



# Infection

*Living Lexicon for the Environmental Humanities*

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The parasite intervenes, enters the system as an element of fluctuation. It excites it or incites it; it puts it into motion, or it paralyzes it. It changes its energetic state, its displacements and condensations. By despoiling actions, like ascarid worms or leeches; by toxic actions, like ticks or fleas; by trauma, like bilharzias or trichina worms; by infection, like dysenteric amoebas; by obstruction, like filarial of elephantiasis; by compression, like those that form cysts; by irritations, inflammations, itching; by rashes ...

~ Michel Serres, *The Parasite*.<sup>1</sup>

Infection is an invasion; a breaching of boundaries. Infection is an event; a becoming with. Infection is a “fluctuation” in the present order of things.

Infection takes place in the urinary tract, the blood, the lung, and the computer. It also takes place in the industrial hen house, the pharmaceutical corporation, in the forest converted to palm oil, and in the hollowed out aftermath of structural adjustment policies. Viruses, bacteria, prions, nematodes, arthropods, and macroparasites cause infection. So does a good joke. Faeces, spit, sex, hospitals (by iatrogenesis), and keyboards spread infection. Infections are occult, pandemic, zoonotic, and sapronotic. Infections colonize, and are opportunistic, chronic, and pathogenic. Infections are wild, and of our own making. Situated responses to infection include quarantine, preparedness, witchcraft accusation, and chicken soup.

Infections are neither beings nor relatings, but are “quasi-objects”<sup>2</sup> and “process-relational entities”.<sup>3</sup> At the global scale, one kind of embedded infectious becoming is the outbreak of warfare. The military and cultural conquest of the New

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<sup>1</sup> Michel Serres, *The Parasite* (Baltimore: Johns Hopkins University Press, 1982).

<sup>2</sup> Serres, *The Parasite*.

<sup>3</sup> Alfred North Whitehead, *Process and Reality: An Essay in Cosmology* (New York: The Free Press, 1978).

World was preceded by an advance army of infections.<sup>4</sup> The virulence and spread of the 1918 Influenza pandemic was shaped by the conditions of trench warfare during World War I.<sup>5</sup> Another kind of infectious becoming exists at the microscale. Viruses have infected egg and sperm inserting their genes into ours over the course of millennia. As part of the human “metagenome,” viruses inhabit every corner of our bodies, vastly outnumbering human and bacterial cells alike, and are arguably responsible for life as we know it. A particular gene found in mammals called a “syncytin” codes for a protein made in the placenta that allows a fetus to draw nutrients from its mother. The syncytin is a viral gene, indicating viral infection enabled the evolutionary emergence of mammals.<sup>6</sup> In these stories, the human is really part microbe.

Infection allows for renewed friendship between the humanities and social sciences, and evolutionary theory. Virulent strains arise through random mutation: genetic shift and drift. New strains reproduce and multiply unless they meet some limitation, for example if the host should die too quickly and can't transport the virus to a new susceptible. The “molecular narrative,”<sup>7</sup> a singular emphasis on the relationship between viron and host immunity does not get us even half way to understanding what makes a population of susceptibles, however. For this, we need to know about the structures of inequality that create susceptibility. The new science of “structural one health”<sup>8</sup> tracks disease emergence along multispecies circuits of capital and denaturalizes the evolutionary niches within which infections arise and become deadly.

Changes in social organization change epidemiology and the nature of infection. The recent shift to pathogenicity in H5 and H7 Influenzas are a product of the “Livestock Revolution” and the industrialization of animal agriculture.<sup>9</sup> Two mutations in the cleavage site of H5N1 allow it to shift from the gut to the brain, blood, and lungs of infected poultry moving from low to high pathogenicity.<sup>10</sup> New strains of infectious influenza can kill a chicken in a few hours—“one cluck and its dead” as some in Java have described it—and the possibility of more mutations may portend human infection and transmissibility. At the same time, neoliberal restructuring has made states and populations around the world less able to respond to outbreaks, like the Ebola filovirus.<sup>11</sup> Race, class, gender and sexuality define cartographies of

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<sup>4</sup> William H. McNeill, *Plagues and Peoples* (New York: Anchor Books, 1976).

<sup>5</sup> Paul W. Ewald, “Transmission Modes and the Evolution of Virulence,” *Human Nature* 2, no. 1 (1991): 1-30.

<sup>6</sup> Carl Zimmer, “Mammals Made by Viruses,” *Discover* 14 February, 2012.

<sup>7</sup> Bruce Braun, “Biopolitics and the Molecularization of Life,” *Cultural Geographies* 14, no. 6 (2007): 6-28.

<sup>8</sup> Rob Wallace, et al., “The Dawn of Structural One Health: A New Science Tracking Disease Emergence along Circuits of Capital,” *Social Science and Medicine*, 2014.

<sup>9</sup> Celia Lowe, “Viral Clouds: Becoming H5N1 in Indonesia,” *Cultural Anthropology* 25, no. 4 (2010): 625-648.

<sup>10</sup> Toshihiro Ito, et al., “Generation of a Highly Pathogenic Avian Influenza A Virus from an Avirulent Field Isolate by Passaging Through Chickens,” *Journal of Virology* 75, no. 9 (2001): 4439.

<sup>11</sup> Daniel Hoffman and Mary Moran, “Introduction: Ebola In Perspective,” *Fieldsights - Hot Spots*, *Cultural Anthropology Online*, 7 October, 2014, accessed 25 October 2014, <http://culanth.org/fieldsights/586-introduction-ebola-in-perspective>.

care and isolation: "Ebola didn't kill Thomas Eric Duncan," his nephew says.<sup>12</sup> In these combinations are the makings of new pandemic scenarios.

Behaviours, like laughter, are infectious. Infection can create a "we" where there was once an "I." We might not always like this emergent multiplicity, however. We are told to be afraid. Build a bomb shelter; buy duct tape to seal yourself in; arm yourself! Fear is epidemic and contagious. Anti-Semitism, anti-immigration, and anti-Communism name significant histories of outbreak. "Peace Lines" in Northern Ireland, the US-Mexico "Border Fence," the "Israel-West Bank Barrier," clumsily attempt to hold contagion at bay, creating an "I" where there might have been a "we." We put up defences against infection: variolation, vaccination, immunization. But what else are these substances doing inside our bodies as they guard against contagion: causing Gulf War Syndrome; Autism; Guillain-Barré disease?

"Philosophy is not simply a tribunal of reason; it is also a battleground of infections and sicknesses," writes Keith Ansell Pearson.<sup>13</sup> Infection inhabits theory. Durkheim's idea of "collective effervescence," and Bourdieu's concept of "habitus," for example, are both theories of infection. They are the horizontal gene transfer of "society" into the "individual." Michel Serres holds up the "parasite" as an infectious model of social order.<sup>14</sup> Serres' parasite is the uninvited guest who takes up the hospitality of the host without giving anything in return. His parasite is also a "thermal exciter," causing fever and transforming relations. He posits the parasite as a "third term" between subject and object necessary for all communication and intercourse.

Infection is carried invisibly. Ingram notes that whereas microbes were once "silent and poorly represented," they are now "noisily and prolifically present" due to new genetic and information technologies.<sup>15</sup> Paxson and Helmreich observe that microbes have moved "from peril to promise," no longer only associated with "germs, disease, and contagion."<sup>16</sup> Relations with companion species and human commensals are currently described through love, desire, sensuousness, affection, curiosity, pleasure, even sexuality in multispecies work. But multispecies relationships are also about predation, encroaching, poaching, infection, and pathogenicity. If I am lucky, I will never do anything like "participant-observation" with a highly pathogenic H5N1 or Ebola virus.

Anna Tsing points to the threatening nature of some companion species, noting that fungi can sometimes be "ferocious pathogens," and "irritating parasites" citing the fungal

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<sup>12</sup> Joseph Weeks, "Ebola Didn't Have to Kill Thomas Eric Duncan, Nephew Says," *Dallas News* 14 October 2014, accessed 15 October 2014, <http://www.dallasnews.com/opinion/latest-columns/20141014-exclusive-ebola-didnt-have-to-kill-thomas-eric-duncan-nephew-says.ece>.

<sup>13</sup> Keith Ansell Pearson, *Viroid Life: Perspectives on Nietzsche and the Transhuman Condition* (London: Routledge, 1997).

<sup>14</sup> Serres, *The Parasite*.

<sup>15</sup> Mirill Ingram, "Fermentation, Rot, and Other Human-Microbial Performances," in *Knowing Nature: Conversations at the Intersection of Political Ecology and Science Studies* (Chicago: University of Chicago Press, 2010).

<sup>16</sup> Heather Paxson and Stefan Helmreich, "The Perils and Promises of Microbial Abundance: Novel Natures and Model Ecosystems, from Artisanal Cheese to Alien Seas," *Social Studies of Science* 44, no. 2 (2014): 165-193.

infections that kill AIDS patients, ringworm and athlete's foot.<sup>17</sup> Paul Rabinow lashes out at animal studies saying, "currently, it is being actively debated in elite universities about how best to theorize the extension of fundamental rights to plants, animals, rocks, and atoms in their status as affective beings—all this, while regimes such as that of Assad in Syria systematically slaughter their citizens, populations are decimated, and strife of every sort is epidemic."<sup>18</sup>

The problem spaces suggested for the Environmental Humanities by infection query not so much the means to commensurate our compassion towards other humans and nonhuman others; they suggest the difficulty of how to live amidst the transfers, splicings, codings, and retroviral, opportunistic and occult becomings in which specific human and animal hosts are infected and others are simply implicated.

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