists

1 Paul J. Crutzen and Eugene F. Stoermer, "The Anthropocene," *International Geosphere-Biosphere Programme Global Change Newsletter* 41 (May 2000): 17.

2 Selmin Kara, "Anthropocenema: Cinema in the Age of Mass Extinction," in *Post-Cinema: Theorizing 21st Century Film*, ed. Shane Denson and Julia Leyda (Sussex, UK: Reframe, 2016), 750–784.

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and critical theorists, including Theodor W. Adorno, Walter Benjamin, and Siegfried Kracauer (who all followed surrealism with considerable, if ambivalent, interest), developed parallel practices of natural history as a mode of looking at and interpreting the world's signs.[3] Max Ernst, according to Salvador Dalí, demonstrated that "the history of dreams, miracles, surrealist history, is above all and in every sense a natural history."[4] Ernst's surrealist history as natural history was precisely concerned with the traces and signs of extinction and catastrophe of the past as well as their enigmatic address to the present, which his work brought into visibility. In 1926 the artist published his folio of *frottages* (rubbings), *Histoire naturelle*, which art historian Ralph Ubl conceptualizes as a "ruin writing of nature and nature's afterlife."[5] Simultaneously documents and interpretations, Ernst's *frottages* discover lost traces of nature intermixed with uncanny cultural signifiers, such as his reworkings of material from illustrated prehistoric fauna primers and advertisements. His art gives form to a historicized vision of nature that also puts human history into geological temporalities through his attention to catastrophic events that rupture the cyclical temporalities of nature (notably *The Sea and the Rain* from *Histoire naturelle* and his 1933 painting of an inundated continent, *Europe after the Rain*). Louis Aragon's *Paysan de Paris*, also from 1926, similarly developed an optic for critically examining twentieth-century commodity culture through the estranged gaze of a natural historian. Aragon studied the "human aquariums," "the cult of the ephemeral," and "the feeling for nature" inspired by the living ruins of the Passage de l'Opéra and landscapes of the Parc des Buttes-Chaumont.[6] Ernst's and Aragon's shared fascination with big and small processes of extinction, through their attention to depopulated landscapes, outmoded objects, and the afterlives of things, presented surrealism as a pioneering practice of natural history for the twentieth century.

Benjamin developed a complementary concept of natural history in *The Origin of the German Tragic Drama* (1928).[7] Beatrice Hanssen explains that Benjamin used "natural history" to designate "another kind of history; one no longer purely anthropocentric in nature or anchored only in the concerns of human subjects," and one that challenged the systems of exclusions operating in humanist modes of history.[8] Benjamin's multifaceted natural history countered the notion of nature as eternal and history as rational human progress, by emphasizing forces of transience, decay, and entropy exemplified by ruins, in which the products of human endeavor, nonhuman life, and

3 See Richard Wolin, "Benjamin, Adorno, Surrealism," *Journal of Comparative Literature and Aesthetics* 11, nos. 1–2 (1988): 124–156; Ian Aitken, "Distraction and Redemption: Kracauer, Surrealism and Phenomenology," *Screen* 39, no. 2 (1998): 124–140; and Susan H. Gillespie, ed. and trans., *The Challenge of Surrealism: The Correspondence of Theodor W. Adorno and Elisabeth Lenk* (Minneapolis: University of Minnesota Press, 2015).

4 Salvador Dalí qtd. in Mikhail Iampolski, *The Memory of Tiresias: Intertextuality and Film* (Berkeley: University of California Press, 1995), 172.

5 Ralph Ubl, *Prehistoric Future: Max Ernst and the Return of Painting between the Wars*, trans. Elizabeth Tucker (Chicago: University of Chicago Press, 2013), 75.

6 Louis Aragon, *Paysan de Paris*, in *Œuvres poétiques complètes* (Paris: Gallimard, 2007), 1:152, 233.

7 Walter Benjamin, *The Origin of the German Tragic Drama*, trans. John Osborne (New York: Verso, 2003), 47.

8 Beatrice Hanssen, *Walter Benjamin's Other History: Of Stones, Animals, Human Beings, and Angels* (Berkeley: University of California Press, 1998), 1–2, 10, 25, 48.

built and organic milieus converge.[9] Like Ernst and Aragon, his conception of natural history privileged contingency, chance, and attention to outmoded objects and residual presences, as well as unexpected returns.

Adorno, in his 1932 lecture "The Idea of Natural History," posited natural history as a materialist alternative to German idealism and the contemporary phenomenology of Heidegger that was, as Nicholas Baer writes, "sensitive to the concrete, corporeal suffering brought about by material conditions."[10] A dialectical mediation of its two constitutive terms, natural history was "not a synthesis of natural and historical methods, but *a change of perspective*."[11] Although Adorno did not cite his former tutor and friend, Siegfried Kracauer may be read as providing one of the most lucid accounts of natural history as a shift in perspective and perception, beginning with his 1927 article "Photography."[12] Opening with a comparison of two photographs of young women taken sixty years apart—a "demonic diva" from the present and a grandmother as a young woman—Kracauer reflected on the historiographical implications of photography, developing a natural-historical media theory through ghosts, garbage, and uncanny creatures.[13] As the passage of time or rapid global circulation separates photographic media from their initial contexts of production and reception, the cultural logic that maintains the apparent unity of the image and what it depicts begins to erode. Superannuated photographs appear increasingly like a species of "homeless images."[14] The coherence of the image becomes perceptible as mere spatial contiguity, and its contents appear as contingent and fragmentary. In its afterlife, thanks to the anthropological indifference of the camera's lens, the legibility and content of a photographic document may become radically different from what its initial users saw in it. The grandmother outfitted in a heavy crinoline dress fades from the picture as a distinct individual, and over time she resembles less a person than a mannequin upon which to display the curious fashions of yesteryear: "[t]he truth content of the original is left behind in its history; the photograph captures only the residuum that history has discharged." Of this "discharge," Kracauer notes, "photography appears as a jumble that consists partly of garbage [*Abfällen*]."[15] The aged or decontextualized photograph resembles a junkyard, shipwreck, or haunted house in

9 Hanssen, 3; and Benjamin, *Origin of the German Tragic Drama*, 177–178.

10 Theodor W. Adorno, "The Idea of Natural History," trans. Bob Hullot-Kentor, *Telos: Critical Theory of the Contemporary* 60 (1984): 111–124; and Nicholas Baer, "Natural History: Rethinking the *Bergfilm*," in *Doch ist das Wirkliche auch vergessen, so ist es darum nicht getilgt: Beiträge zum Werk Siegfried Kracauers*, ed. Jörn Ahrens, Paul Fleming, Susanne Martin, and Ulrike Vedder (Wiesbaden: Springer, 2017), 294.

11 Adorno, "Idea of Natural History," 118. Emphasis added.

12 Siegfried Kracauer, "Photography," in *The Mass Ornament: Weimar Essays*, trans. and ed., and with an introduction by, Thomas Y. Levin (Cambridge, MA: Harvard University Press, 1995), 47–63; and Kracauer, "Die Photographie," in *Das Ornament der Masse: Essays* (Frankfurt: Surhkamp, 1977), 21–39.

13 On the natural-historiographic aspects of Kracauer's media theory, see Jennifer Fay, "Antarctica and Siegfried Kracauer's Cold Love," *Discourse* 33, no. 3 (2011): 291–321; and Miriam Hansen, *Cinema and Experience: Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno* (Berkeley: University of California Press, 2011), 27–39.

14 Kracauer, "Farewell to the Linden Arcade," in *Mass Ornament*, 340; "Abschied von der Lindenpassage," in *Das Ornament der Masse*, 330.

15 Kracauer, "Photography," 55, 51; "Die Photographie," 30, 25.

which the disintegration of its structures and the growth of new and unexpected forms intermix, presenting an Ernst-esque "ruin writing."

Kracauer imagined photographic media to be suffused by a negativity that swallows the grandmother from her portrait, producing what Jennifer Fay provocatively calls a "significant hole" from which a productively alienated—and even alien—mode of vision and historical analysis may be exercised.[16] What we see in old photographs is a "disintegrated unity" in which the various elements held together by familiarity or ideology in the original context become estranged from each other and us, taking on appearances of an "unredeemed ghostly reality" that causes a shudder: "[o]nce the grandmother's costume has lost its relationship to the present, it will no longer be funny; it will be peculiar, like an ocean-dwelling octopus [*ein submariner Polyp*]."[17] Kracauer's phrasing translates literally as "an undersea polyp," such as the microscopic variety that takes on a ghostly, vampiric appearance when magnified by the microscope and cinematograph in F. W. Murnau's *Nosferatu* (1922). Whether in the form of an octopus or a polyp, temporal and contextual displacements invite us to view the elements of a photograph in a different light, as one might a strange zoological specimen or an alien landscape. In the words of *Nosferatu*'s Paracelsian Professor Bulwar, they become "ethereal . . . little more than a phantom."[18] The aspects and referents of a photographic image, in its increasingly estranged and estranging afterlife, begin to resemble uncanny cinematic creatures, castoffs, and castaways, strange remainders that possess a haunting power alternately ethereal and obstinately material.

Photographic media render visible the dialectical relationship between nature and history: "The disorder of the detritus reflected in photography cannot be elucidated more clearly than through the suspension [*Aufhebung*] of every habitual relationship among the elements of nature. The capacity to stir up the elements of nature is one of the possibilities of film. This possibility is realized whenever film combines parts and segments to create strange constructs."[19] It is not just costume and fashion that photography can reveal to be contingent, but our perceptions of inhuman nature, too, which no longer appear as a transhistorical given. Alluding to the ghostly effects of photographs and old newsreels, such as those projected at the Studio des Ursulines in Paris, Kracauer's media ecology emphasizes the power of film to animate and actualize the productive negativity and alienation of photographic images. Photographs suspend. Kracauer's use of the Hegelian term *Aufhebung* to describe photography's treatment of the relations of detritus and milieu suggests an abolishing negation, an overcoming that is at once the preservation and transformation of what the camera captures. Films agitate. They potentially "stir up" and set in motion new relations among nature's heterogeneous elements, particularly through the "strange constructs"—the creative

16 Fay, "Antarctica and Siegfried Kracauer's Cold Love," 301.

17 Kracauer, "Photography," 62; "Die Photographie," 38.

18 For more on the biological footage in *Nosferatu*, see, Thierry Lefebvre "Les métamorphoses de Nosferatu," *1895* 29 (1999): 61–77; and Tom Gunning, "To Scan a Ghost: The Ontology of Mediated Vision," *Grey Room* 26 (2007): 95–96, 98.

19 Kracauer, "Photography," 62–63; "Die Photographie," 39.

anatomy, geography, and neo-zoology, to borrow a term from Jean Painlevé—made possible by juxtaposition, montage, and spatial and temporal dislocations.[20]

The dialectical perspective of natural history intensifies with the passage of time. By learning to attend to it, one may develop sensitivities to perceiving the present in manners that reveal the contingency of what might otherwise be mistaken for necessary, and the fragility of what might otherwise be taken for durable and solid. An education in seeing like a natural historian is one of the ways that old film theory and films offer an entry point into historical as well as ecological inquiry. But where cinema history requires a rigorous contextualization of the objects of study—making them coherent to the present—a natural history of cinema prescribes a salutary bit of ghostly ahistoricism for considering how the traces of the past we receive address us as present. Drawing inspiration from surrealist technique, one must, as a dialectical complement to rigorous historical research (and not in place of it), experiment with the value of strategic displacement and recontextualization as a way of making text and context newly strange and resonant with one another. This requires a willingness to shatter what has been reconstructed in order to allow its shards to refract otherwise.

As they age, all films—documentary or fiction—become potential natural history films in the Frankfurt and surrealist understanding of the term. Their environments become increasingly legible as historically contingent negotiations of the created and the found, of artificial and organic ecosystems, and of collective endeavors to manage or re-create them.[21] Nature films, in their historical afterlives, offer a disquieting address to a present marked by ecological precarity. They become more visibly human, cultural, and expressive of the filmmakers' fantasies about animals, milieu, and the world beyond the human being, taking on the appearance of ecological ruins—but also ruins of a *mentalité* regarding animals and ecosystems—as their original referents retreat, become critically endangered, and disappear. Fictional films likewise accrue an increasingly documentary value and increasingly resemble films of a strange nature. In turning a gaze trained by cinematic natural history back on its object, one may also contribute to the writing of a natural history of cinema, considering its documents as species of conservation image and expenditure image (sometimes both at once), and its myriad configurations of production, distribution, and exhibition as participating in or transforming what Julio García Espinosa, in the context of an anticapitalist "imperfect cinema," called "the culture of waste."[22]

The work of old films and film theories viewed through a natural historian's gaze is far from over: its most pressing ethical and political implications may be still to come. We must learn to see our own troubled present with the eyes of natural historians, which is also to say, through a surrealist optic. This may offer a new way of handling filmic sources. But it may also become a strategy of survival in an era in which the

20 Jean Painlevé, "Drame néo-zoologique," *Surréalisme* 1 (1924): 12.

21 See Brian R. Jacobson, *Studios before the System* (New York: Columbia University Press, 2015), 24; and Jennifer Fay, *Inhospitable World: Cinema in the Time of the Anthropocene* (New York: Oxford University Press, 2018).

22 Julio García Espinosa, "Meditations on Imperfect Cinema . . . Fifteen Years Later," *Screen* 26, nos. 3–4 (1985): 94. See also Nadia Bozak, *The Cinematic Footprint: Lights, Camera, Natural Resources* (New Brunswick, NJ: Rutgers University Press, 2012).

transformations of milieus, ecosystems, and the planet trigger increasingly surreal events, and in which the hellish wastelands of the Comte de Lautréamont's *Les chants de Maldoror* become prophetic, or worse, merely descriptive.[23] ✻

23 Comte de Lautréamont, *Les chants de Maldoror*, ed. Daniel Oster (Paris: Presses de la Renaissance, 1977); see also Eugene Thacker's discussion of Lautréamont in *Tentacles Longer than Night, Horror of Philosophy*, vol. 3 (Washington, DC: Zero Books, 2015).

The Anthropocene's Nonindifferent Nature

by Graig Uhlin

Writing of his arrival by ship in New York in *Nonindifferent Nature*, Soviet filmmaker Sergei Eisenstein expresses admiration for the vertical uplift of the Manhattan skyline as it appears over the horizon. The skyscrapers seem to him "like rocket missile explosions frozen in flight," which dramatically capture the "*technical and material becoming*" of American industrial prowess.[1] The propulsive character of the city, not to be limited to these terrestrial heights, "takes airplanes and hurls them into the sky to conquer the stratosphere," as the blue sky "trembles" before this technological encroachment. On encountering this sight of skyscrapers coming into view, Eisenstein notes that one feels "that the earth is a sphere," as the apparently linear horizon reveals its curvature.[2] One might note that planetary boundaries are encountered here in overcoming them, in the liberation from being earthbound. The modern environmentalist movement utilized images of the whole earth, as seen from outer space, as visual reminders of the finiteness of the planet's resources, but in Eisenstein's anecdote, natural constraints arise only to be breached. This shift in attitude toward natural limits captures how remote the modernist celebration of mastery over nature is from the pressing concerns of our current environmental crisis. The Anthropocene has dispelled these illusions of mastery. Industrial society has accumulated debt by

1 Sergei Eisenstein, *Nonindifferent Nature*, trans. Herbert Marshall (New York: Cambridge University Press, 1987), 379 (original emphasis).

2 Eisenstein, 379.

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exploiting nature essentially for free, and this debt is coming due; as Bruno Latour notes of this new epoch, "the tone is no longer triumphal."[3]

The Anthropocene poses a challenge to the modernist project, and in this response, I consider what relevance modernist film aesthetics—and specifically, Eisenstein's concept of "nonindifferent nature"—may have for our current environmental predicament. For Latour, the Anthropocene represents no less than "an alternative to the very notions of 'Modern' and 'modernity.'"[4] Proponents of ecological modernization continue to claim that capitalism can be made environmentally sound through the development of "green" technologies and sustainable energy production, but it is not possible to liberate the continual demand for economic growth from its constraint by natural limits.[5] What economists call the Jevons paradox illustrates the point: increasing the energy efficiency of a resource only accelerates the rate of its consumption, canceling out the efficiency gains as its use is scaled up.[6] Despite persistent advocacy for geoengineering, an article of faith among so-called ecomodernists, there is likely no technocratic solution for our environmental crisis.[7]

Moreover, aesthetic modernism has not traditionally been a source for ecological thinking. The modernist arts provided cultural responses to industrialization and urbanization, often in a celebratory key, and generally did not demonstrate significant awareness of the environmental issues of their day, including threats to biodiversity, industrial pollution, and wilderness conservation. Modernist evocations of the pastoral tended to dramatize its disruption and transformation by modernizing forces, as for example Eisenstein did with the veneration of the tractor in *The General Line*, his 1929 film about agricultural collectivization.

Recent studies of artistic and literary modernism, however, are reconsidering their relationship to environmental histories. In literary studies, Joshua Schuster considers American modernism's ambivalent response to environmentalism, its "fail[ure] to fully understand modernization" for the stresses industrialization places on natural environments.[8] Situated between romanticism and modern environmentalism, modernist writers maintained distance from nineteenth-century ideas of nature as self-regenerating plenitude, and as Schuster notes, its representations of nature tended toward irony and artifice. Even if its lack of environmentalist awareness means "modernism was never very green," Schuster argues that modernist aesthetics nonetheless registered and engaged aspects of ecological change.[9] Similarly, Bonnie Kime Scott's earlier

3 Bruno Latour, *Facing Gaia: Eight Lectures on the New Climatic Regime*, trans. Catherine Porter (Medford, MA: Polity Press, 2017), 115.

4 Latour, 77.

5 See, e.g., David Keith, *A Case for Climate Engineering* (Cambridge, MA: MIT Press, 2013).

6 For a critique of ecological modernization, see John Bellamy Foster, Brett Clark, and Richard York, *The Ecological Rift: Capitalism's War on the Earth* (New York: Monthly Review Press, 2010), esp. 121–150.

7 See, e.g., Arthur Mol, *Globalization and Environmental Reform: The Ecological Modernization of the Global Economy* (Boston: MIT Press, 2003); and Arthur Mol, David A. Sonnenfeld, and Gert Spaargaren, eds., *The Ecological Modernisation Reader: Environmental Reform in Theory and Practice* (New York: Routledge, 2009).

8 Joshua Schuster, *The Ecology of Modernism: American Environments and Avant-Garde Poetics* (Tuscaloosa: University of Alabama Press, 2015), 3.

9 Schuster, 3.

study of Virginia Woolf gestures to an ecocritical reading by calling for a "greening of modernism" that would attend to the often-overlooked role of nature's presence in modernist literature.[10] Informed by ecofeminist theory, Scott contrasts Woolf's holistic understanding of nature to the masculine privileging of culture found in traditional histories of modernism.

In film and media studies, emphasis has been placed on cinema's participation in modernity's technological control of nature through the production of climate-controlled environments. Brian Jacobson, for instance, traces the use of studio architecture to free early cinema from its dependence on natural elements, such as available sunlight. The earliest studios, such as Thomas Edison's Black Maria, provided "a technological form of environmental regulation" that crafted artificial spaces suitable for photographic reproduction.[11] Environmental control is also the basis for the "modernist weather" of Buster Keaton's slapstick comedies, as argued by Jennifer Fay. The manufacture of weather in *Sherlock Jr.* (1924) foregrounds its artificiality rather than functioning as a natural given: "All wind and rain, sun and calm need to be read as specifically produced."[12]

As these examples suggest, modernist aesthetics can act in service of the principles of modern ecology in that both call attention to background conditions. Ecology dispenses with the notion of nature as a transcendental value and instead develops techniques for visualizing how any ecosystem depends on the active regulation between an inside and outside, on the balance between inputs and outputs across a porous boundary. A static and unchanging natural world is reimagined as a set of dynamic processes and interactions that are as capable of degeneration and loss as of growth and evolutionary development. The modernist artwork similarly offers a critique of representational transparency to disclose the conditions that frame the representation—by disrupting, for example, the hierarchy between figure and ground. Schuster points to the quadrat, as pioneered by ecologist Frederic Clements, as one such device that offers a bridge between modern ecology and modernist aesthetics. The quadrat is a one-meter square used to study environmental change within a designated landscape. As a "universal minimal ecological object," the quadrat untethered the observation of nature from a humanist frame of reference, as its emptied square enacts a modernist reflexivity by functioning as both "a site for observation and for reflecting on how observation works."[13] One might think of Eisenstein's "dynamic square" as a cinematic version of an "ecograph"—an instrument for natural observation, like the quadrat—because its manipulation of aspect ratio denaturalizes the mechanism of observation. Just as the quadrat stages the dynamism of environmental change from within a consistent frame, Eisenstein considers the dynamic square as an optimal form

10 Bonnie Kime Scott, *In the Hollow of the Wave: Virginia Woolf and Modernist Uses of Nature* (Charlottesville: University of Virginia Press, 2012), 13.

11 Brian R. Jacobson, *Studios before the System: Architecture, Technology, and the Emergence of Cinematic Space* (New York: Columbia University Press, 2015), 19.

12 Jennifer Fay, "Buster Keaton's Climate Change," *Modernism/Modernity* 21, no. 1 (January 2014): 38.

13 Schuster, *Ecology of Modernism*, vii, ix.

that encompasses "every geometrically conceivable form of the picture limit."[14] For Eisenstein, the equality of height and width in the square image offers the dynamic interplay of the vertical and horizontal tendencies inherent to both nature and industry, presenting the ground for their mutual encounter.

These interventions point to the possibility that modernist film aesthetics, rather than being wholly defined by what Latour calls the "modern constitution" and the separation of nature and culture, may provide some anticipatory sense of the Anthropocene, or even a mode of visualizing the entanglement of humanity and nature.[15] In light of this possibility, I turn to Eisenstein's concept of nonindifferent nature. By the term, Eisenstein meant an artwork that provides "an image of the mutual absorption of man and nature one into the other," a dissolution of the individual into the environment through a sensation of their underlying unity.[16] Its simplest form, he remarked, stemmed from the use of landscape in silent film, because landscape could replicate music's ability to convey emotional moods. Its more mature form, as audiovisual cinematography, encompasses what Eisenstein refers to as the entire plastic construction of the film. In producing an experience of pathos, moreover, nonindifferent nature entails "the apparent removal of the contradiction between nature and the individual."[17] The term "nonindifferent" (in Russian, *neravnodushnaia*), through its particular conjunction of the negative prefix to the stem word, captures Eisenstein's understanding of nonhuman nature as dynamic and animated, matter enlivened by spirit. Eisenstein is not suggesting the projection of psychological states onto the natural world, nor is he psychologizing nature itself as an entity that cares about humanity. Rather, nature's nonindifference, as expressed through the ecstatic form of the artwork, describes its developmental and evolutionary character. As more than mere inert matter, organic nature resists static form. In a dialectical manner, form contains and provisionally unifies the dynamic forces of natural growth, just as those forms in turn are continually overcome or breached by the vitality of those forces. Eisenstein contrasts his concept to naturalism: art is not nature viewed through a temperament, but "temperament bursting through nature."[18] Nonindifferent nature operates by breaking apart conventional form, a modernist deformation of the depicted space, such that the elements within it lose their solidity and interpenetrate one another. In this ecstatic explosion of form, relations between foreground and background, proximity and distance, are overturned. The disorienting effect of these disruptions is to implicate the viewer in the "universal feeling" produced by the image. The ex-static form of nature's nonindifference produces a corresponding "ecstasy" in the spectator, and facilitates the mutual attunement of each to the other.

14 Sergei Eisenstein, "The Dynamic Square," in *S. M. Eisenstein: Selected Works*, vol. 1: *Writings, 1922–34*, ed. and trans. Richard Taylor (Bloomington: Indiana University Press, 1988), 206–218, 209.

15 Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993), 13–15.

16 Eisenstein, *Nonindifferent Nature*, 359.

17 Eisenstein, 358.

18 Eisenstein, 360.

To be sure, Eisenstein's concept is in part a neo-Romantic sentiment of "affective solidarity with the landscape," as Schuster characterizes the assumptions of that nineteenth-century movement.[19] Nonetheless, Eisenstein drew on contemporaneous ideas about nature that recognize its historical dimension and provide some of the foundations for the environmental sciences that would generate the concept of the Anthropocene. Frederick Engels's *The Dialectics of Nature*, which appeared in Russian translation in 1925, is one source of influence.[20] In that unfinished work, Engels extended the principles of dialectical materialism beyond the scope of human history by applying them to the physical laws of nature, rejecting an understanding of nature as static and immutable. Importantly, for Engels the organism is an agent in its own evolutionary development, as much adapting its environment to its own comparative advantage as being shaped by that environment. Also appearing at this time, in 1926, Russian geochemist Vladimir Vernadsky's *The Biosphere* provided one of the first scientific accounts of Earth as a self-contained sphere for the regulation of the presence of life. Anticipating the Gaia hypothesis of James Lovelock and Lynn Margulis, Vernadsky claimed that the envelope of living matter, the biosphere, is the essential agent in the conversion of solar energy into active chemical processes on earth.[21] The biosphere is a dynamic system, a "harmonious integration of parts," in which organic life acts as a geological force integral to the maintenance of the system, rather than "*an external or accidental phenomenon of the Earth's crust*."[22]

The Anthropocene retains this image of Earth as an ecosystem of interlocking elements, including the active contribution of living matter, but its version is not a harmonious one. From the perspective of the Anthropocene, wherever one looks in "nature"—a term that, in its separation from culture, is increasingly an obstacle to theorizing—one finds the disturbances and perturbations of humanity's actions. Earth, in other words, registers our touch and responds to our interventions. It is, as Eisenstein says, "nonindifferent" to our actions. For Latour, this is what makes the Anthropocene a challenge to the modern constitution's nature-culture divide, as it mobilizes and activates an Earth previously conceived of as "deanimated," as inert matter lacking the agency ascribed to human subjects. This deanimated Earth, Latour notes, has movement but not behavior: it moves but is not moved, exhibiting sensitivity. The Earth of the Anthropocene is different, he argues. No longer the stable, unchanging background to human action, or a self-regulating sphere capable of simply absorbing the shocks to its system, this animated Earth is instead "an active, local, limited, sensitive, fragile, trembling, and easily irritated envelope."[23] My interest in Eisenstein's concept of nonindifferent nature—as a mode of artistic creation that renders active what was otherwise mere background, that enlivens natural forms without

19 Schuster, *Ecology of Modernism*, 11.

20 Frederick Engels, *The Dialectics of Nature* (New York: International Publishers, 1940).

21 James Lovelock and Lynn Margulis, "Atmospheric Homeostasis by and for the Biosphere: The Gaia Hypothesis," *Tellus* 26, nos. 1–2 (1974): 2–10.

22 Vladimir Vernadsky, *The Biosphere* (New York: Copernicus, 1998), 39, 58. Emphasis in original.

23 Latour, *Facing Gaia*, 60.

necessarily anthropomorphizing them—is as a mode of visualizing the responsiveness of the Earth to our impacts.

Art has a significant role to play in the Anthropocene. What modernist film aesthetics might offer to the Anthropocene is an antihumanist means of imagining environments and of registering our effects on them. For Eisenstein, the reconciliation of humanity and nature through the construction of pathos presents idealized images free of contradiction, but even as they appear as harmonious, their utility, he argues, is that "they incandesce the striving inherent in the people to create a similar harmony in the actual reality of their social existence and environment."[24] But Eisenstein is ultimately an ambivalent figure for the Anthropocene, as for him, like other modernists, nature requires the creative productivity of the human subject to activate its elements and to unleash its capacities. Eisenstein retains the triumphalism of humanity's technological mastery over nature. If the hubris of modernity was that it tried to liberate itself from natural limits, then what we are called to do in the Anthropocene is to make ourselves aware of when those limits push back or retroact. Latour calls this developing "sensitivity"—feeling the feedbacks of one's own actions. Donna Haraway suggests "cultivating response-ability," which entails avoiding an "unprecedented looking away" or "ordinary thoughtlessness" by concerning oneself with the messy entanglements of our troubled present.[25] For Eisenstein, art is a "seismograph," a remote sensing of the earth, an attunement between humanity and its environment, and can thereby register the geological or climatological forces that might otherwise exceed our narrow perceptual and sensory grasp.[26] ✻

24 Eisenstein, *Nonindifferent Nature,* 369.

25 Donna J. Haraway, *Staying with the Trouble: Making Kin in the Chthulucene* (Durham, NC: Duke University Press, 2016), 35–36.

26 Eisenstein, *Nonindifferent Nature*, 289.

Ecodiegesis: The Scenography of Nature on Screen

by Jennifer Peterson

The Anthropocene is a concept that reveals monsters. Among its many horrors is the catastrophic realization that climate change is an *unintended consequence* of industrialization. Another horror is its *unpredictable time frame*, with traumatic backstories and impending deadlines lurching in and out of view. Then there is the dread of *uneven suffering*: the terrible knowledge that, while everyone will be affected, those harmed first and worst are not the humans who are most responsible for creating this condition. These are monsters of such

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vast proportions we can hardly comprehend them, and we would not be off base in observing that some of their qualities are cinematic. Indeed, although the Anthropocene is more than a spectacle, as a discourse it bears structural and affective resemblance to both horror and melodrama. As I argue here, we can even find traces of the Anthropocene in the Hollywood musical. The Anthropocene is a kind of narrative structure: from its perspective, we understand that human stories are not autonomous but bound up with the history of earth and the environment. From this perspective, anthropocentrism is knocked on its side, and setting (or habitat) becomes newly prominent.

It is the contention of this short essay that film history can help us unpack the idea of nature as it developed in the Anthropocene epoch. How has cinema produced "nature"? Not just in stories about nature but in its most basic characteristic of rendering the world, cinema constructs a sense of the environment. Films set outdoors, particularly those staged in wilderness, frontier, or rural settings, have defined a range of possibility for imagining the natural environment. Each film's diegetic world can be thought of as a dramatic ecosystem, and film can be considered a machine for envisioning a series of ecosystems. It is well known by now that nature does not stand outside of history. What we understand as nature—a densely signifying word that conventionally refers to the nonhuman realm of plants, animals, mountains, oceans, stars, space—has been displaced from its once-secure definition as pure material (subject to analysis by science) and has come to be understood as a category that is both material and a product of culture, or what Bruno Latour calls "nature-culture" and Donna Haraway refers to as "natureculture."[1] It has become a task of the environmental humanities to destabilize this combine.

In tracing the history of nature visualized on film, we can observe how conventional ideas about nature changed across the twentieth century. Although a clear break is not discernible, one measurable change is the shift between nature rendered as eternal to nature rendered as something endangered. Science historians Fernando Vidal and Nélia Dias call this the "endangerment sensibility," which is a "particularly acute" way of understanding the world through an attitude attuned to preservation, loss, and disappearance.[2] The endangerment sensibility can be traced through the history of film style, specifically by focusing on the history of mise-en-scène. Following the lead of climate scientists, we can begin to measure how the visualization of nonhuman nature shifted from eternal to endangered during the Great Acceleration after World War II.[3]

The Scenography of Nature. Generally speaking, we can identify two broad tendencies in the representation of nature in film history: the analogical and the artificial. These tendencies correspond roughly to films shot on location versus films shot on a (sound)stage, although the relationship between realistic nature and artificial nature is

1 Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, MA: Harvard University Press, 1993), 7; Donna Haraway, *Companion Species Manifesto: Dogs, People, and Significant Otherness* (Chicago: Prickly Paradigm Press, 2003).

2 Fernando Vidal and Nélia Dias, "Introduction: The Endangerment Sensibility," in *Endangerment, Biodiversity, and Culture*, ed. Fernando Vidal and Nélia Dias (New York: Routledge, 2016), 2.

3 J. R. McNeill and Peter Engelke, *The Great Acceleration: An Environmental History of the Anthropocene since 1945* (Cambridge, MA: Harvard University Press, 2016).

dialectical rather than a static opposition. While films shot on location remain committed to mimetic realism—similar to what Timothy Morton has described as a process of "ecomimesis" in literature about the environment—there are equally strong traditions of constructing artificial nature on the studio set, producing what I call "ecodiegesis," or theatricalized nature.[4]

Shooting on location is a fundamental cinematic strategy for creating the sense of a concrete, objective world of landscapes, bodies of water, vegetation, and so forth (as well as cities, streets, and the built environment), and the history of this practice can be traced to the emergence of cinema in the 1890s.[5] Alongside location shooting, though, there is a parallel history of artificial renderings of nature on studio sets, which we might call the tradition of staged nature.[6] Cinematic renderings of artificial nature are indebted to the historical practice of representing woodlands, rivers, and mountains on theatrical stages, and the entire tradition leans heavily on artistic and technological tools.[7] Although critics and audiences alike have long praised the analogical or realist tradition for its fidelity to nature, the tradition of artificial nature has been much maligned. The time has come to historicize both cinematic traditions. By analyzing the scenography of nature—or ecodiegesis—I am not interested in the ways in which a film's setting becomes like a character; in fact, I mean quite the opposite. Ecodiegesis is not nature in an anthropomorphized form; rather, it is the rendering of an environment or habitat, usually as a backdrop for a human drama (but not always—sometimes the characters are animals). The stage of nature is the place where the nonhuman material that constitutes the environment is envisioned as a cinematic ecosystem.

Often in the classical Hollywood era, these two tendencies were used together in the same film. Take, for example, the moment in *Duel in the Sun* (King Vidor, 1947) when Jesse McCanles (Joseph Cotton) drives Pearl Chavez (Jennifer Jones) up to his family ranch, and the film shifts between long shots filmed in Arizona and close-ups filmed in the studio. The spatial disjunction is highly noticeable, which contributes to the film's heightened melodrama. Laura Mulvey has described the technique of rear projection as cinema's "clumsy sublime." Mulvey writes that "the image of a cinematic sublime depends on a mechanism that is fascinating because of, not in spite of, its clumsy visibility."[8] The "clumsiness" of these effects—a result of available technology, stylistic convention, and budgetary constraints—calls attention to the rendering of nature through artificial means. More important, the artificial nature tradition (whose

4 Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard University Press, 2007), 31–36. Tobias Boes and Kate Marshall have also used the term "ecodiegesis" in their essay "Writing the Anthropocene: An Introduction," *Minnesota Review* 83 (2014): 64.

5 See Jennifer Peterson, "The Silent Screen, 1895–1927," in *Hollywood on Location: An Industry History*, ed. Joshua Gleich and Lawrence Webb (New Brunswick, NJ: Rutgers University Press, 2019).

6 For an ecologically attuned history of early film studios, see Brian R. Jacobson, *Studios before the System: Architecture, Technology, and the Emergence of Cinematic Space* (New York: Columbia University Press, 2015).

7 John Earl, "Landscape in the Theatre: Historical Perspectives," *Landscape Research* 16, no. 1 (1991): 21–29. Cinematic conventions of artificial nature can also be traced to nineteenth-century landscape painting, panoramas, and dioramas.

8 Laura Mulvey, "A Clumsy Sublime," *Film Quarterly* 60, no. 3 (Spring 2007): 3.

techniques include more than rear projection) was not always clumsy but could also produce self-conscious effects.

André Bazin famously describes cinema's essence as "a dramaturgy of nature" in his 1951 essay "Theater and Cinema—Part Two."[9] Although Bazin expresses his disapproval of what he calls "filmed theater," proclaiming *The Cabinet of Dr. Caligari* (Robert Wiene, 1920) and *Die Nibelungen* (Fritz Lang, 1925) failures, his complex understanding of the "scenic essence" of drama (whether theatrical or cinematic) is less about the relative naturalism of a decor and more about the handling of setting and its effect on the spectator. Bazin praises Grand Guignol plays, for example, for producing in the spectator "self-awareness at the height of illusion, creat[ing] a kind of private footlights."[10] While an exploration of Bazin's ideas about nature and cinema lies beyond the scope of this brief essay, his notion of the "dramaturgy of nature" can help us understand that a historicization of cinematic nature in the context of anthropogenic climate change need not focus on the human drama, but should look for places where the human drama is subordinated to the setting. I amend Bazin's formulation slightly by using the term "scenography" (which can be defined as "the totality of visual creation in the stage space"), which is closely related to, but distinct from, the theatrical concept of dramaturgy (which refers more broadly to the dramatic shape



Figure 1. Set reference still, *Brigadoon* (Metro-Goldwyn-Mayer, 1954). From the collections of the Margaret Herrick Library, Academy of Motion Picture Arts and Sciences.

9 André Bazin, "Theater and Cinema—Part Two," in *What Is Cinema?*, trans. Hugh Gray (Berkeley: University of California Press, 1967), 1:110.

10 Bazin, "Theater and Cinema—Part Two," 113.

of a performed story).[11] There are many places in which to trace the Anthropocene's markers in film (including not only in location shooting but also in nature documentaries), but my discussion here offers a brief consideration of the foregrounded artificiality of cinema's theatricalized nature.

Brigadoon, an Anthropocene Musical. One of the last and most fabulous of Hollywood's staged nature sets can be found in Vincente Minnelli's 1954 MGM musical *Brigadoon*. What could be more unnatural than the Scottish Highlands re-created entirely on MGM's vast soundstages in Culver City? And yet what could be a more strangely evocative exploration of the postwar predicament of human dwelling on the planet than *Brigadoon*? It is through its scenography that this Freed Unit musical presents a vision of postwar artificial nature at its height, as shown in Figure 1. *Brigadoon* constructs an entirely artificial natural world that resides outside of historical time, a place to which we might like to escape, but a place always endangered by the threat of sudden annihilation.

Brigadoon begins with a magnificent two-minute sequence of tracking and crane shots that luxuriates in the film's set. Mise-en-scène is foregrounded through the use of numerous theatrical devices: mists blow gently through the set, birds fly across it, water trickles under the bridge, and stage lights glide across it to indicate dawn. The two human characters who appear briefly here are ancillary to the setting. Not until we have been thoroughly acquainted with the film's diorama-like landscape does the narrative begin.

The film's plot concerns two jaded executives from 1954 New York (Tommy, played by Gene Kelly, and Jeff, played by Van Douglas) who get lost in the wilderness while on a hunting trip in Scotland. Stumbling through the mist, they come upon a remote village called Brigadoon, which magically appears for a single day once every one hundred years. Twentieth-century Tommy falls in love with eighteenth-century Fiona (Cyd Charisse) as they gather heather on the hill. Tommy learns the town's secret: a spell was cast so that Brigadoon would remain uncorrupted by the outside world, leaving the village stuck in the (pre-Anthropocene) year 1754—only two days have passed since the "miracle" happened. The catch is that nobody can leave: if any villager crosses beyond its boundaries, Brigadoon will vanish forever. Tommy can stay with Fiona, but he will have to leave his world and shift to Brigadoon's time. Despite several romantic dance numbers and a profession of love, Tommy reluctantly leaves Fiona and returns to Manhattan. Urban modernity offers no escape, however, as Tommy and Jeff drink their alienation into oblivion in a crowded bar. Tommy flies back to Brigadoon, where the lovers are reunited, destined to wake for one day every hundred years, forevermore. Tommy's decision is presented as a return to premodern nature (and sexual consummation) that resembles a kind of death. Nature here becomes the site of refuge, a place where we might like to rest, if only we could find it. *Brigadoon*'s woodland artificiality is not a mark of its ridiculousness but a mark of its impossible

11 Pamela Howard, foreword to *Theatre and Performance Design: A Reader in Scenography*, ed. Jane Collins and Andrew Nisbet (London: Routledge, 2010), xxiii. Bazin's writing anticipates contemporary debates about scenography, a term that has gained critical attention in recent decades.

perfection—the longing for which, one reviewer wrote, was "a decision not hard to make considering the state of the outer world."[12]

The threat of Brigadoon's evaporation hangs over the plot. Merely crossing the bridge can trigger a kind of nuclear reaction that will vaporize the place. When a disaffected young man named Harry Beaton (Hugh Liang) proclaims "I'm leaving Brigadoon! 'Tis the end of all of us! The miracle is over!" the villagers' fear of annihilation motivates a chase number that concludes with Harry's death but saves the village. When Tommy cries out "Oh, Fiona! When I think what could have happened! Your whole world . . . gone forever!" he might as well be describing the threat of nuclear apocalypse—or from a retrospective perspective, climate change's civilizational threat. Raymond Bellour has written about an element he calls "panic" that can be found across Minnelli's body of work. Bellour argues that in *Brigadoon*, two special forms of panic are defined: "the territorial limit that can't be crossed" and the "made in America horror" of modern-day New York.[13] A further panic articulated by the film, I would add, is the fear of nuclear war. Made in the era of nuclear testing and classroom duck-and-cover exercises, *Brigadoon*'s ghostly existence seems to hover around the edges of nuclear annihilation.

Brigadoon was originally envisioned as a location shoot. Gene Kelly later remembered: "This was our hope: that we would do *Brigadoon* as an outdoors picture the way John Ford would do a picture as a Western. We would do it as a Minnelli and Kelly musical, but do it outdoors."[14] When Kelly and producer Arthur Freed returned from a scouting trip in Scotland discouraged by the gloomy weather, they were assured that they could shoot on a substitute location in the mountains above Carmel on the central California coast.[15] But ultimately, MGM production head Dore Schary decided the film would be shot entirely on the studio's soundstages. This was done to maintain complete technical control over the production and to save money, but it also allowed Minnelli—a former department-store window dresser and theatrical set designer—to carry his highly theatrical style to its extreme realization, along with his team of studio collaborators, including art directors Cedric Gibbons and Preston Ames and cinematographer Joseph Ruttenberg.[16] One of the most important components of the *Brigadoon* set was a giant scenic backing that curved around the stage like a nineteenth-century panorama, created by scenic painter George Gibson.[17] Through the use of forced perspective and other trompe l'oeil techniques, scenic

12 "Highland Flingding: Bonnie Brigadoon Has Moors Indoors," *Life*, August 9, 1954, 95.

13 Raymond Bellour, "Panic," in *Vincente Minnelli: The Art of Entertainment*, ed. Joe McElhaney (Detroit: Wayne State University Press, 2009), 412.

14 Ronald L. Davis, *Oral History with Gene Kelly* (unpublished manuscript, Margaret Herrick Library, 1974), 49, qtd. in Murray Pomerance, *The Eyes Have It: Cinema and the Reality Effect* (New Brunswick, NJ: Rutgers University Press, 2013), 196.

15 Davis, *Oral History*, 49, qtd. in Pomerance, *The Eyes Have It*, 197.

16 Ansco Color film stock was also used, instead of Technicolor, as a cost-saving measure.

17 See Pomerance's account of George Gibson and *Brigadoon*'s scenic backing in *The Eyes Have It*, 209–218.

backings provide a convincing illusion that the diegetic landscape continues as far as the eye can see.[18]

Numerous critics and spectators then and since have been displeased by the film's artificiality. *Time* magazine complained that "every plastic daisy on the village green [was] set in by hand, the sheep marcelled like chorus girls."[19] The film earned a less-than-impressive $2.25 million, compared with the $4.75 million earned by *Seven Brides for Seven Brothers* the same year.[20] *Brigadoon* was out of step with its time in shooting entirely on soundstages, and the artificiality of its sets has often been blamed for its underperformance at the box office.[21] While film musicals certainly have a robust tradition of theatricality, during the post–World War II era location shooting became an increasingly important production strategy, even in musicals such as *The Harvey Girls* (George Sidney, 1946), *On the Town* (Gene Kelly and Stanley Donen, 1949), and *Oklahoma* (Fred Zinnemann, 1955). By this time most Hollywood musicals utilized a combination of location work, soundstage work, and process shots.

And yet there is arguably more at stake in *Brigadoon*'s artificial illusionism than a failed attempt to reproduce nature. While the decision to shoot on MGM soundstages 15 and 27 may have been instrumental, it had powerful aesthetic effects. *Brigadoon* tells us that that postwar nature is a kind of fantasy space, anchored in real geography but distorted and idealized; that nature is precious but endangered and could disappear at any time; and that film is a medium that fabricates and freezes nature in its ideal form, like a terrarium or a snow globe. This Cold War rendering of artificial nature can be seen as an ambivalent celebration of film's ability to fabricate nature. *Brigadoon*'s controlled outdoor world feels like a memorial: cocooning, denatured, sweetly melancholy, just the kind of habitat one might crave in the wake of the nuclear trauma casting its shadow over the Anthropocene. ✻

18 Scenic backings were so large that they were often painted simultaneously by multiple artists; additional scenic painters who worked on *Brigadoon* included Wayne Hill, Clark Provins, and Duncan Spencer. See Richard M. Isackes and Karen L. Maness, *The Art of the Hollywood Backdrop* (New York: Regan Arts, 2016), 6.

19 "Cinema: The New Pictures," *Time*, October 4, 1954, 103.

20 "1954 Boxoffice Champs," *Variety*, January 5, 1955, 50.

21 See also Colin McArthur, *"Brigadoon," "Braveheart," and the Scots: Distortions of Scotland in Hollywood Cinema* (London: I. B. Tauris, 2003).

Sinkholes

by Karl Schoonover

A problem of scale plagues popular texts that try to visualize the environmental impact of humans. The harbingers of Earth's imminent ecological apocalypse occupy spaces and temporalities immeasurable within the idioms of conventional screen media. For example, the vast reach and submicroscopic effects of the dioxins resulting from trash incineration aren't easily rendered by the moving image.[1] Environmental catastrophe doesn't fall into discrete parameters and thus challenges visual media with various phenomena that can't be narrativized in linear time-space trajectories. The limitless and the abyss collide in the spaces of the Anthropocene. In this context, a response to the problem of scale has opened up in the spectacle of the sinkhole. A contemporary "anthroposcenery" seems to both produce sinkholes and fixate on them as images. Sinkholes pop up (or down) everywhere and anywhere, in dense urbanity and in tranquil suburbs.

The sinkhole possesses the qualities that ecotheorist Timothy Morton assigns to "hyperobjects": viscosity, nonlocality, temporal undulation, phasing, and interobjectivity.[2] Thinking of sinkholes as hyperobjects also exposes Morton's critical resistance to the sublime as a useful means of describing phenomena that, due to their scale or duration, overwhelm human perceptual capacities. The bracketing of the sublime has a political edge for Morton. Ecological catastrophe guides his inquiry, as does his commitment to disallowing depictions of disaster to play into what he calls "end of world discourse," which he feels does more to promote a nihilistic apocalypticism than it does to forward a meaningful awareness of the Anthropocene. Sinkhole footage may be helpful to this project for how it participates in Morton's aim "to establish what phenomenological 'experience' is in absence of anything meaningful like a 'world' at all."[3]

When sinkholes arrive to us on screens, they carry characteristic traits. A small chunk of time is often replayed on a loop in the context of an otherwise linear temporality, depicting the sinkhole swallowing and swallowing again, the image framing and holding in place an

1 Karl Schoonover, "Documentaries without Documents: Ecocinema and Toxins," *NECSUS: European Journal of Media Studies*, no. 4 (Autumn 2013): 483–507.

2 Timothy Morton, *Hyperobjects: Philosophy and Ecology after the End of the World* (Minneapolis: University of Minnesota Press, 2013). In descriptive passages (115, 192), he mentions sinkholes twice in the book but does not treat them as hyperobjects head-on.

3 Morton, 3.

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endless visual abyss, a dark hole that admits no measure of duration or depth. This looping has meant that the GIF supplies one of the most prominent sites for marveling at sinkholes—that is, it is sinkhole footage's ideal venue. The GIF has brought the aesthetic regime of the sinkhole to prominence in our contemporary mediascape, in which sinkholes are popular on GIF aggregating sites, such as GIPHY and Tumblr. I argue here that the GIF's affinity for the sinkhole tells us something about what it means to represent this phenomenon. As I press on the historical specificity of this concordance, I track the structural affinities shared among GIFs on the one hand and ecological disaster as depicted in mid-twentieth-century films on the other hand. I ask why the GIF is today one of the preferred means of pursuing a sinkhole, even as GIF-ness can be found foreshadowed in the sinkhole's predigital depictions.

When the earth suddenly gives way under our streets and homes and in front of our cameras, the sinkhole opens a challenge to conventional ecological discourses and the capacity of those discourses to manage the scale of humanity's environmental footprint. How the sinkhole elicits limitlessness is key to understanding the infectious nature of its visual spectacle: the parameters of time and space as we know it dissolve before our eyes in the sinkhole's sudden ingestion of pedestrians and automobiles, in the undertow of its void. As such, the sinkhole—and its vanishing vanishing points—demands that ecopolitics rethink how to represent endgames.

Sinkholes appear on standard factual television: the National Geographic channel, PBS's *Nova* (1974–present), and the BBC have all produced one-hour documentaries on the subject. In popular moving-image cultures, the sinkhole appears as a portal not only to the unknown but also to unknowability, exposing instabilities of both physical and epistemological infrastructures. The factual television programs that explore the nature of the sinkhole purport to explain the phenomenon but resist deflating its mystery and horror. Sinkholes strike without warning or reason, these programs tell us. Their root causes remain unclear. The programs seem invested in the idea that sinkholes ultimately frustrate any assignation of blame or culpability (even if fracking, industrial agriculture, and quick-build projects offer otherwise logical explanations for their increasing prevalence). The voice-over commentary that accompanies the footage of sinkholes aims to maintain this unknowability to such an extent that this commentary should be classified as phantasmagoric. The episode of the BBC2 documentary series *Horizon* (1964–present) titled "Swallowed by a Sinkhole" continually refers to the sinkhole as a passage to the indefinite and infinite and as an event that captures our "fear of dropping into the underworld." These programs carry the quality of secondary texts, admitting they are simply building off images we already know well. They replay the same amateur and surveillance footage in a pattern that parallels the endless looping of the GIF.

Anna McCarthy has called the "endlessness" of the GIF a "fugitive temporality," suggesting that it is the repository for a meditative wasting of time, an exercise of self-soothing, or a mode for exploring visual pleasure.[4] If the GIF streams data neither to nor from the user, but rather provides small nuggets of animation in an infinite

4 Anna McCarthy, "Visual Pleasure and GIFs," in *Compact Cinematics: The Moving Image in the Age of Bit-Sized Media*, ed. Pepita Hesselberth and Maria Poulaki (London: Bloomsbury, 2017), 114.

looping, could we say, then, that a GIF is a sinkhole? After all the GIF is a *sync* hole, a hoard or cache of artificial synchronies. At the same time, it is also a sync *hole*, as in a pit that absorbs the meaningful passage of time or space, existing outside of useful labor and banishing the engines of conventional narrative: happenstance, coincidence, and chance meeting. The GIF's looping is where the telos of momentous time goes to die. The GIF could be thought of as "a swallow hole," where linearity, causation, and other features of narrative space are gobbled down and then regurgitated in a manner that frustrates telos.

In what follows, I look at various visualizations of sinkholes as potential images of ecocatastrophe that don't contribute to an "end of world discourse." The many contemporary films depicting sinkholes are less interesting to my discussion, because contemporary cinema has become able to depict geological distress without incurring much visual disruption. Even when announced narratively as sinkholes, the cavities of twenty-first-century movies don't swallow up the narrative's coordination of spatiotemporal relations as such holes do in earlier films. Recent cinematic sinkholes provoke none of the "deep shudders of temporality" that Morton associates with the "world"-banishing qualities of the hyperobject.[5] Vis-à-vis the agile representational capacities of digital effects, the sinkhole loses its disruptive nature and welcomes an "end of the world discourse." Thanks to CGI, a film like *2012* (Roland Emmerich, 2009) can create a long take of a crack opening up, as Jackson Curtis (John Cusack) drives his family down a road, narrowly escaping a series of earthquakes and sinkholes. Crosscutting between the panic inside the car and shots of the car dodging the hazards of a world coming apart, the film never loses direction. A traditional narrative look (and its anthropocentric tendencies) remains stabilized, oriented toward linearity and directionality (the progress of mankind). In other words, the sinkholes of this century's cinema proceed differently from the sinkholes of mid-twentieth-century films, or for that matter, from the regurgitations of the GIF.

Looking for sinkholes in films from earlier periods would encompass a wide inventory, including films with explicitly referenced sinkholes and also ravenously hungry tremors, ground cracks, and earthquakes.[6] Tectonic disturbances often disorganize the conventional narration of the gaze in the disaster of midcentury films, proposing a hiatus in linear time and space. From a preliminary investigation into the aesthetic turbulence caused by the moving image of the ground "giving way" emerges a nascent order of destabilized time-space relations, one that later finds perfect formal affinity in the medium of the GIF. Put simply, when depicting geological disaster many older feature films express the same structural ambivalences toward the certainty of progressive time and space as GIFs, disorganizing vision in at least three ways: repetition, double framing, and fractured linearity.

5 Morton, *Hyperobjects,* 16.

6 In this essay, I bracket two adjacent phenomena—quicksand and the black hole—since both have independent valences. As a trope, quicksand has a historical particularity, in its formal capacity to reverse teleology of 1930s colonialism within the mise-en-scène. In this sense, it is more about revenge than it is about the infinite. The black hole has a specificity in 1970s and early 1980s sci-fi films, functioning as an escapist wormhole from the period's bankrupt geopolitics and poisoned ecology.

First, a consonance can be found in how both use spectacle to disorganize the look. *Crack in the World* (Andrew Marton, 1965) follows a mad scientist who sends a nuclear warhead under the earth's surface to mine the magma for a renewable source of energy to replace conventional fuels. Despite the endorsement of world leaders, this mining project leads to mayhem and near apocalypse. The sequences showing the actual crack disorders the narration of our gaze. We don't know exactly where to look, except everywhere at once. The montage-like qualities of covering the event abstract spatial coordination, frustrating any mental mapping of the diegetic space. The viewer cannot anticipate the sequencing of movement across shots, placing our look momentarily outside of causal time and space. Thus, the sinkhole operates as Laura Mulvey defines the aesthetic parameters of spectacle, as that which is outside narrative.[7] As in Mulvey's definition, spectacle here slows down narrative time and the naturalistic pacing of the image in relation to the event, and the image loses the narrative spatiality of consequential direction and meaningful depth. Helen Wheatley argues that the slowing of time and movement in front of the spectacular landscape should be understood as a formalized "hesitation." This hesitation becomes so staccatoed in *Crack in the World* that it feels like a mode of seriality or repetition, much like that of the GIF's apprehension of the sinkhole.[8]

Toward the start of the Japanese Godzilla spin-off *Chikyû Bôeigun* (*The Mysterians*; Ishirô Honda, 1957), land slips into an ever-increasing crack in the middle of a countryside scene. A series of edits from different angles and a repetitive soundtrack of crashing noises depict the frenzy of catastrophe but also unleash an indeterminacy about how and where we are traversing time and space. This turmoil intimates a looping structure rather than a linear account of eventful time in which the instantaneous is inimitable and consequential. In striving to cover the sinkhole as an event, *Chikyû Bôeigun* performs a stuttering of time-space relations. Each new shot not only offers a new perspective on what is happening but also introduces a new arc of the event, as if this sequence were a collection of separate events. Disaster begins afresh in each shot. This repetition of the event's time runs counter to conventional narrative's linear temporality. The pacing of each shot doesn't accord with those shots that come before or after it. This mishmash of perspectives on space and time can also be found in the landslide sequence of *It Came from Outer Space* (Jack Arnold, 1953), which combines slow motion and various points of view in its depiction of the ground splitting apart. When menacing cracks (later sinkholes) open the ground on London streets in *Quatermass and the Pit* (Roy Ward Baker, 1967), a similarly compulsive, multiple-viewed coverage of a single event occurs. *Chikyû Bôeigun* and *Crack in the World* enfold two modes of reiteration in their disaster sequences. First, and simply, the sinkhole triggers in conventional film form a repetition that anticipates the GIF's looping structure. Second, the looping of an event's forward movement in time feels not unlike the GIF's "fugitive temporality" which McCarthy attributes to its "endless small acts of reproduction."[9]

7 Laura Mulvey, "Visual Pleasure and Narrative Cinema," *Screen* 16, no. 3 (October 1975): 11–12.

8 Helen Wheatley, "Beautiful Images in Spectacular Clarity: Spectacular Television, Landscape Programming and the Question of (Tele)visual Pleasure," *Screen* 52, no. 2 (July 2011): 243–244.

9 McCarthy, "Visual Pleasure and GIFs," 114, 113.

Another mode of doubling brings endlessness to the fore: the frame within a frame to signal bottomlessness. The Jules Verne adaptation *Journey to the Center of the Earth* (Henry Levin, 1959) uses frame within a frame to portray voids in the earth. Before reaching these voids, the film describes the declared aim of the voyage's participants as "total penetration," to reach "the world below, whatever it may be." In the first glance at the spectacle promised by the film's title, and elsewhere later on, the film introduces a deep hole with an emblematic shot. The voids of these holes appear framed within a frame. A tension forms between the ragged, random, dropped-off, quasi-circular contours of the abyss of nothingness and the sharp geometry of the rectangular frame of the image. (This same composition proliferates in contemporary sinkhole footage.)

Such double framing accompanies the sense that this hole is an infinite and unmappable void. Its limitlessness confounds perception, its blackness swallowing up everything, while exhausting human resourcefulness. "There's not enough rope in the world to get down there," declares one character peering over the hole's perimeter. The black, emptied-out center of these two frames suggests a refusal of the representational imperatives of the image, a suspension of its otherwise figurative priorities. The void also dispenses with depth cues and seems to swallow narrative time, if we accept that narrative time requires marked spatial progression in cinema. Things are dropped down the hole, but they disappear quickly, rarely to reappear. They leave functionality (diegetic and otherwise), never to return. GIFs seem to inherit this double framing as a means of using the void to exploit both the spectacular and the antispectacular. Our attention to framing brings us to one more feature of the sinkhole: its capacity to swallow. This appears to play with the frame-within-a-frame structure, ravenously pulling the image inside out.[10]

The failure of cinema to provide the temporal or spatial plenitude associated with "the event" is not uniquely exposed by sinkholes, but cinema has always tried to compensate for or cover over its inadequacies in relationship to time and space (continuity editing being only one such system). Sinkholes reveal and flaunt these failures as constraints to be taunted. In each of these instances of disorganized vision—including repetition, double framing, and fractured linearity—the sinkhole exposes the sham of spatiotemporal coherence.

The GIF and the non–digitally produced sinkhole share a tricky historicity. This historicity comes into view when we encounter sinkholes in twentieth-first-century cinema, such as those in *2012*, *Geo-Disaster* (Thunder Levin, 2017), and *Sisters* (Jason Moore, 2015), which lack the formal disruptions elaborated in the disaster sequences of eco-apocalyptic sci-fi of the midcentury and that continue to reside in the GIF. My point has not been simply to explain this odd historicity shared among some media and not others over the past sixty years. Instead, it has been to attend to what these images make clear when we stop seeing them as representational failures—to listen for what Morton calls a "being-quake" of which they may be symptoms.[11]

10 Here I briefly note a visual affinity between one of the most popular GIFs of sinkholes, the sudden devouring of a stand of trees in Louisiana's Bayou Corne (https://giphy.com/gifs/xKhCnEOPmErCw), and the bizarre ending of the inexplicably odd noir film, *The Red House* (Delmer Daves, 1947).

11 "The discovery of hyperobjects and OOO (object oriented ontology) are symptoms of a fundamental shaking of being, a *being-quake*. The ground of being is shaken." Morton, *Hyperobjects*, 19.

The GIF is itself a throwback to an earlier generation of digital imagery, namely Web 1.0 animation. And in this context, we might call it a "loophole" or even a "wormhole" to the capacities of an earlier, apparently lesser mode of depiction. Through this perspective, we can resee the predigital-era image of catastrophe not for its incapacities (its inability to capture a long take of ecodisaster) but as a complex representational mode of negotiating with the ecological that we may have lost. What if these sinkholes unearthed something disordering about the Anthropocene that the new blockbusters can too easily forget and/or cover over? ✻

Reorientations; or, An Indigenous Feminist Reflection on the Anthropocene

by Kali Simmons

Destruction of homelands. Loss of kinship species. Exposure to deadly contaminants. Mass extinction. Transformed lifeways. In the face of these radical changes, a question lingers: How long will life be possible? Recently the academy has also felt the urgency of these environmental problems and proposed to address them within the framework of the term "the Anthropocene." Indigenous studies has offered various responses to the Anthropocene, some arguing that it has utility in framing the violence of colonialism and others critiquing the limitations and assumptions behind the "anthropos" in Anthropocene.[1] Since contact, indigenous peoples of the Americas have dealt with an escalation of the forces of environmental change. Consequently, their ability to live has been challenged. Indigenous scholarship has shown that the Anthropocene can bring attention to the violence indigenous people have suffered and continue to resist,

1 For works addressing the utility of the term, see Heather Davis and Zoe Todd, "On the Importance of a Date, or Decolonizing the Anthropocene," *ACME: An International Journal for Critical Geographies* 16, no. 4 (2017): 761–780; Simon Lewis and Mark Maslin, "Defining the Anthropocene," *Nature* 519 (2015): 171–180; and Audra Mitchell, "Decolonising the Anthropocene," *Worldly* (blog), https://worldlyir.wordpress.com/2015/03/17/decolonising-the-anthropocene/. For works critical of the term, see Jessica L. Horton, "Indigenous Artists against the Anthropocene," *Art Journal* 76, no. 2 (2017): 48–69, and Zoe Todd, "Indigenizing the Anthropocene," in *Art in the Anthropocene*, ed. Heather Davis and Étienne Turpin (London: Open Humanities Press, 2013), 241–254.

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but it can also be used to erase this history of violence. Narratives can conceal other narratives. It is the work of scholars to be attentive to this. The Anthropocene, as a term, has the potential to bolster indigenous critical projects because it can be read as an indexical mark on the planet that makes the violence of imperial projects visible. The environmental, economic, spiritual, and social challenges that indigenous people face are a rearticulation of the violence of living in a capitalist settler state.

To approach the Anthropocene from a position that does not remember the history of empire is a continuation of the system of settler colonialism that erases indigenous peoples so the settler nation can be imagined as empty and occupiable. Indigenous feminisms warn against responses to the Anthropocene that reinscribe this violent erasure, taking as their starting point the intersections of empire, industrial capitalism, and heteropatriarchy.[2] In this short essay, I explain how starting at these intersections requires a radical reorientation to three key concepts: time, contamination, and kinship. I theorize these reorientations alongside the work of Navajo artist Will Wilson, whose *Auto-Immune Response* series (2005–present) addresses indigenous survival and resilience in the Anthropocene. Wilson's work is a call to critically decenter the human in discourses of apocalyptic climate change, challenging the framework of the "anthropos." Indigenous theoretical work, embodied in artworks like Wilson's videos, asks us to refuse the settler state as a basis for relationality and justice, prompting us to imagine solutions to the Anthropocene "outside of the models of governance and community that settler nation-states are founded on."[3] Media studies scholarship must also consider these intersections as a starting point for its engagements with the Anthropocene.

Time. Indigenous cultures have different orientations toward time, and theorizations of this alternative time—although they are varied and many—require scholars to rethink the scale of climate change within a longer historical trajectory. Scholars such as Kim TallBear, Grace Dillon, and Kyle Powys White have argued that indigenous peoples are already postapocalyptic.[4] That is, indigenous peoples have already faced catastrophic violence, the loss of relationships, and the fundamental alteration of their ways of life to survive in spaces that are physically, emotionally, and spiritually toxic.

The "Orbis spike hypothesis" is a stratigraphic marker, introduced by Simon Lewis and Mark Maslin, that can be interpreted to show that the apocalypse has already happened to indigenous peoples.[5] The term refers to the drop in atmospheric carbon, apparent in geological data, that stems from the population decline of the Americas

2 See Maile Arvin, Eve Tuck, and Angie Morrill, "Decolonizing Feminism: Challenging Connections between Settler Colonialism and Heteropatriarchy," *Feminist Formations* 25, no. 1 (2013): 16. I am deeply indebted to this work not only for its interventions into feminist and indigenous studies but also for inspiring and guiding this response.

3 Arvin, Tuck, and Morrill, 16.

4 See Kim TallBear, "Future Imaginary Lecture: Kim TallBear. 'Disrupting Settlement, Sex, and Nature,'" YouTube video, posted by Obxlabs, 1:25:13, January 25, 2017. Also see Grace Dillon, "Imagining Indigenous Futurisms," in *Walking in the Clouds: An Anthology of Indigenous Science Fiction*, ed. Grace Dillon (Tucson: University of Arizona Press, 2012), 1–12; and Kyle Powys Whyte, "Our Ancestors' Dystopia Now: Indigenous Conservation and the Anthropocene," in *The Routledge Companion to the Environmental Humanities*, ed. Ursula K. Heise, Jon Christensen, and Michelle Niemann (New York: Routledge, 2017), 271–273.

5 Simon Lewis and Mark Maslin, "Defining the Anthropocene," *Nature* 519 (2015): 171–180.

from around sixty million to six million people due to colonial war, famine, disease, and enslavement—a loss of life that can hardly be described in terms other than apocalyptic. The Orbis spike is an indexical mark of colonial violence upon Earth itself, showing that a colossal loss of human life can result in significant shifts in the environment, the results of which are now visible in the geological strata.

A reorientation to time requires an expansion of the scale of time combined with an understanding about how violence is enacted over and through time. This distinct understanding of temporality is what enables indigenous scholars to read the Orbis spike as having a deep connection to the violence of empire. Doing so points to the way that European anthropocentric projects imagine their historical past and future through the erasure of indigenous histories and communities as a means to construct and guarantee settler futurity.

In a series of short videos connected to his larger multimedia project *Auto-Immune Response* (*AIR*), Will Wilson addresses the apocalyptic conditions of the indigenous present. In this project, a Diné man (played by Wilson) records himself as he hikes the four mountains marking the territory of the Diné people.[6] The short videos mix documentary and speculative fiction. They provide, according to Wilson's website, "an allegorical investigation of the extraordinarily rapid transformation of Indigenous lifeways, the disease it has caused, and strategies of *response* that enable cultural survival."[7] The setting is an uncertain postapocalyptic future, a time when the environment has become unlivable for humans. Yet his videos and photographs have a real-world reference: uranium mining on a Navajo reservation has irradiated water, animals, plants, and the people living there, creating an inhospitable environment. Wilson describes the project as "the quixotic relationship between a post-apocalyptic Diné (Navajo) man and the devastatingly beautiful, but toxic environment he inhabits."[8] The *AIR* project's alternative approach to temporality reveals the faults in a Western, teleological understanding of historical time. Wilson's *AIR* project expresses how, as Kyle Powys Whyte argues, indigenous people can conceptualize the Anthropocene as living in their ancestors' dystopia.[9]

Contamination. Blood quantum is one technology that has enabled indigenous dystopia and apocalypse. Blood quantum is a technology of the settler state that is designed to eliminate indigenous peoples through a logic of purity. This assimilationist principle confines indigenous peoples to the past with their "pure-blooded" relations, while laws requiring specific levels of quantum divide indigenous peoples along tribal lines as they attempt to secure necessary access to resources. However, from a postapocalyptic indigenous perspective, purity can never be an end goal. The drive to enshrine and restore natural spaces should not be guided by a utopic nostalgia for a nature destroyed by imperialism, as Renato Rosaldo has argued in his essay "Imperialist Nostalgia."[10] Conservationist efforts that enshrine purity reinstate violence against

6 Will Wilson, "Video," https://willwilson.photoshelter.com/video.

7 Will Wilson, "About," https://willwilson.photoshelter.com/about.

8 Wilson, "About."

9 Powys Whyte, "Our Ancestors' Dystopia Now," 271–273.

10 Renato Rosaldo, "Imperialist Nostalgia," *Representations*, no. 26 (1989): 107–122.

indigenous peoples and the land with which they are kin. Indigenous peoples know this story well: the logic of assimilation that consigns indigenous people to a vanishing past implies that there are no "real Indians" left. Instead, "real Indians" existed only in 1492, 1776, 1879, or 1934, depending on the historical narrative of settler colonialism one invests in. "Indians" were created in a way such that they would eventually become so contaminated that they would disappear, which shows how a continued investment in discourses of purity enables the erasure of indigenous people.[11]

In Wilson's work, contamination under the Anthropocene is not only physical but also spiritual and ontological. Wilson makes contamination visible not by marking the environment but by shielding his own body with protective gear. The gas mask he wears in his videos is the only sign that marks the environment as deadly and unlivable. This choice suggests that making life livable in contaminated spaces requires adaptation in recognition of changed material conditions rather than a nostalgic wish for the pure and pristine—that is, the unmarked. By constructing an alternative response to environmental catastrophe, Wilson questions how and why human life is privileged in debates about climate change.

The deadly chemicals already present in the water, soil, and air forestall any reconstruction of nature in an idealized "pure" state. The *AIR* project refuses conservationist efforts to purify nature, because as mentioned previously, the logic of purity places "authentic" indigenous peoples in an irretrievable past and thereby risks replicating what indigeneity has worked to deconstruct. As Robert Warrior argues, indigenous methodologies are no purer than any other, and to demand such from indigenous knowledges and practices overlooks their relevance: "To understand what the 'real meaning' of traditional revitalization is, then, American Indians must realize that the power of those traditions is not in their formal superiority but in their adaptability to new challenges."[12] In the postapocalypse, a key reorientation involves a turn away from purity, modeled after the deep entanglement of indigenous minds, bodies, relations, and cultures with the material conditions of this toxic world.

Kinship. The term "Anthropocene" implies a kind of kinship that I want to problematize. While the Anthropocene entails the vulnerability to extinction of humanity as a whole, the distinct vulnerabilities many beings have faced up to this point cannot be effaced. It is the case that the subject position of the human has been made available only to certain kinds of bodies at certain times. Indigenous peoples have been offered access to the position of the human only by disavowing their kinship connections. Often, this loss of kinship connection entailed a fundamental shift in how indigenous peoples conceptualized and were able to enact relations of kin, particularly with nonhuman others such as the land they inhabited. In the United States, indigenous peoples were forcibly entered into the system of private land ownership through the 1887 Dawes Act. While they were then recognized as humans—though in many cases still

11 For more on the logic of contamination, absorption, and blood quantum, see Kim TallBear, *Native American DNA: Tribal Belonging and the False Promise of Genetic Science* (Minneapolis: University of Minnesota Press, 2013).

12 Robert Warrior, *Tribal Secrets: Recovering American Indian Intellectual Traditions* (Minneapolis: University of Minnesota Press, 1994), 94.

not entirely—this legal framework reorganized their previous ties to the land around the sanctioned and exploitative principles of capitalist ownership. One might say that gaining one kin means losing another. In Canada, after the enactment of the 1876 Indian Act, indigenous peoples could gain access to human rights only by rejecting their status as Indians. Indigenous women who married settler men automatically lost their status, and in some cases, their ability to live on reserve land with their family. As before, gaining one kin means losing another. Indigenous history demonstrates that the category of the human has repeatedly functioned as a tool of settler colonial assimilation, often disguising itself as a kinship-making project.

Will Wilson's *AIR* project decenters the human in his representation of kinship in the postapocalypse. Wilson's protagonist must reshape his own body, by donning a protective mask, to survive in this toxic space, rather than reshaping the spaces and nonhuman others surrounding him. *AIR South* and *AIR North* depict green plants and trees in the background, signifying that the world is more habitable for nonhuman species than it is for humans. Rather than conforming the space to the needs of humanity by "terraforming" a toxic earth to render it habitable again, the protagonist instead adjusts in a way that is not destructive to the other surviving beings. This move to critically decenter the human reflects indigenous epistemologies of mutual accountability, a way of living in the world that refuses a hierarchy of being. In Wilson's work, living in the Anthropocene is a question of survival, but one not necessarily secured for humanity.

To reorient oneself in kinship relations means that this violence that underwrites much of human history cannot be easily forsaken or forgiven. For indigenous peoples, kinship is not simply shorthand for family or peers; it is an entire system that structures how one moves through the world. This means that other forms of life subsist outside the narrow purview of the human and that these kin and kinship systems cannot be forsaken. Recently, Kyle Powys Whyte has argued that "one can't claim to be an ally if one's agenda is to prevent his or her own future dystopias through actions that also preserve today's Indigenous dystopias."[13] "Allyship" is a specific kind of kinship that requires mutual accountability. Failing to problematize the framework of the human in the discourse of the Anthropocene, particularly the kind of singular human history the Anthropocene can be used to construct, is to conceal the ways the project of the human has been used to produce indigenous dystopias. Whyte and Wilson refuse to produce a dystopia for nonhuman kin, and similarly scholarship that reckons with the Anthropocene should refuse reproducing indigenous dystopias.

Conclusion. I posit these reorientations as a response to the question*: How much longer will life be possible?* Other questions follow: How is life imagined? What kind of life was possible to begin with? If scholars of the Anthropocene hope to answer these questions thoroughly, they must engage with indigenous knowledges and ontologies. The reorientations I offer require attentiveness to whose future is envisioned and guaranteed. Indigenous media makers, like Wilson, are already imagining responses to the Anthropocene by theorizing through indigenous methodologies and ontologies. The

13 Kyle Powys White, "White Allies, Let's Be Honest about Decolonization," *Yes Magazine*, April 3, 2018.

AIR videos refuse logics that (re)produce indigenous dystopias. The Anthropocene can reveal the violence of the settler state, but it can also normalize and erase the history of this violence. If media and film studies are an interrogation of what and how we see, then scholars must be attentive to whose lives are privileged by the narrative of the Anthropocene. ✻

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