_____VIRAL LIFE IN THE ALIENOCENE___

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It is hard to imagine a more alien life form

than the virus.[1] In a chilling epigraph to the 1995 cinematic medical thriller *Outbreak,* Joshua Lederberg—a molecular biologist—called it "the single biggest threat to man's continued dominance on the planet" (*Outbreak*). An invisible entity until unmasked by new technologies in the twentieth century, the virus quickly exploded the most fundamental categories of scientific research and lived experience: the definitions of life and death. As scientists marveled at an entity inhabiting the border between those states, science journalists reached for a metaphor popularized, perhaps, by a contemporary television show. Viruses dwelled in "the *twilight zone* between living and dying" (Laurence, italics added), a term originally coined to describe a realm between fantasy and reality. Viruses posed a profound categorical challenge, and because categories structure human experience, that means an upheaval of everything we think we know. Which might just be a definition of the Alienocene, if indeed it could be defined.

The experience of COVID-19 is a different kind of upheaval. If we were living in the Anthropocene, Capitalocene, Plantationocene or Chthulucene before much of the world shuttered, we are living in the Alienocene now, with no words sufficient to describe the tragedies unfolding on so many levels at once. As social beings, humans need *communitas*, a term the anthropologist Victor Turner used to describe a transcendent feeling of social belonging--in its most existential form, an ecstatic sense of absolute equality and togetherness, "spontaneous and self-generating" (Turner, 243). As it offers a temporary sense of escape from social structures, it ultimately reinforces them, manifesting our need for each other.

[1] Thanks to Sari Altschuler and Joseph Donahue for helpful commentary.

COVID-19 has made palpable both the need for and the danger of togetherness. Such is the fundamental paradox of being human. And not just of being human, but of being alive, especially as our habitats converge. It is a lesson illustrated catastrophically by the pandemic resulting from humans' encounter with the novel virus SARS-CoV-2.

In his 1994 nonfiction best-seller, *The Hot Zone* (originally a 1992 *New Yorker* article), Richard Preston recounts the experience of Tom Geisbert, an intern at the United States Army Medical Research Institute of infectious Disease (USAMRIID), when, peering through an electron microscope at the cells of a simian victim of a deadly hemorrhagic outbreak in a primate facility in Reston, Virginia, he recognizes a novel filovirus. Geisbert's breath stops as he looks at the cell that isn't "just dead," but "destroyed…blown apart….crawling with worms." He "almost panic[s], almost [runs] out of the room shouting"; he remembers how he had sniffed the virus-filled flask, wonders if he had "snap[ped] the cap," which would have "spray[ed] stuff around," wonders how deep he had breathed when he "sniffed that flask," wonders if he had touched his face or rubbed his eye. But he doesn't panic; instead, he returns to wonder at the image he had captured of the "virus particles shaped like snakes….white cobras tangled among themselves, like the hair of Medusa….the face of Nature herself, the obscene goddess revealed naked." And, mesmerized by the "breathtaking[] beauty" of "the life form thing," he finds "himself pulled out of the human world into a world where moral boundaries blur and finally dissolve completely….lost in wonder and admiration, even though he [knows] he [is] the prey. Too bad he couldn't bring it down with a clean shot from a rifle" (Preston 197).

Is it Geisbert--an avid hunter--or Preston who so quickly inverts the predatory relationship? The hunting metaphor is a familiar one in microbiology and epidemiology. The microbiologist Paul de Kruif popularized it in his 1926 best-selling account of *Microbe Hunters:* the scientific researchers throughout history who had identified the microbes responsible for a variety of deadly diseases. The

daring virus hunters Preston follows in *The Hot Zone* leave their laboratories for the danger zones of outbreaks. But for Geisbert, back in his lab, the hunting reference summons the ritualistic, quasi-mystical quality of the relationship of hunter and hunted, here pivoting around *prey*. Geisbert feels himself pulled out of the human—moral, but also rational—world into an experience of the numinous, Rudolf Otto's term for an experiential state of "'creature-consciousness' or creature-feeling" (10) that is "*sui generis* and irreducible to any other" and "cannot be strictly defined" (7). It is a fundamental and utterly irrational experience that precedes (but informs) religion, a feeling of awe, dread, sublimity: "the emotion of a creature, submerged and overwhelmed by its own nothingness in contrast to that which is supreme above all creatures" (10)—the closest, perhaps, a human being can get to what we might imagine the state between living and non-living might feel like if consciousness could exist in such a state.

If Geisbert's virus hunting pulls him out of the human realm, however, a more common metaphor in science writing and political discourse issues a powerful counterforce. *Microbial warfare* pulls the virus into the human world. The problems with the metaphor as it has been deployed in relation to the COVID-19 pandemic have been widely proclaimed in opinion pieces warning that its usage can transform citizens into soldiers, encourage obedience and promote authoritarianism, justify unwarranted sacrifices (soldiers enlist ostensibly with an understanding of the risks of battle; grocery clerks and farm workers do not), silence productive debate, inspire heightened nationalism instead of global co-operation, and slip readily into embodying the virus in presumptive carriers who are invariably members of already-stigmatized—racially, economically—populations.[2]

[2] See, for example, Susan Serod, "Why 'Waging War' on Coronavirus Is a Dangerous Metaphor," *Common Dreams* (April 3, 2020) @ https://www.commondreams.org/views/2020/04/03/why-waging-war-coronavirus-dangerous-metaphor; Mahima A. Jain, "Use of War Metaphors For COVID Divides People, Spreads Fear," *IndiaSpend* (April 26, 2020) @

The appeal, however, seems ineluctable. After all, war is a familiar human experience, with precedents, strategies, and a ready-made vocabulary to turn hardship and even death into dignifying expressions of heroism and noble sacrifice. The experience of disease, by contrast, is anything but dignified. Preston's lurid descriptions of what infections with filoviruses do to human bodies are utterly dehumanizing—it is called "depersonalization," he explains. Viruses embody Nature's lack, as Lederberg puts it, of any "special sentiment for the human versus other species" (1993, 8). That this entity on the border of life and death, visible only with extraordinary technology, can be "the single biggest threat" to humanity's planetary dominance surely challenges humanity's hubris. A cunning enemy replaces the mockery of indifference with the gravitas of enmity and consequent restoration of dignity.

Hence microbial agency. Microbes "are not idle bystanders, waiting for new opportunities offered by human mobility, ignorance, or neglect," cautions the microbiologist Richard Krause, one-time director of the National Institute of Allergy and Infectious Diseases. With their "remarkable genetic versatility that enables them to develop new pathogenic vigor, to escape population immunity by acquiring new antigens, and to develop antibiotic resistance," microbes are "more than simple opportunists. They have also been great innovators" (1073). The science journalist Madeline Drexler calls microbes "secret agents" (3) and "Nature's undercover operatives" (8), explaining how they work by "hijacking the

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https://www.indiaspend.com/use-of-war-metaphors-for-covid-divides-people-spreads-fear/; Costanza Musu, "War Metaphors Used for Covid-19 Are Compelling—But Also Dangerous," *The Conversation* (April 8, 2020) @https://theconversation.com/war-metaphors-used-for-covid-19-are-compelling-but-also-dangerous-135406; Jacob Hagstrom, "Stop Calling Covid-19 a War," *The Washington Post* (April 20, 2020) @ https://www.washingtonpost.com/outlook/2020/04/20/stop-calling-covid-19-war/; Adina Wise, "Military Metaphors Distort the Reality of Covid-19," *Scientific American* (April 17, 2020) @ https://blogs.scientificamerican.com/observations/military-metaphors-distort-the-reality-of-covid-19/; Saurav Upadhyay, "The Problem with Saying We're 'At War' With the Coronavirus," *American Friends Service Committee Blog* (April 8, 2020) @ https://www.afsc.org/blogs/news-and-commentary/how-to-talk-about-covid-19-pandemic. All accessed May 13, 2020.

cell's metabolic machinery" (9) and "coordinate their activities" via "a wireless communication system, called 'quorum sensing" (11). For Preston viruses are "molecular sharks, a motive without a mind….Compact, hard, logical, totally selfish…" (85). Contemplating a filovirus like the one Geisbert identifies in *The Hot Zone*, Colonel Sam Daniels (Dustin Hoffman) in *Outbreak* concedes, "You have to admire its simplicity. It's one billionth our size and it's beating us."

But even this grudging admiration of a soldier for his foe is nothing like the hunter's quasi-mystical respect for, and ritual dance with, his prey. Geisbert's contemplative communion with the virus broadens his perspective as it heightens his awareness. The virus is at once mystifying and clarifying: it is utterly alien as a life form from a human perspective. A categorical as well as medical challenge, it explodes boundaries along with classificatory systems. In the numinous experience that Preston describes, the *moral boundaries blur and finally dissolve completely* because moral boundaries are part of the human world, from which Geisbert has been transported. The filovirus lacks the consciousness to be an enemy combatant.

The war metaphor is dangerous not only for the earlier list of reasons, but also because as it confers agency and even intentionality on a microbe, it displaces human responsibility for the pandemic onto it. Thus are we—from scientists and science journalists to the general public—rhetorically trained to think about disease-causing microbes. A microbial infection can produce symptoms. Human beings cause pandemics. As an exponentially expanding population develops and moves into uninhabited or sparsely inhabited areas, we encounter microbes to which humans are immunologically naïve; as the world shrinks, and we circulate with increasing speed and frequency, these microbes travel with us. That was the message of the 1989 *Emerging Viruses* Conference organized to explore the proliferation of devastating communicable diseases surfacing in the 1970s and 1980s. The conference yielded the concept of "disease emergence," defined as a phenomenon resulting from development and globalization practices. As one of

the conference organizers, the epidemiologist Stephen Morse, puts it, "Basically, people are creating much of the viral traffic….We need to recognize this and learn how to be better traffic engineers" (21). Or, in Preston's more sensational terms, a "hot virus in the rain forest lives within a twenty-four-hour plane flight from every city on earth. All of the earth's cities are connected by a web of airline routes. The web is a network. Once a virus hits the net, it can shoot anywhere in a day—Paris, Tokyo, NY, LA, wherever planes fly" (18). We are not at war with our microbes; we are their unwitting carriers, in all senses of the word.

Morality is a human concept. The world without moral boundaries is the natural world. Geisbert's response to the vision of the filovirus, as Preston describes it, resembles what Otto calls *'mysterium tremendum*,' a pervasive feeling of being suffused that can manifest from the sense of a "gentle tide…to an almost grisly horror and shuddering." Incited by a confrontation with "the wholly other," it is a "unique 'dread' of the uncanny" that may "be so overwhelmingly great that it seems to penetrate to the very marrow,…making…hair bristle and…limbs quake." It inspires an irrational fusion of dread, awe, horror, and "aesthetic rapture" culminating in "a mystical awe…set[ting] free as its accompaniment…that 'creature' feeling' of personal nothingness and submergence before the awe-inspiring object directly experienced" (17). In Geisbert's case, the filovirus embodies the destructive power and incomprehensible majesty of Nature: *the obscene goddess revealed naked*. Little wonder, then, the ineluctable temptation to recast it as—and reduce it to--an enemy combatant.

The demonization extends, moreover, beyond her viral emissary to her human worshippers and even to the goddess herself. The insanely misguided environmentalist who deliberately seeds outbreaks—and even worldwide pandemics—in order to defend the goddess against the virus of humanity is a familiar character in fictional outbreak narratives. Tom Cool's brilliant, beautiful, "high-tech terrorist" Arabella—aka Infectress—for instance, believes herself to be

"'the angel of the Earth'" (358). "'Her force flows through me,'" she declares, as she plots the demise of 98% of the world's population through a virus designed to "*save the planet from this horrible infection, this disease of humanity*" (360). Even Margaret Atwood's Crake, the most complex, intriguing, and sympathetic of them, is a close cousin of the pod people of Robin Cook's *Invasion*—a rewriting of Jack Finney's *Body Snatchers*—and the hybrid virus/human environmentalist "Patient Zero" of Chuck Hogan's *The Blood Artists,* both literal manifestations of the slippage from environmentalists to demonized viruses determined radically to thin the human population. Uber villain of the wildly popular conclusion to Marvel's mythic Avengers series--*Avengers: Infinity War* (2018) and *Avengers: Endgame* (2019)—is heir apparent to this figure, despite having replaced the microbial weapon with the more instantaneous Infinity Gauntlet to annihilate half of life on Earth on behalf, he insists, of a besieged planet.

This idea of humanity as planetary plague has migrated to popular culture from science and science journalism. Lederberg calls the communicable diseases produced by our "ever-evolving adversary," the microbe, "'Nature's revenge,' for our intrusion into forest, irrigation projects, and climate change" (1996, 417-18). Observing that "most of the 'new' hemorrhagic fevers emerged only because of large and often still accelerating ecologic changes made by a burgeoning *Homo sapiens,"* the virologist and well-known virus hunter Karl Johnson saw them as forecasting how we had made "our earth…a progressively immunocompromised ecosystem" (55). Preston picks up on what quickly became a familiar metaphor, describing "the earth [as] mounting an immune response against the human species" and "beginning to react to the human parasite, the flooding infection of people, the dead spots of concrete all over the planet, the cancerous rot-outs in Europe, Japan, and the United States," all suggesting that "the biosphere [may] not 'like' the idea of five billion humans" and "the earth's immune system, so to speak, has recognized the presence of the human species and is starting to kick

in" (406-07). The metaphor has turned meme in recent weeks as pundits meditate on the uncannily salutary effect of SARS-CoV-2 on this unsilent spring.

The displacement of human responsibility onto a demonized microbial agent is a tragically missed opportunity. "Ultimately," chastens Morse, "human actions underlie many episodes of disease emergence, and our own influence and responsibility may therefore be greater than we usually suppose" (x). The realization "that microbes generally spread by exploiting human behaviors" is good news to science journalist Laurie Garrett, since it means those "behaviors…may be changed or avoided, thus reducing or eliminating the opportunities of transmission of bacteria, viruses, fungi, and parasites" (193). But acting on that good news would require dramatic large- and small-scale changes in how humans inhabit the world beginning, even more profoundly, with how we think about it.

Preston's Tom Geisbert might well be the spirit guide to lead us into the numinous experience of contemplating the life form we have demonized. The experience of *mysterium tremendum* is, perhaps, what life looks—or feels—like in the Alienocene. It is not a place we can remain, but if it is a place where moral boundaries dissolve, we might linger there briefly in a moment of radical contemplation. If Turner's *communitas* reaffirms social structures as they are, the dissolution of moral boundaries in the world beyond the human might be an opportunity not to dispense entirely with morality, but to interrogate the beliefs that underpin the social structures and the behaviors they reproduce. The many calls to replace the Anthropocene with different terms have come largely from the recognition of differential responsibilities for and consequences of planetary devastation. As in classical literature, the plagues marking disruption in the natural world signal profound disorder in the social world—with the resolution of the former invariably depending on the urgent redress of the latter.

It is not SARS-CoV-2, but the pandemic that manifests a broken system in need of urgent attention and deep rethinking. A moment of crisis inspires the

urgency of survival and summons the bellicose cries of battle we have been hearing. But it is human hubris that has led us tragically to imagine we are at war with Nature. That error has blinded us to the fact that we have declared war on ourselves, and the battlefield is anything but equal. The humbling experience of the *numinous*—the sense of a wholly other before whom we are nothing—might afford us a clearer view of the alien virus and the world we inhabit together. It might lead to an acceptance, as the historian William H. McNeill observes, that "[w]e will never escape the ecosystem and the limits of the ecosystem. Whether we like it or not, we are caught in the food chain, eating and being eaten. It is one of the conditions of life" (36). And with that acceptance might come new ways of thinking about life: how the biological and the social constitute the double helix of planetary life. Humility might help us see that we are not passive victims of chance, but rather active members of an organic system, possibly leading to insight into the conditions we have created and those we can change, beginning with a careful parsing of "we." While "we" may be, as the popular slogan goes, "in this together," the responsibility for having gotten "here" is not equally shared, nor is the burden equally borne. Perhaps, then, we might linger *here*—in the Alienocene—just long enough to channel the furor of our collective imagination into a much-needed metamorphosis, turning SARS-CoV-2 from an enemy combatant into an agent of positive, equitable, and long overdue change.

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