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Chapter 4: Bio Terror. Hybridity in the Biohorror Narrative, or What We Can Learn from Monsters

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BIO TERROR

Hybridity in the Biohorror Narrative,
or What We Can Learn from Monsters

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Nothing has prepared the narrator protagonist of Jonathan Maberry's *Patient Zero* for the experience of killing people who seem to be the kind of people he would expect to encounter in a supermarket—"a middle-aged woman with lank blond hair and a stained housedress . . . a young boy of no more than ten . . . a pretty teenage girl in a short denim skirt . . . people in business suits and bathing suits"—but who have in fact become mindless monsters with voracious appetites for human flesh. Mistaking the smile of one of his attackers for a show of "relief that someone had come to rescue her," he is chagrined when "that smile stretched and stretched and stretched until it became a rapacious leer." The rushing mass is made up of victims of an engineered infectious agent that has turned them into mindless zombies, or, as Maberry's narrator says, "a predatory thing in human disguise."¹ The novel exemplifies a subgenre I call "epidemiological horror," or "bio-horror," in which the conventions of horror meet the dangers of contagion, as a devastating communicable disease turns the infected into predatory monsters. In biohorror scenarios, the infected might seek to

convert human beings or perhaps hunt them as a key food source, either compulsively and mindlessly, as in *Patient Zero*, or more systematically. The film *Daybreakers* (2009), directed by Michael and Peter Spierig, for example, features vampires who have ostensibly invited human beings to “assimilate” into the new vampire-run order, but it is difficult to accept the sincerity of the offer since the vampires require human blood to survive; their chief industry seems to be human harvesting.

100 Biohorror proliferated in the years following World War II, fueled by the increasing circulation and popularity of both epidemiological detective stories (often case studies from public health departments or the newly formed Epidemiological Investigation Service) and horror fiction and films. Toward the end of the twentieth century, a noticeable shift in biohorror stories marked a heightening attention to terrorism, especially in the United States: anxieties about bioterror in particular increasingly inflected the subgenre. The middle-aged woman, like the rest of the infected in *Patient Zero*, is, as the head of a counterterrorist organization explains to the protagonist, “the new face of global terrorism.”² The marked proliferation of biohorror-bioterror narratives in such cultural forms as fiction, film, television, and video games over the past fifteen years (accelerating in the aftermath of the September 11 attacks) attests to the anxious intermingling of two contemporary preoccupations: contagion (specifically, outbreaks of devastating communicable disease) and terrorism.³ The infectious agents are microorganisms, sometimes engineered, sometimes the result of military (biowarfare) or medical research gone awry, and sometimes the result of human encroachment on the microbe’s natural environment. In all cases, however, the infected become agents of destruction, preying on human beings, that threaten to annihilate the species.

Popular cultural forms register the cultural anxieties and fascination that arise when scientific and technological innovations and geopolitical transformations introduce new ways of understanding the world. Fiction, film, television, video games, and other new media forms characteristically dramatize and, in the process, alter new theories as they appear in specialist publications and conferences and reach the general public through the mainstream media. New ideas circulate initially as a new vocabulary: images, words, phrases, and scenarios that quickly become conventional as they travel through the mainstream media. Popular cul-

tural forms extend these scenarios by dramatizing them in the form of full-blown plots and interactive engagements. In the process, they act as magnifying lenses, amplifying the assumptions that inform the accounts offered in the specialist and mainstream media, thereby facilitating their inspection.

Monsters point to what a culture cannot (yet) classify and thereby embody the challenge to social categories that results from the circulation of new information and ideas about the world. The creatures that populate the proliferating biohorror-bioterror fiction and films have a story to tell about the particular challenges represented by catastrophic communicable disease outbreaks and terrorism, about why these perceived threats have become conjoined, and about the consequences of their conceptual entanglement.

From Microbes to Monsters

The monsters of biohorror narratives are in fact logical extensions of the microbe itself. For researchers, epidemiologists, and science writers whose work concerns devastating communicable diseases, the animation of the microbe seems almost irresistible. Microbes, for Richard Krause, “are not idle bystanders, waiting for new opportunities offered by human mobility, ignorance, or neglect. Microbes possess remarkable genetic versatility that enables them to develop new pathogenic vigor, to escape population immunity by acquiring new antigens, and to develop antibiotic resistance. [They are] more than simple opportunists. They have also been great innovators.”⁴ Madeline Drexler describes the caniness of their use of “a stealth tactic known as phase variation, hiding their immunity-provoking surface proteins and sugars to fool the body’s defenses.”⁵ For Joshua Lederberg, that tactic “says they’ve got a memory. They’re carrying about pieces of their evolutionary history in unexpressed forms, waiting to be expressed.”⁶ Laurie Garrett similarly marvels at their “ability to outwit or manipulate the one microbial sensing system *Homo sapiens* possess: our immune systems,” and Richard Preston calls viruses “molecular sharks, a motive without a mind. . . . Compact, hard, logical, totally selfish, the virus is dedicated to making copies of itself—which it can do on occasion with radiant speed. The prime directive is to replicate.”⁷ These quotations are typical, and the tendency to

animate the microbes in this fashion makes sense since the alternative is to accept the utter indifference of an entity that represents, according to Lederberg, “the single biggest threat to man’s continued dominance on the planet” and whose “meat” is the human body.⁸

102 Lederberg remarks on the challenge of accepting “the reality that Nature is far from benign; at least it has no special sentiment for the welfare of the human versus other species . . . the survival of the human species is not a preordained evolutionary program.”⁹ The irrelevance of the human species is difficult to fathom; our stories put the species at the center of the universe (albeit differentially), the telos of evolutionary development, and the favorite child of Mother Nature. Human beings have developed the technology with which to annihilate ourselves, but no other species can pose such a threat to us—until we think microscopically. With all of our technology, we still know precious little about scores of devastating viruses and other microscopic entities, such as prions. The hosts and behaviors of microorganisms that cause Ebola and Marburg hemorrhagic fevers remain mysteries. As the language of researchers demonstrates, it seems easier to think of these entities as enemies and to imagine human beings at war with the microscopic world of the virus than to imagine the possibility of human extinction as the result of a chance event. In other words, it seems that human beings typically find it very difficult to imagine a scenario in which natural selection does not favor the species.¹⁰

Viruses in particular have captured the human imagination and account for many of the infections in the subgenre of biohorror. From the outset, scientists have been particularly intrigued by this entity that challenged conventional definitions of life. Viruses lie dormant until they encounter a host cell, at which point they harness its mechanisms in order to metabolize and reproduce. As new technologies in the mid-twentieth century enabled scientists to identify viral behavior, viruses generated wonder for the insights they offered into the nature of life itself. Awe bordering on mysticism characterized the earliest accounts of viruses, which appeared to inhabit a “twilight zone between the living and the nonliving.”¹¹ In the most devastating of the emerging hemorrhagic viruses, the horrifically dramatic nature of the symptoms and the overwhelming infectivity seem to have increased the awe. As one renowned viral researcher notes, “Looking at Ebola under an electron

microscope is like looking at a gorgeously wrought ice castle. The thing is so cold. So totally pure.”¹² It is not unusual for researchers to resort to mythological language. Respect and even admiration overcome the fear of one scientist, who, staring at an unidentified entity with potentially species-threatening consequences, sees “white cobras tangled among themselves, like the hair of Medusa. They were the face of Nature herself, the obscene goddess revealed naked. This life form thing was breathtakingly beautiful. As he stared at it, he found himself being pulled out of the human world into a world where moral boundaries blur and finally dissolve completely. He was lost in wonder and admiration, even though he knew that he was the prey.”¹³

The imputation of this mystical quality to viruses enhances their demonic nature, which is characteristically imparted to their carriers—or ostensible carriers. The ghouls of biohorror are the last stage in this process, which begins more subtly with an identification of communicable diseases not only with their actual carriers but also with those whose identity or behaviors make them suspected carriers. The identification of communicable diseases with immigrants, for example—typified in such characteristic formulations as science writer Barbara Culliton’s depiction of “Seoul virus” as “another unwelcome immigrant . . . , a cousin of Asian Hantaan virus, which causes hemorrhagic fever”—fuels what Alan Kraut calls “medicalized nativism” and constitutes immigrants, strangers, or anyone identified as marginal or belonging to any kind of out-group as intrinsic carriers.¹⁴ The anxiety invoked by carriers is amplified when an epidemic is associated with a particular population: gay men and Haitians during the early years of the HIV pandemic; Asians during the SARS outbreak; Mexicans and U.S. Americans (from the perspective of other countries) during the 2009 H1N1 pandemic. While there is a difference between being stigmatized and being demonized, the lines begin to blur, first with the rise of accusations of irresponsibility and subsequently when those accusations escalate into charges of deliberate infection.

The carrier has a long history of stigmatization and demonization in the United States, beginning with the first identified healthy carrier, the infamous Irish immigrant and domestic servant Mary Mallon, or “Typhoid Mary,” as the media dubbed her. The theory that apparently healthy individuals could spread communicable diseases was still not

widely accepted when the sanitary engineer George Soper first surmised that Mallon was the unwitting source of multiple typhoid outbreaks in families for whom she had worked as a cook. Her reluctance to believe Soper's hypotheses and submit to his tests and procedures earned his disapprobation and initiated his public depiction of her as "living culture tube and chronic typhoid germ producer."¹⁵

104 The identification of microbes as the source of communicable disease in the late nineteenth century and of healthy carriers in the beginning of the twentieth century fueled the public health movement and changed U.S. culture.¹⁶ The ordinary social exchanges of everyday life became potential sources of danger. Objects such as library books, postage stamps, and especially money could carry disease, as could the stranger on the train sitting next to you or your most trusted friend or relative.

The carrier in particular presented a dilemma for the state, as early responses to Mallon demonstrate.¹⁷ Because of her recalcitrance, she posed a public danger, according to public health officials, which warranted her incarceration in Riverside Hospital on North Brother Island, off Manhattan. But in the media discussions leading up to and surrounding her legal suit in 1909, the dilemma became clear; the state had an obligation to protect both the rights of the individual—which, many argued, Mallon's incarceration violated—and the health and welfare of the population, to which, argued others, Mallon posed a threat. The healthy carrier thus embodied a conflict between individuals conceived as legal persons (individuals endowed with rights) and as part of a population (bodies circulating through social space), which is also to say between competing forms of state power. The concept of the healthy carrier was therefore disturbing both because of the heretofore unrecognized health threat that such a figure represented and because healthy carriers dramatized the murkiness of the concept of human being and manifested its articulation as an expression of state power.

Mallon's construction as "Typhoid Mary"—her monstrosity—bore witness to this classificatory crisis. In her many roles, she lived the experience that Bruno Latour calls "hybridity," a term he uses to describe the effect of the artificial classifications that arise from rigid disciplinary distinctions. Hybridity results, he contends, from the "modern critical stance" that insists on perceiving the world according to the distinct perspectives of "epistemology, the social sciences [and] the

sciences,” which yield stark divisions between such categories as human and nonhuman, nature and culture. Those distinctions, which he calls “purification,” obscure the networks and interactions that constitute experience. The many roles that objects perform as they circulate are fragmented by this perspective, making them appear to be hybrids. By contrast, Latour argues, these apparent “quasi-objects, quasi-subjects . . . trace networks. They are real, quite real, and we humans have not made them. But they are collective because they attach us to one another, because they circulate in our hands and define our social bond by their very circulation. They are discursive, however; they are narrated, historical, passionate, and peopled with actants of autonomous forms. They are unstable and hazardous, existential, and never forget Being.”¹⁸

The newly discovered microbes of the late nineteenth century exemplify this circulation. In *The Pasteurization of France*, Latour observes that they were invented rather than discovered, which is to say that they filled a conceptual space that preceded their earliest identification. A communicable disease outbreak is both the consequence of the circulation of microbes and evidence of the social bonds and interactions that facilitate that circulation. And circulation is the carrier’s sine qua non. When figures surface that call particular attention to that microbial hybridity, such as carriers, they embody the return of a cultural repressed (the artifice of classificatory “purification”) and can therefore appear monstrous. For its role in elucidating the hybridity of human beings—their social and biological being—and in tracing the networks of relationality among human beings and between the human and the nonhuman, the human carrier is rewarded with monstrosity. That was true for Mary Mallon, the human “culture tube,” in the early twentieth century and for Gaetan Dugas, “Patient Zero” or “avenging angel,” during the HIV/AIDS epidemic, and it has continued in the depiction of alleged carriers—or superspreaders—in twenty-first-century outbreaks of diseases such as SARS and H1N1.¹⁹ The appearance of monstrous carriers in the earliest examples of epidemiological horror in the 1950s and their subsequent proliferation from the mid-1990s to the present illuminates the classificatory challenges registered in microbial anxieties and their social and medical consequences.

In its earliest uses, the term “contagion” pertained as much to ideas as to disease and predated the identification of microbes by several

centuries. Ideas and microbes often circulate along the same routes and by the same general means: social and economic contact. It is, then, not surprising that anxieties about contact and social or ideological contamination (the breakdown of classificatory systems) would find expression in fears about communicable disease. The identification of microbes enabled scientists to track the actual routes of infection, which materialized the analogy between the circulation of microbes and ideas (or ideologies). Better visual technologies offered deeper insight into microbial mechanisms and fine-tuned the analogy.

The rise of virology as a field in the 1950s, for example, coincided with an increase in the perceived threat of Communism, and an examination of the mainstream media and popular culture during the decade shows a metaphor exchange between the two. As scientists learned more about this strange, newly identified entity, they came to understand that viruses worked by taking over the mechanism of a cell and causing it to reproduce the virus. Viruses increasingly assumed the characteristics of Communists; they were devious and sinister, forming a kind of fifth column. Conversely, as anxieties about Communism came to focus on its propagation by internal agents, Communism increasingly became “viral.”²⁰ In both cases, the agents of infection metamorphosed rapidly from viruses and ideas into human agents: carriers and spies.

The Cold War amplified both external and internal threats, reaching near hysteria in the United States with the well-documented fear of Communist infiltration. Popular magazines warned that anyone could be a Communist, and sensational events such as the much-publicized trial of Julius and Ethel Rosenberg and hearings of the House Un-American Activities Committee and the Senate’s Permanent Subcommittee on Investigations dramatized the threat. Celebrities and neighbors alike could be Communist spies working to subvert democracy and the American way of life. Whittaker Chambers, Communist turned informant, regaled readers of the *Saturday Evening Post* with tales of “a ‘ sleeper apparatus ’” that “waits for the future,” warning that these “reserve unit[s] . . . will be brought into play only when those in control see fit—when events dictate.”²¹ Carriers who appeared “normal” could disseminate subversive ideas as easily as germs, and the two threats came together in anxieties about “bacteriological warfare.”

While the nation assumed its role as a superpower and advertised

its prosperity, the media constantly heralded profound dangers to its very existence that, as in contemporary threats of bioterror, seemed to lie at and even within its borders. The threat of bacteriological warfare intensified during the Korean War and was often paired in media analyses with the threat of atomic warfare. Both would result in effects that lingered long after an initial attack; in bacteriological warfare, those effects are the result of a unique and gruesome metamorphosis. Advances in medical technologies in the decades following World War II increased the possibility that engineered microbes could turn ordinary people into unwitting carriers—and therefore potential weapons of mass destruction—and quotidian social interactions into the means of delivery. The horror of bacteriological warfare lies in those perverse transformations, which have a double function in the stories. They manifest the porosity of borders and the regulatory failure of the state both to safeguard the rights of individuals and to protect the bodies circulating through space. At the same time, they display the *consequence* of regulatory failure and, therefore, the *need* for regulation.

From the vampires of Richard Matheson's *I Am Legend* (1954) to the undead of such recent works as Danny Boyle's *Twenty-eight Days Later* (2002) and its sequels, Maberry's *Patient Zero*, Scott Sigler's *Infected* and *Contagious* (both 2008), and Michael Spierig's *Daybreakers*, communicable monstrosity "purifies" microbial agency as it recasts it in more comprehensibly human terms. In Chuck Hogan's *The Blood Artists* (1998), for example, it is hard to distinguish between viral and human consciousness when a virus gradually assumes mental control of an infected environmentalist, who becomes a deliberate and vengeful agent of infection. The viral-human monster proceeds to seed epidemics of a virus of which he is the only survivor (if indeed he can be thought of as a survivor) throughout the United States with the idea of ultimately ridding the earth of its human infection. The researcher protagonists of the Centers for Disease Control and Prevention dub him Patient Zero—or just Zero—and remark on the danger of the transformation, "the character of a virus endowed with human traits? . . . We're talking about a being uninhibited by any obligations, social or moral. Combine the worst elements of a serial murderer, a rapist, an impulsive arsonist. Hyperaggressive, hypersexual, homicidal, egocentric, pathological. An unqualified sociopath. *The ultimate deviant terrorist mentality.* All Zero

wants to do is infect, infect, infect.”²² Zero, if human, is a sociopath, but if Zero is a virus that has assumed control of a human body (an extension of what viruses do when they assume control of cellular mechanisms), then his actions do not make sense within human terms. He inhabits a “world where moral boundaries blur and finally dissolve completely.”²³ Neither Hogan’s protagonists nor the novel itself seems able to sustain that perspective. Zero is the “ultimate” in diabolical enemies: a terrorist who must be tracked and destroyed. *The Blood Artists* is typical of the vast majority of biohorror novels, which attribute malevolence to the infected even as they seek to depict the hosts as driven by impulse rather than rationality. The transformation draws out, as it literalizes, the subtle tendency to demonize the carrier—that is, to attribute the traits of the supernatural, animated, sinister microbe to its human host. Regardless of the source of their spread, microbes ultimately turn the infected into deliberate transmitters, enemies of humanity: bioterrorists.

Metaphor Exchange

The step from monstrous carrier to bioterrorist registers both a continuity with and a distinction between the early Cold War biohorror narratives and the more recent ones—between, that is, threats that resonate primarily with state and substate violence. In both cases, the monstrosity of the carrier is inevitable once the imputation of a microbial imperative to survive is recast as microbial warfare and the carrier’s infection of a population escalates from callous indifference to outright malevolence, a result, as Lederberg’s observations suggest, of the human intolerance of Nature’s indifference. It is not surprising that a change in the political terrain will alter the metaphoric nature of a threat. “Microbes are a perfect metaphor for our fears” about terrorism, observe the authors of “The Infectious Disease Physician and Microbial Bioterrorism.” The post-9/11 world, they note, “seemed *infected* with terrorists, unlimited in virulence, waiting to emerge from dormancy.”²⁴ When, in a 2003 speech to the U.S. Congress, British prime minister Tony Blair remarked on the emergence of “a new and deadly virus . . . [t]he virus [of] terrorism,” he summoned an image that has become, as Ronnie Lippens documents, familiar to the point of conventionality in political discourse.²⁵

Conversely, for Madeline Drexler, “[i]nfectious agents need no

visas. Secret agents shadow ecological change everywhere.” Microbes are “nature’s undercover operatives,” capable of “hijacking the cell’s metabolic machinery”; they even have their own mode of transmitting information: a “wireless communication system, called ‘quorum sensing,’ enables microbes to coordinate their activities.”²⁶ Joshua Lederberg imagines the disease produced by our “ever-evolving adversary” to be “‘Nature’s revenge,’ for our intrusion into forest, irrigation projects, and climate change.”²⁷ *New Yorker* writer Michael Specter dubs avian flu “Nature’s Bioterrorist,” and flying geese visually metamorphose into missiles in the opening shots of *Fatal Contact: Bird Flu in America*, an ABC made-for-television movie that aired on May 9, 2006.²⁸ For Drexler, “the most menacing bioterrorist is Mother Nature herself.”²⁹

As these metaphors suggest, the terms of the comparison inhere in certain characteristics attributed to both communicable disease outbreaks and terrorist attacks, as it once lay in the analogy between viruses and Communists. As the authors of “The Infectious Disease Physician and Microbial Bioterrorism” observe, the near imperceptibility of the threat—the “dormancy” of microbes and terrorists (sleeper cells)—contributes to the similar anxiety they cause. Anyone can harbor dangerous microbes as anyone can be a terrorist, now or at some point in the future. Both make dangerous use of alternative communication systems and wreak havoc by corrupting information; viruses in particular work by harnessing and thereby corrupting the (nuclear) information that maintains healthy systemic functioning, while the vulnerability of communication systems remains a constant refrain in anxious discussions of terrorist threats. Communicable disease outbreaks and terrorist attacks threaten a similar structural, systemic disruption with the potential for social collapse as key personnel are unexpectedly put out of commission, consequently ending delivery of necessary services.

While such analogies are fluid, and therefore easily accommodated to a contemporary scenario, they also register the particularities of each term and modify it accordingly. The connection between anxieties generated by the prospect of outbreaks and terrorist attacks turns on the specific relationship of both to the state. The contemporary concept of “terror,” although vaguely defined, is used primarily, as Susan Wright points out, for substate groups. As Wright documents, this contemporary concept of a terrorist threat emerged in tandem with the identifica-

tion and naming of “emerging infections,” such as Ebola and especially HIV in the 1980s, and both dangers found widespread expression in the mainstream media and popular culture in the 1990s.³⁰ Those depictions, which underscored the relationship of both terrorism and emerging infections to globalization and stressed the particular vulnerability of the state to its effects, increasingly came together, as she notes, in the threat of “bioterrorism.”

110 Unlike concerns about nuclear war and espionage, communicable disease anxieties intensified following the end of the Cold War. Two factors in particular contributed to that amplification. The final decades of the twentieth century witnessed the escalation of warnings in the mainstream media about the exhaustion of natural resources and environmental devastation. The alarm had been sounded earlier, in the 1960s, in events such as the 1962 publication of Rachel Carson’s *Silent Spring* and a 1969 report from the United Nations Economic and Social Council warning of “a crisis of world-wide proportions involving developed and developing countries alike,—the crisis of the human environment” that could endanger “the future of life on earth.”³¹ But such warnings found their main expression in the science fiction of the period, which often featured the image of the ravaged Earth’s striking back (“Nature’s revenge”). In the 1980s, the identification of virulent and mysterious new microbes—HIV in particular—exploded sanguine claims issued by the medical establishment about its imminent conquest of devastating communicable disease, which had served as evidence of U.S. cultural superiority. The threat of “emerging infections” brought the two factors (environmental exhaustion and the failed conquest of communicable disease marked by the HIV pandemic) together in an analysis that manifested the shift from a contest between world powers to dangers created by the very characteristics—such as economic growth and development—that attested to the prosperity and cultural superiority of the nation. The United States had grown so successfully that it had burst its borders: a global state that was ironically the ultimate victim of its own success. The shift prepared the way for the construction of the terrorist threat: the fear of violence associated with substate actors, often depicted in terms of a global network. The relationship between emerging infections as well as other catastrophic communicable diseases and substate violence lies partly in the state’s implicit—and sometimes acknowl-

edged—sense of responsibility for the conditions that have produced these threats, such as global poverty and careless development. That sense is manifested, directly or indirectly, in speculative analyses of both potential pandemics and worldwide terrorist attacks. It therefore makes sense to read the proliferation of biohorror-bioterror narratives—and their monsters—as registering the return of a cultural repressed associated with that often deflected sense of responsibility for the effects of inequities in the flow of global capital.

While Cold War biohorror narratives featured the corruption of channels for the dissemination of information, hence registering anxiety about an attack from within, concerns about the potential for that corruption have been even more pronounced since the 1990s, when alternative means of communication (notably the Internet) became more prevalent. The increasing role of bioterror in biohorror narratives has in particular amplified the horror associated with the perverse transformations of daily social interactions into the means of mass destruction, and the deliberate creation of *carriers* has supplemented the dispersion of microbes as a central feature of the articulated plot. There is a particular horror in the idea of infected individuals becoming literal agents of destruction in their families and communities. The scenario from Maberry's *Patient Zero* that begins this chapter emphasizes the ordinariness of the individuals who have been turned into mindless entities with insatiable appetites for human flesh and blood. The first team that is sent in to destroy them is slaughtered because these trained soldiers hesitate to shoot at the middle-aged women, businessmen, teenagers, and young children who are surging toward them.

The danger of that ordinariness is intensified when carriers are unaware of the status of their infection: people who do not know they are infected, such as the eponymous protagonist of Holden Scott's *The Carrier* (2000), have no reason to take precautions so as not to infect their loved ones. The initial lack of signs of infection maximizes their capacity to sow destruction wherever they travel, which the global ravages of HIV had made so devastatingly clear. Bioterror involving infectious agents, especially ones with incubation periods that last days, weeks, or even longer, capitalizes on the network effects, local and global, of communicable disease. It turns the networks of daily social interactions into augmented avenues of contagion; bioterror involving infectious agents,

in other words, compounds terrorist disruption of state-regulated social structures by employing the very avenues of those structures in the service of (self-)destruction. That is the perversity of bioterror, but it also draws out a central feature of concern about the transformation of social networks into means of disseminating destructive information, microbial or political, on a global scale.

Microbial Transformation and Evolutionary Change

The nature of the threat of contagion lies in its mutual inflections of the biological and sociopolitical conceptions of collectives as well as of individuals. Microbes transform groups and individuals. Historians have demonstrated the role microbes have played in the outcome of wars, in facilitating conquest, in changing populations, and in shifting trade routes.³² Given their transformative effects, it is not surprising that scientists have speculated about the role of microbes, especially viruses, in promoting human evolution. Science fiction and biohorror have variously dramatized that theme, depicting microbes as agents of profound leaps in evolution, as in Greg Bear's novel *Darwin's Radio* (1999) and its 2003 sequel, *Darwin's Children*, or Matheson's *I Am Legend*, in which the virus that produces vampirism infects the entire human species except for the protagonist, Richard Neville. Matheson's novella chronicles Neville's dawning realization that the vampires indeed represent the next stage of evolution for the species. Facing execution at the hands of his vampire captors, he realizes that he is "the abnormal one now. Normalcy was a majority concept, the standard of many and not the standard of just one man." Looking "out over the new people of the earth[, h]e knew he did not belong to them; he knew that, like the vampires, he was anathema and black terror to be destroyed."³³ This realization registers more than Neville's ability to see himself through the eyes of the vampires and consequent acknowledgment that he is an evolutionary anachronism. It also manifests his acceptance of the chance workings of natural selection—Nature's indifference to the survival of the human species.

I Am Legend offers insight into the nature of the anxiety surrounding catastrophic communicable disease, which entangles concerns about the social, economic, and political consequences of the disease with fears about biological consequences. It is well known that a major disease

event can leave a biological impact on its survivors, as individuals and as a collective, not only in terms of a dramatic change in the population but also in the form of immunological and even genetic legacies. But the evolutionary theme of *I Am Legend* suggests a more radical biological metamorphosis. In his depiction of vampirism as a virus with evolutionary consequences, Matheson dramatizes the idea that communicable disease outbreaks are potentially “species-threatening” events.

As critics have noted, vampires and zombies, which account for the majority of contemporary monsters in biohorror narratives, represent different ways of depicting ontological anxieties. Marina Warner, notably, describes the undead phenomenon as stemming from the fear of the loss of the soul and notes the changing nature of that anxiety in evolving representations of the undead since the nineteenth century.³⁴ Biohorror-bioterror narratives show how the contagion anxieties that infuse terror discourse depict ontological anxieties on a larger scale. Harvard University’s first professor of American literature once lamented that the influx of immigrants at the turn of the century threatened to “make the very name of us [Americans] mean something not ourselves.”³⁵ Communists at one time provoked, and terrorists now inspire, analogous fears. Microbes, by contrast, have the capacity to effect such a change at the level of the species. If terrorists threaten to subvert an “American way of life,” microbes turn the threat into a potentially evolutionary leap, which is, at least from the point of view of the metamorphosing species, tantamount to extinction. Lederberg repeatedly returns to the “Darwinian struggle” between human beings and our “ever-evolving adversaries.”³⁶ Turning social transformation into a kind of extinction, the evolutionary inflection helps explain the often disproportionate sense of anxiety associated with outbreaks of communicable disease, whatever the source of the microbe.

That recasting also helps explain the monstrosity of the infected, who become the enemies of human beings in a Darwinian struggle that reaches absurd dimensions. Monstrosity, for Darwin, evinces mutation—a copying error that can be anything from a onetime mistake to the beginning of a new species. As Colin Milburn notes, it manifests taxonomic disruption and attests to the chance events that for Darwin mark change as the one constant of life; it demonstrates the fundamental instability of biological as well as social existence.³⁷ Milburn observes

the centrality of monstrosity to Darwin's mythmaking: his story of human origins and collective identity that is at base an account of the intrinsic absence of origins and of species as an endless process of becoming, materially and definitionally. Microbial monsters in all of their incarnations dramatize how catastrophic communicable disease manifests multiple human vulnerabilities, from an individual's susceptibility to disease to the species' susceptibility to change, geopolitical as well as biological.

114 The evolutionary inflection of the monstrous microbes turns them into more than a threat to people. They also challenge, as they expose, the mechanisms by which a political entity is naturalized through its population. Michel Foucault coined the terms "biopolitics" and "biopower" to name the mechanisms by which the emerging liberal state of the eighteenth century justified its existence and exercised its power through the production of a population for whose welfare it was responsible. The state and the population are therefore mutually constituted with the existence of each contingent on the other.³⁸ When the biohorror scenario is the result of bioterror, the nation-state is typically the target, and it suffers a triple attack. The intended targets are the people (or some subset of them) and the political structure, but the evolutionary inflection means that the state and the population are also definitionally destabilized, with the consequent exposure of their circulation as "quasi-objects, quasi-subjects."

The evolutionary underpinning of biohorror and bioterror ontologically inflects the geopolitical and medical threats variously represented by terrorists and microbes. Certainly, that inflection helps explain the depth of anxiety, often bordering on hysteria, associated with these threats in the mainstream media and popular culture. The metamorphosis of microbes into bioterrorists turns microbes into deliberate, vengeful, substate actors and, conversely, casts terrorists as infectious, environmentally produced threats to species-being. Both pose threats that are at once material and discursive, and their monstrous hybridity contributes to the ontological challenge they present. They demonstrate, as they embody, the unstable definition of such terms as "human being" and "humanity," and insofar as that instability evokes evolutionary anxieties, it suffuses perceived threats to the state with the urgency of apocalyptic threats to the species.

Human Persistence

Biohorror-bioterror narratives characteristically affirm an intangible humanity that prevails despite geopolitical and biological threats. While appearing universal, the expressions and experience of that humanity are safeguarded by and identified with the state. As the advances of biotechnology proliferate, moreover, viral vampires and zombies increasingly share the genre with their engineered cousins: clones, chimeras, and other creatures of the biotechnological revolution. Featuring a clone rather than a disease carrier and a bioweapon that is a fictional dangerous form of radiation (thalaron) rather than a microbe, for example, Stuart Baird's film *Star Trek: Nemesis* (2002) offers an especially clear articulation of the state-species entanglements. The monstrous protagonist Shinzon was engineered to be a weapon of terror in intergalactic war; he was cloned by the bellicose Romulans from the Federation's Captain Jean-Luc Picard and designed to age rapidly with the intention of replacing Picard and fomenting revolution from within. A regime change on Romulus resulted in the abandonment of the plot and Shinzon's subsequent banishment to the dilithium mines of the Romulans' colonized planet, Remus. Taken in by the Remans, he survives and grows to lead a Reman revolution against the Romulans. The film opens with his successful conquest of Romulus and subsequent summoning of the starship USS *Enterprise*, which is under Picard's command.

Shinzon's motives are confused, as befits a monstrous hybrid; the entanglements that define him surface in a key scene between him and Picard, whom he is holding captive as he prepares to transfuse Picard's blood into himself in order to halt the accelerated aging process (and, incidentally, destroy his "original"). In response to Picard's query about why he is planning to destroy the Earth and the Federation in his quest for galactic domination, Shinzon explains, "It's about destiny, Picard. It's about a Reman outcome."³⁹ Significantly, it is Picard, in his response to this explanation—"You're not Reman"—who first manifests confusion about Shinzon's hybridity. Picard, in other words, cannot see Shinzon as having simultaneously biological and political affiliations. Although Shinzon has been raised among the Remans and clearly identifies as Reman, and although he is rendered monstrous in both of his identifications—as stateless terrorist (Reman) and clone—Picard insists only on

his genetic (human) identity. The scene is informative for the slippage between these terms, as Shinzon oscillates between his political and biological identifications. He both explains (sincerely) to Picard that the liberation of the Reman people “is the single thought behind everything” he has done and angrily responds to Picard’s dismay that he identifies as Reman with the assertion, “And I’m not quite human,” followed by the anguished query, “So what am I? My life is meaningless as long as you’re still alive. What am I while you exist? A shadow? An echo?” While Shinzon verges on recognizing his hybridity, he nonetheless experiences himself as bordering on nonexistence. Shinzon, whose attire links him to his physically alien—monstrous—compatriots, is rendered increasingly grotesque as purple veins signal his accelerating disintegration and camera angles and lighting consign him to ever-deepening shadows. The furrows on Picard’s brow show the consternation he experiences as he contemplates the implications of Shinzon’s assertion: Picard can no more take credit for his nobility and heroism than Shinzon should be blamed for his appetite for vengeance. Since they are genetically identical, Shinzon explains, “you are me. The same noble Picard blood runs through my veins. Had you lived my life you’d be doing exactly as I am. So look in the mirror and see yourself.”

The *Enterprise*’s android, Data, doubly rescues Picard, liberating him first from his literal shackles and then from the self-doubt and confusion inspired by his encounter with his clone. What distinguishes both of them—Picard from his clone and Data from his unremarkable prototype, aptly named B-4—is that they both “aspire to be better” than they are. With those words, the film refuses the definitional messiness of Shinzon’s monstrous hybridity and insists on a definition of humanity that rests in the intangible (character, soul, whatever is signified by the ability and desire to “aspire to be better”). Shinzon’s espousal of genetic and environmental determinism compounds his monstrosity and further justifies his exclusion from Data’s definition of humanity. Ironically, however, that very exclusion implicitly underscores the hybridity that Picard and Data—and the film—attempt to disown. Any definition of humanity that excludes Shinzon is necessarily artificial and incomplete.

In its effort to reclaim a “purified” definition of humanity and reaffirm its intangibility and singularity, *Star Trek: Nemesis* is a characteristic biohorror-bioterror narrative. While the evolutionary inflection of

microbial transformation underscores the instability of the definition of human being embodied by the (monstrous hybrid) carrier, the evolutionary struggle in these works typically metamorphoses into a heroic and ultimately triumphant battle for the survival of the human species. These narratives characteristically affirm human superiority and tenacity. Despite their superior strength and, in many cases, their apparent immortality, vampires, zombies, and other monstrous protagonists appear to be unusually unstable life forms, which distinguishes them from the evolved human beings of science-fiction works that explore human evolution. Devolution seems to be an ever-present threat in biohorror narratives. Even in Matheson's novella, while the vampires who represent the new world order are distinct from those that are truly undead (hence, more like zombies) in that they have developed a partial cure, they nonetheless rely on the continual administering of that cure in order to avoid devolving into their mentally deficient counterparts. In *Daybreakers*, a worldwide shortage of human blood causes the vampires to metamorphose into impulsive, violent (literally, bloodthirsty), powerful, but grotesque winged creatures called Subsiders. The instability in both cases suggests that the vampires represent an insufficiently evolved life form and implies that contemporary human beings indeed represent an evolutionary telos: everything else is devolution.

In most cases, human beings prevail, but in Matheson's novella and its first film version, Ubaldo Ragon's *The Last Man on Earth* (1964), Neville develops a cure but never gets the chance to use it. In subsequent versions, however, there are survivors who are either uninfected or who have retained sufficient humanity that they can benefit from the cure, which promises the survival and likely triumph of the human—and still superior—species. Like most apocalyptic narratives, biohorror typically hints at, if not outright insists on, human persistence and affirms the characteristics that fundamentally define “human being” and “humanity” as intangible, transcending any biological, social, or cultural terms. Monstrous hybrids proliferate, as Latour demonstrates, in response to efforts to purify definitions. In these narratives, they mark the unresolved conflicts and the dangerous consequences of those efforts.

Outbreaks of devastating communicable disease and deliberately large-scale violence inevitably register structural problems and geopolitical inequities and affect populations disproportionately. But the

nature of the threats and the underlying problems are obscured by the ways in which they are being formulated. The biohorror narratives discussed in this chapter offer insight into how the naming and conjoining of the multifactorial problems of communicable disease outbreaks and substate violence result in their hybridization as the threat of “bioterror.” Ronnie Lippens points to the proliferating tendency to depict terrorism as a virus since the events of 9/11 as evidence of the increasing medicalization of international relations and of empire generally, which augments the urgency of these threats and mandates an “epidemiological response.” But epidemiological problems, such as communicable disease outbreaks, are themselves medicalized in the process, and the urgency stems from the entanglement of threats to the species and to the state, which distorts the nature of the problem and, consequently, predetermines the solution. As they offer insight into the medicalizing of both threats, biohorror-bioterror narratives can help explain how that process has foreclosed debate about them and limited the means of addressing them effectively.

In her statement “Return to Alma-Ata,” published in the *Lancet* in 2008, World Health Organization director-general Margaret Chan invoked the 1978 conference that culminated in a declaration signed by 134 nations.⁴⁰ The Declaration of Alma-Ata affirms that “health, which is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity, is a fundamental human right and that the attainment of the highest possible level of health is a most important world-wide social goal whose realization requires the action of many other social and economic sectors in addition to the health sector.”⁴¹ The problems of emerging and reemerging infections and devastating outbreaks of communicable disease generally must be conceived of and addressed in social, economic, political, scientific, and cultural as well as medical and epidemiological terms. Nothing, for example, is a more efficient vector than poverty for the escalation of an outbreak of a communicable disease. The “purification” of this problem in medical terms oversimplifies it and thereby prevents the most effective ways of addressing it.

Bioterrorism, like communicable disease, has been hybridized as it has been medicalized. Disagreement about the causes of the kind of worldwide substate violence that has emerged at the turn of the twenty-first century is evident in the very debates about the definition of the

term “terrorism.” It is certain only that the dramatic increase in both the incidents and the destructive magnitude of substate violence, like devastating communicable disease outbreaks, has numerous determinants. Yet, the medicalization evident in the biohorror-bioterror narratives examined in this chapter shows how the tendency to construct bioterror in terms of human survival deflects attention from questions about how human beings live in the world: the nature and causes of political conflicts, environmental devastation, and socioeconomic inequities and their relation to both disease outbreaks and escalating substate violence.

In “Epidemic Intelligence,” chapter 2 in this volume, Andrew Lakoff shows how the dangers of emerging infections and terrorism were politically conjoined in the United States; this chapter has sought to show their conceptual conjunction and to demonstrate how the biohorror-bioterror narratives register underlying connections among the existence of the state, the survival of the species, and the preservation of the intangible notion of humanity. Those connections supply the logic of what Lakoff calls “global health security,” the anticipation of catastrophe and the safeguarding of borders that apply, as he demonstrates, to terrorism as well as to devastating outbreaks of communicable disease. As Lakoff also shows, reliance on the compliance of nation-states undermines efforts, such as the Alma-Ata initiative, that seek more just and equitable solutions to distinctly global problems. Analysis of the monstrous hybrids of biohorror-bioterror narratives can thereby offer insight into the conceptual work that must accompany these crucial efforts.

NOTES

- 1 Jonathan Maberry, *Patient Zero* (New York: St. Martin’s Press, 2009), 236–37.
- 2 *Ibid.*, 21.
- 3 These accounts represent one variant of what I call the “outbreak narrative,” which names the circulation—in specialist and general science publications, the mainstream media, and popular fiction and film—of language, images, and plotlines that become conventional in a paradigmatic narrative about outbreaks of emerging and reemerging infections. For a full discussion of the outbreak narrative, see Priscilla Wald, *Contagious: Cultures, Carriers, and the Outbreak Narrative* (Durham, N.C.: Duke University Press, 2008). I am building on that work in this chapter.

- 4 Richard M. Krause, "The Origin of Plagues: Old and New," *Science* 257 (August 21, 1992): 1073.
- 5 Madeline Drexler, *Secret Agents: The Menace of Emerging Infections* (New York: Penguin Books, 2002), 10–11.
- 6 Quoted in *ibid.*, 11.
- 7 Laurie Garrett, *The Coming Plague: Newly Emerging Diseases in a World Out of Balance* (New York: Farrar, Straus and Giroux, 1994), 618; and Richard Preston, *The Hot Zone* (New York: Doubleday, 1994), 85.
- 8 Lederberg, epigraph for *Outbreak*, dir. Wolfgang Petersen (Burbank, Calif.: Warner Brothers, 1995), DVD.
- 9 Joshua Lederberg, "Viruses and Humankind: Intracellular Symbiosis and Evolutionary Competition," in *Emerging Viruses*, ed. Stephen S. Morse (New York: Oxford University Press, 1993), 8.
- 10 A notable exception to this omission is science fiction, in which human evolution experienced as extinction is a common theme.
- 11 The phrase was used frequently in stories about viruses in the mainstream media.
- 12 Karl Johnson, cited in Preston, *The Hot Zone*, 122.
- 13 Preston, *The Hot Zone*, 197.
- 14 Barbara Culliton, "Emerging Viruses, Emerging Threat," *Science* 247, no. 4940 (Jan. 19, 1990): 279. Alan Kraut coins the term "medicalized nativism" in Alan M. Kraut, *Silent/Travelers: Germs, Genes, and the "Immigrant Menace"* (Baltimore, Md.: Johns Hopkins University Press, 1994), 3.
- 15 George A. Soper, "The Curious Career of Typhoid Mary," *Bulletin of the New York Academy of Medicine* 15 (June 1939): 705.
- 16 For a full discussion of those changes, see especially Nancy Tomes, *The Gospel of Germs: Men, Women, and the Microbe in American Life* (Cambridge, Mass.: Harvard University Press, 1998).
- 17 For a more extended discussion of this dilemma, see Judith Leavitt, *Typhoid Mary: Captive to the Public's Health* (Boston: Beacon, 1996); Andrew Mendelsohn, "'Typhoid Mary' Strikes Again: The Social and the Scientific in the Making of Public Health," *Isis* 86, no. 2 (June 1995): 268–77; and Wald, *Contagious*, chapter 2.
- 18 Bruno Latour, *We Have Never Been Modern*, trans. Catherine Porter (Cambridge, Mass.: Harvard University Press, 1993), 5, 89.
- 19 "'Typhoid Mary' Has Reappeared," *New York Times*, April 4, 1915, sec. 5; and William Hines, "The AIDS Epidemic: A Report From the Front Lines," *Washington Post*, October 11, 1987, X 1.
- 20 For an extended discussion of this metaphor exchange, see Wald, *Contagious*, chapter 4.
- 21 Whittaker Chambers, "I Was the Witness," *Saturday Evening Post*, February 23, 1952, 55.

- 22 Chuck Hogan, *The Blood Artists* (New York: Avon Books, 1998), 249
(emphasis added).
- 23 Preston, *The Hot Zone*, 197.
- 24 Sandra G. Gompf et al., "The Infectious Disease Physician and Microbial
Bioterrorism," in *Microorganisms and Bioterrorism*, ed. Burt Anderson,
Herman Friedman, and Mauro Bendinelli (New York: Springer Science
and Business Media, 2006), 31.
- 25 Tony Blair, "Speech to the U.S. Congress on 17 July," quoted in Ronnie
Lippens, "Viral Contagion and Anti-terrorism: Notes on Medical
Emergency, Legality and Diplomacy," *International Journal for the Semiotics
of Law* 17, no. 2 (June 2004): 126.
- 26 Quoted in Drexler, *Secret Agents*, 3, 8, 9, 11.
- 27 Joshua Lederberg, "Infectious Disease—A Threat to Global Health and
Security," *Journal of the American Medical Association* 276, no. 5 (August 7,
1996): 418, 417.
- 28 Michael Specter, "Nature's Bioterrorist: Is There Any Way to Prevent a
Deadly Avian-Flu Pandemic?" *New Yorker*, February 28, 2005, 50–61; *Fatal
Contact: Bird Flu in America*, dir. Richard Pearce (Culver City, Calif: Sony
Pictures Home Entertainment, 2006), DVD.
- 29 Quoted in Lippens, "Viral Contagion and Anti-terrorism," 18.
- 30 See Susan Wright, "Terrorists and Biological Weapons," *Politics and the Life
Sciences* 25, no. 1 (2006): 57–115.
- 31 United Nations Economic and Social Council, "Crisis of Human
Environment," in *Report of the Secretary-General on Problems of the Human
Environment*, 47th session, agenda item 10, May 26, 1969, 4–6.
- 32 See, for example, Hans Zinsser, *Rats, Lice and History* (Boston: Little,
Brown and Co., 1935); William McNeill, *Plagues and Peoples* (Garden City,
N.J.: Anchor Press, 1976); Christopher Wills, *Yellow Fever, Black Goddess:
The Coevolution of People and Plagues* (Reading, Mass.: Addison-Wesley,
1996); Michael Oldstone, *Viruses, Plagues, and History* (New York: Oxford
University Press, 1998); and Jared Diamond, *Guns, Germs, and Steel: The
Fates of Human Societies* (New York: W. W. Norton, 1997).
- 33 Richard Matheson, *I Am Legend* (1954; New York: ORB, 1995), 169–70.
- 34 See Marina Warner, *Phantasmagoria: Spirit Visions, Metaphors, and Media
into the Twenty-first Century* (Oxford: Oxford University Press, 2006).
- 35 Barrett Wendell, personal correspondence, quoted anonymously in
Horace M. Kallen, "Democracy vs. the Melting-Pot," *Nation* 100 (February
18, 25, 1915), 219.
- 36 Lederberg, "Infectious Disease," 418.
- 37 See Colin Milburn, "Monsters in Eden: Darwin and Derrida," *Modern
Language Notes* 118, no. 3 (April 2003): 603–21.
- 38 See especially the following works by Michel Foucault: "The Birth of

- Biopolitics,” *Ethics, Subjectivity and Truth*, trans. Robert Hurley et al., ed. Paul Rabinow, vol. 1 of *Essential Works of Foucault 1954–1984*, series ed. Paul Rabinow (New York: New Press, 2000), 134–56; “Governmentality,” in *Power*, trans. Robert Hurley et al., ed. James D. Faubion, vol. 3 of *Essential Works of Foucault 1954–1984* (New York: New Press, 2000), 201–22; *History of Sexuality*, vol. 1, *Introduction*, trans. Robert Hurley (New York: Vintage Books, 1978); “*Society Must Be Defended*”: *Lectures at the Collège de France, 1975–1976*, ed. Mauro Bertani and Alessandro Fontana, trans. David Macey (New York: Pantheon, 2003).
- 39 *Star Trek: Nemesis*, dir. Stuart Baird (Hollywood, Calif.: Paramount Home Entertainment, 2002), DVD.
- 40 Margaret Chan, “Return to Alma-Ata,” *Lancet* 372, no. 9642 (September 13, 2008): 865–66. Chan penned the statement for an issue commemorating the thirtieth anniversary of the International Conference on Primary Health Care, held at Alma-Ata, USSR.
- 41 Declaration of Alma-Ata, http://www.who.int/hpr/NPH/docs/declaration_almaata.pdf.