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Viral Ethnography: Metaphors for Writing Life

It's hard to describe what I do. When I tell people I study viruses, they think I mean microbiology. "But I thought you were an anthropologist?" they might ask me.

Recently I have been calling myself a "viral ethnographer." Ethnography, from "ethnos" and "graphos," is the practice of writing the human. What could it possibly mean to write life beyond the human, to write *viral* ethnography? And what would "caring about species," the central idea of this issue of *Perspectives*, mean when the species you study are viruses? I never want to do anything like participant observation—the classical ethnographic method of subjective and bodily immersion—with a deadly influenza or Ebola virus. And don't anthropologists already have their work cut out for them in caring about their fellow humans?

My work on viruses began in 2006 during a global outbreak of a deadly influenza virus. Having recently completed a book, *Wild Profusion*,[1] where I examined biodiversity conservation in Indonesia, tracing out the contours of Indonesian's conservation biology, I was curious to find that Indonesia was again gaining center stage as a site of endangerment: it had become "ground zero" for the H5N1 strain of highly pathogenic avian influenza. The international community feared this new strain would make a sustained leap from poultry to humans and emerge as a global pandemic with the virulence of the infamous 1918 influenza (the Spanish Flu) that had killed more people than World War I itself. As the international community ramped up its rhetoric and interventions around H5N1, what was intriguing to me was the overlap between the idea of a global pandemic threat and the programmatic language of biosecurity that had come out of the Bush administration in the United States in the wake of the September 11th and the anthrax attacks of 2001. How was a new global security agenda being shaped in Indonesia through engagement with the influenza virus and the concept of "pandemic preparedness"?[2]

1 Celia Lowe, *Wild Profusion: Biodiversity Conservation in an Indonesian Archipelago* (Princeton: Princeton University Press, 2006).

2 Pandemic preparedness names new bureaucratic interventions that prepare for medical, social, economic, and political upheaval in the wake of a disease pandemic. They include activities like drug stockpiling, event simulation, vaccination, and risk management, and are notably distinct from conventional public health interventions. See Carlo Caduff, *The Pandemic Perhaps: Dramatic Events in a Public Culture of Danger* (Berkeley: University of California Press, 2015).

While I have written about the term biosecurity and its relationship to emergent practices of global health,[3] what eventually became most interesting to me in the process of studying influenza was the status of the virus itself. Microbes are made significant in given contexts, and the material properties of a virus play an iterative role in shaping the milieu in which they come to exist. In Indonesia, contagious viral agents infected a multitude of living beings—domestic poultry, humans, wild birds, and other creatures—at the same time as Indonesian citizens and scores of organizations were scripted into national and international concerns about pandemic preparedness, biosecurity, and sovereignty. In the sequence of human "index" (i.e.: first identified) case, ensuing illness clusters, and millions of poultry deaths, H5N1 assumed novel forms, evaded detection by health authorities, and introduced a cloudy uncertainty to established biopolitical relations. I called this uncertainty the "viral cloud,"[4] a metaphor playing off of the cloud of genomes that are found in any single instance of influenza infection, and are responsible for frequent mutation and recombination events that transform the virus and its relations.

I wrote about viral clouds in the edition of *Cultural Anthropology* that laid out a program for the new field of multispecies ethnography (of which viral ethnography is a part). Multispecies ethnography, or the study of humans "becoming with" and making worlds alongside of companion species, is also the study of the worlds that these other-than-human creatures make themselves. Many studies beyond the human expand upon the implications of animals themselves having culture.[5] Other multispecies work is interested in how animals have "legibly biographical and political [and I would add historical] lives," and how other organisms intersect with political, economic, and cultural forces.[6]

One distinguishing feature of viral or microbial studies within multispecies ethnography is the lack of visibility: viruses exist invisibly within and around us. While they can be recognized by cell receptors deep inside bodies, they are not accessible to perception, proprioception, or interoception. This makes them different from elephants, bees, or frogs. Viruses can only be inferred through symptoms, or recognized prosthetically

3 Celia Lowe, "Preparing Indonesia: H5N1 Influenza through the Lens of Global Health," *Indonesia* 90 (October 2010): 147–70, and Celia Lowe, "From Biodiversity to Biosecurity," *The Political Ecology Handbook*, ed. Gavin Bridge and James McCarthy (New York and London: Routledge, 2015), 493–501.
4 Celia Lowe, "Viral Clouds: Becoming H5N1 in Indonesia," *Cultural Anthropology* 25, no. 4 (2010): 625–49.
5 John Hartigan, *Aesop's Anthropology: A Multispecies Approach* (Minneapolis: University of Minnesota Press, 2014).
6 Eben Kirksey and Stefan Helmreich, "The Emergence of Multispecies Ethnography," *Cultural Anthropology* 25, no. 4 (2010): 545–76.

through science. In fact, the viral object did not "exist" before the late nineteenth century when Dutch biologist, Martinus Beijerinick, identified the cause of Tobacco Mosaic disease as a "contagious living fluid" that he named a virus.[7] It wasn't until the invention of the electron microscope in the 1930s, though, that it became possible to "see" viruses. In the multispecies connections among humans, animals, and microbes that I focused on in "Viral Clouds," H5N1 became apparent through the experience of infection; identification in laboratories, reference hospitals, and field sites; in political contestations; and through "outbreak narratives"[8] that framed the disease and its importance for particular audiences.

Microbes have taken on renewed significance, not only through the recognition that new and deadly pathogens (like HIV, Ebola, or drug resistant TB) are continuously and rapidly emerging, but also through changed understandings of the role that microbes play in forming and enabling desirable forms of life that we *do* wish to cultivate (think probiotics or cheese molds). Mrill Ingram observes that whereas microbes were once "silent and poorly represented," due to new genetic and information technologies they are now "noisily and prolifically present" in the scientific and popular imagination.[9] Through work on artisanal cheese and astrobiology, Heather Paxson and Stefan Helmreich, similarly, describe what they call "millennial microbes" in which the microbe has become a new popular and scientific model for nature that "unfolds at scales below human perception," and where boundaries are breached between humans, animals, plants, and more. In these arenas, microbes have moved "from peril to promise," no longer only associated with "germs, disease, and contagion."[10]

Viruses have reworked human and other life in newly discovered and subtle ways. 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"

7 Carl Zimmer, *A Planet of Viruses* (Chicago: University of Chicago Press, 2011).
8 Priscilla Wald, *Contagious: Cultures, Carriers, and the Outbreak Narrative* (Durham: Duke University Press, 2008).
9 Mrill Ingram, "Fermentation, Rot, and Other Human-Microbial Performances," in *Knowing Nature: Conversations at the Intersection of Political Ecology and Science Studies*, ed. Mara J. Goldman, Paul Nadasdy, and Matthew D. Turner (Chicago: University of Chicago Press, 2010): 99–112.
10 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 (2013): 165–93.

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.[11] In these stories, the human is really part virus. This is one reason to care about viruses: viruses *are* us.

But while the human is biologically speaking part microbe, viruses arguably play their most expansive social role when they are on a rampage. Along with their lack of visibility, virulence is a key feature for interrogation in viral ethnography. Viruses rearrange social relations most notably when they cause harm. They receive extra attention and motivate social action when they exhibit the capacity to kill or compromise human and animal life. Relations with companion species and human commensals are recently described through love, care, desire, sensuousness, affection, curiosity, pleasure, even sexuality in multispecies work. But multispecies relationships are also about predation, encroaching, poaching, infection, and pathogenicity. This makes viral studies different from recent posthumanist work on more-than-human worlds that attests to the wonder and newly appreciated sentience of animal life.

In collaborative work with my colleague Ursula Münster, we have studied one particular virus on the rampage: the Elephant Endotheliotropic Herpesvirus (EEHV). In "Viral Creep"[12] we examine the capacity of the herpesvirus to mysteriously emerge and then withdraw within three different settings of elephant care: the conventional and contested elephant enclosure of the Woodland Park Zoo in Seattle, USA; the contaminated and violent "wild" spaces of the Wayanad Wildlife Sanctuary in Kerala, South India; and the carefully designed "household-like" spaces of the new Kaeng Krachan Elephant Park at Zoo Zürich in Switzerland. Despite an ancient relationship with elephants, it has only recently begun to kill juvenile elephants in meaningful numbers. EEHV is now an extinction threat for Asian elephants across the free-ranging to captive spectrum. When EEHV turns deadly, it causes violent and sudden hemorrhagic symptoms involving shedding of the endothelium, the inner lining of blood vessels, and the heart. Baby and juvenile elephants are the most susceptible and can die very rapidly, sometimes in less than a day. EEHV also causes miscarriage in pregnant elephants. It is not the initial herpes infection that appears to be the cause of death, but a

11 Carl Zimmer, "Mammals Made by Viruses," *The Loom* 14 (12 February, 2012), available at http://blogs.discovermagazine.com/loom/2012/02/14/mammals-made-by-viruses/.

12 Celia Lowe and Ursula Münster, "Viral Creep: Elephants and Viruses in Times of Extinction," in *Environmental Humanities* 8, no. 1 (2016): 118–142.

reactivation leading to fatal viremia (blood infection). Because reactivation of the virus seems, as with other herpesviruses, to be related to stress causing lowered immunity, the contemporary life histories of elephants and knowing what makes an elephant happy are important to efforts to understand and manage the virus. And elephants don't appear to be happy these days living under regimes of human care, from spaces of zoo confinement to the contaminated and encroached upon "wild."

Our term "viral creep" reflects the capacity of EEHV to suddenly and violently take control of the life chances of another individual or species under conditions of stress and disturbance, and then just as quickly recede into the background for an individual or a population. Our argument attempts to recognize the interconnected lives of keepers, caretakers, viruses, and elephants and the ability of the elephant and its viruses to exist, act, and connect outside the parameters of human observation and understanding. This is not a return to the naïve naturalism of viral allopathy; the virus is not the sole "cause" of elephant deaths from herpes. Nor, do we argue that more naturalism and scientific study are all that is called for. Instead, we develop an interpretation of the herpesvirus that enters into relations within complex and emerging ecologies. Again, developing a metaphor that plays off the properties of the virus, we call the agentive power to change and rearrange relationships by entering into and out of relations the "viral creep."

Whether in the hen house or the elephant barn, the material properties of viral beings suggest metaphors, like viral cloud or viral creep, that draw together and make sense of multispecies worlds. Viruses help us see that the multiple in the term "multispecies" is a host of other hosts with complex trajectories of relationality. Viral ethnography, for me, poses the question of what new ontologies emerge adjacent to microbes, how viruses themselves transform in other-than-microbial contexts, and how diverse numbers of us—human, animal, and microscopic entities—exist in these changed worlds.

Viruses have effects and elicit affect. With H5N1, certain forms of human organization were key to the creation of both an epistemic thing (a potential pandemic) and a material and ontological thing (the seemingly natural H5N1 virus itself which indeed emerged out of industrial agriculture). The same could be said for EEHV where practices of human care meet up with an inscrutable virus that seems to thrive amongst anxious, bored, and depressed elephants. "Care," then means more to me than finding viruses inter-

esting. As Ginn, Biesel, and Barua argue, "flourishing always involves a constitutive violence; flourishing does not imply an 'anything goes' free-for-all, but requires that some collectives prosper at the expense of others."[13] Thus, caring for dangerous viruses means acknowledging both human practices that either encourage or thwart pathogenic viral emergence, and the agency and mystery of viral emergence. This is how I can be both an anthropologist who cares about human futures, and a viral ethnographer who attends to the virus perched as it is on the edges of life and nonlife.

13 Franklin Ginn, Uli Biesel, and Maan Barua, "Flourishing with Awkward Creatures: Togetherness, Vulnerability, Killing," in *Environmental Humanities* 4, no. 1 (2014): 113–23.