

SPREADING PESTILENCE

One of the primary ways in which different kinds of disaster can be distinguished is in terms of their spatiotemporal coordinates. While all disasters are embedded in longer-term socioecological processes and patterns of vulnerability extending beyond the locality in which they occur, geophysical occurrences such as earthquakes, tsunamis, and tornadoes occur abruptly over a matter of seconds, minutes, or hours, and their immediate impacts are confined to the region affected. The outbreak of a contagious disease with a high morbidity rate, by contrast, constitutes a slow-onset or “creeping” catastrophe, with the potential to afflict human (and in many cases some other-than-human) populations globally.¹ Disease epidemics and, in the worst-case scenario, pandemics also differ from those calamities induced by the liveliness of the lithosphere in the complexity of their etiology. Until very recently, and in most cases presumably still today, earthquakes and volcanoes are not anthropogenic in origin, even though, as we saw in the previous chapter, the eco-catastrophes that they trigger have a strongly sociocultural dimension. Epidemics, by contrast, are hybrid through and through: pestilence spreads, to be sure, and over the past 150 years our understanding of the multiple other-than-human agencies responsible for the proliferation of infectious diseases has grown enormously; but so too have those sociocultural practices through which humans themselves inadvertently spread pestilence across the planet. “In a world of intensifying global interconnectivity,” as Nigel Clark observes, “we are multiplying vectors and niches for our microscopic nemeses far faster than we can physiologically or culturally adapt to their exertions.”²

In this chapter, I will consider how just such a scenario of socioculturally intensified vulnerability to a lethal pandemic was prefigured by Mary Shelley in her apocalyptic novel *The Last Man* (1826), in which the virtual extinction of humankind unfolds, uncannily for today’s readers, amid an oddly disordered climate in the closing decades of this century. In the case of an eco-catastrophe involving infectious disease, we are reminded of the vulnerabilities that inhere in our utter dependence upon an unruly biosphere that was not designed for our exclusive benefit. In a contemporary horizon of disease risk, moreover, reducing human susceptibility to conta-

gion cannot be divorced from ethical questions concerning our treatment of other animals.

The term *epidemic* made its way into English from Hippocrates's *On Airs, Waters, and Places* (c. 400 BCE). This is not only the oldest surviving medical treatise in European culture; as its title suggests, it is also an early work of environmental medicine.³ Composed of the prefix *epi* ("upon, at, or close upon, on the ground or occasion of") and *demos* ("the people"), the word *eipidemiou*, formerly meaning "toward home" or "native," is used in a new sense by Hippocrates in order to relocate the source of disease from the divine to the terrestrial plane. Countering the popular mythic conception of disease as dispatched by the gods, as in the illness that Apollo inflicts on the Achaean army at the beginning of Homer's *Iliad* (c. eighth century BCE), Hippocrates attributed infectious disease to the interaction between people and environment.⁴ In his view, human health and sickness were conditioned by material contingencies such as the quality of air, water, and food, along with the vagaries of climate and the constellation of the planets, in their presumed effect on terrestrial flows and bodily "humors." While he believed that some illnesses, which he classified as "endemic," arose entirely from internal humoral imbalances, the outbreak and spread of an "epidemic" disease was conceived by Hippocrates as a type of eco-catastrophe, arising from a baleful conjunction of human corporeal vulnerability and prevailing environmental conditions.

Epidemic appears to have entered English in the fifteenth century from the Middle French *ypidemie*, with the first recorded vernacular usage of this term appearing in a report by Sir John Paston from 1472 concerning the illness that was at that time killing British soldiers on the battle fields of Brittany.⁵ Although several other infectious illnesses were rife in Europe in the 1400s, especially in the growing towns and cities, the disease that loomed largest for Paston's contemporaries was the one that had caused incomparable carnage in Europe between 1347 and 1351 and continued to flare up with frightful frequency for the next 350 years. The "Black Death," as it was dubbed in the nineteenth century, is generally believed to have been caused by the bubonic plague. Although the last major outbreak in Western Europe occurred in Marseille in 1720–22, the persistence of plague as the paradigmatic pandemic in European cultural memory is evident in Shelley's naming of the primary agent of humanity's imagined demise in her novel of 1826 as "Plague." In the meantime, the development of antibiotics has, for the moment, transformed this dreaded killer into a treatable disease. The horror of the plague nonetheless con-

tinues to resonate in the popular imagination, haunting the Internet and the cinema and prompting authorities to downplay actual occurrences for fear of causing panic.⁶

In the wake of the triumph of the germ theory of disease, the Black Death might be seen as an eco-catastrophe of a somewhat different kind from that which Hippocrates conceived of under the rubric of epidemic, although environmental factors were certainly critical to its spread. Whether or not the primary pathogen in that pandemic was the *Yersinia pestis* bacterium that causes bubonic plague—and there is some debate about this⁷—there is no doubt that one or another of our microbial Earth others was in play. Microbes are believed to have evolved some four billion years ago, and they have played a crucial role in creating, altering, and sustaining that diverse collectivity of multitudinous life forms into which *Homo sapiens* only relatively recently emerged around two hundred thousand years ago. Sociable life on this planet began with microbial networking, and that of all other extant species, including our own, remains utterly dependent upon the lively interchanges of the myriad miniscule critters that not only surround but also dwell within and upon our bodies.⁸ This dependence is both diachronic and synchronic, phylogenetic and ontogenetic, collective and individual: our species became what it is today through a process of ongoing evolutionary “symbiogenesis,” as Lyn Margulis terms it, with these most ancient of our Earth others.⁹ Every human infant, within hours of its birth, is colonized “by swarms of them, all intent on living off this new food source,”¹⁰ and, in the process, providing essential protection to the growing child’s skin and gut and helping to build up their immune system. The human body, it turns out, is a queer confederacy: we have, in fact, never been (wholly or exclusively) human. As Donna Haraway delights in informing us:

Human genomes can only be found in about 10 percent of all the cells that occupy the mundane space that I call my body; the other 90 percent of the cells are filled with the genomes of bacteria, fungi, protists, and such, some of which play in a symphony necessary to my being alive at all, and some of which are hitching a ride and doing the rest of me, of us, no harm. I am vastly outnumbered by my tiny companions; better put, I become an adult human being in company with these tiny messmates. To become one is always to *become with many*.¹¹

Yet this world of teeming microbial life within and without, to which our very existence is indebted, can also be the source of our undoing: several of our microbial companions can make us ill, and some are deadly, causing a catastrophic alteration to that most intimate *oikos*, the more-than-human household of the body that we like to imagine is our own. Yet even the most deadly microbes have also helped to form those of us who are alive today: for we are the ones whose forebears not only survived the depredations of past epidemics but also developed a degree of hereditary immunity to particular pathogens, some of which have in turn become less virulent through this ongoing process of symbiogenesis.¹²

The story of humans and microbes, fascinating though it is, is nonetheless only one strand in the epic tale of epidemics, which also entails the dynamic inter- and intra-actions of a whole host of other human and non-human agencies and processes. As Dorothy Crawford explains, “Epidemics strike whenever and wherever microbes find a large susceptible group of people to infect and can successfully forge a path between them.”¹³ Many such paths were opened up for the first time with the domestication of plants and animals in those parts of the world where farming was developed between 8,500 and 2,500 BCE. Since it enabled the evolution of new pathogens, the agricultural revolution appears to have led to an initial decline in human health and longevity compared with most hunter-gatherer societies (a decline tragically repeated wherever agrarian or industrial invaders have colonized the lands of hunter-gatherers).¹⁴ The subsequent growth of towns and cities, bringing higher population densities, the buildup of refuse, and continuing close contact with some animals, both feral and domesticated, allowed microbes to flourish on a whole new scale. Catastrophic epidemics, along with a variety of endemic illnesses, became thereby a regular feature of human socioecological existence. Particular diseases only reach pandemic proportions, however, when a number of other factors coalesce. In the case of the Black Death, these included the conjunction of military conflict and particular sociocultural norms relating to housing, diet, and trade, with particular climatic conditions, animal and insect population dynamics, and the ever-agile agency of germs.¹⁵

Assuming, as do the majority of researchers, that the Black Death was in fact a plague pandemic, the story goes something like this. The *Y. pestis* bacterium, first identified in Hong Kong in the early 1900s by a young Swiss microbiologist and student of Louis Pasteur, Alexander Yersin, is a relatively recent pathogen, believed to have evolved between fifteen hundred and twenty thousand years ago, which generally gets around courtesy

of fleas. There are around twenty-five hundred different types of flea, but the primary vector of mammalian infection, especially of humans, is *Xenopsylla cheopis*, which makes a living by sucking the blood of a variety of rodents and lagomorphs. Some of these flea hosts, including several of the fifty-odd species of plague carriers in North America, are merrily immune to *Y. pestis* and therefore do a very good job of keeping this particularly nasty pathogen alive and well in the ecosystems they inhabit. Others, however, such as *Rattus rattus*, the black rat, die in agony within days of being infected by a plague-carrying flea. The wee fleas, too, have a rough time of it. *Xenopsylla cheopis* has developed a special valve that allows it to feed several times without losing the contents of its swelling stomach by allowing liquid in but preventing it from flowing back out. If it has the misfortune to suck the blood of a host infected with *Y. pestis*, however, the proliferating bacteria form a clump around this valve, deactivating its feeding tube. In its vain effort to feed, the flea disgorges the contents of its stomach, which are now likely to include some twenty-five thousand bacteria, into the body of its new host. Eventually, the flea will starve to death, but generally not until it has infected another host, if its prior one has died in the meantime. Infected fleas can wipe out an entire colony of black rats in around ten to fourteen days, and given that each rat is likely to harbor around three fleas, you then have a horde of desperately hungry bloodsuckers frantically looking for a feed. Human blood is definitely second best, but it will do in a crisis, so if there are any warm human bodies close by, as there always were in medieval towns and villages, trading vessels and military encampments, the ravenous fleas will find them. Infected fleas can live for some time without a host, moreover, especially in cool, moist conditions, so ships whose resident rats had been wiped out can still convey the disease to their next port of call, with or without the intermediary of flea-infested and perhaps already infected crew members.

Rattus rattus, for its part, appears to have set forth on its gradual colonization of much of the planet from its ancestral haunts in northern India in the foothills of the Himalayas. From there it spread both east and west by hitching a ride overland and across the sea as a stowaway on the caravans and ships of merchants and armies. Black rats were in North Africa by the end of the first century BCE, but it was several centuries before the first plague pandemic broke out in Europe. This was the Justinian Plague of 542–c.740, which probably originated in Africa and, not unlike the imaginary global pandemic in *The Last Man*, subsequently spread throughout the crumbling Roman Empire from Constantinople, producing an estimated

death toll of some one hundred million people. By the Middle Ages, some adventurous black rats had made it all the way up through continental Europe to Britain. Because they are not particularly hardy, though, and are generally happier in the tropics, they could only find an ecological niche in these cooler climes by wintering close to human sources of warmth and shelter, such as thatched roofs, barns, and granaries (which had the added advantage of supplying ready meals). Every cottage acquired a little colony, and in Europe's growing towns and cities, large numbers of rats cohabited at even closer quarters with humans, especially poor ones, whose living conditions were inadequately ventilated, overcrowded, and unsanitary. Apart from their inroads into sometimes scant human food stores, though, this was not so much of a problem unless they became infested with plague-carrying fleas. This was more likely to occur if favorable climatic conditions and ample food supplies had generated a rodent and lagomorph population explosion, in turn causing wild species harboring infected fleas to forage more widely, bringing them into contact with those rats that had happily made a home for themselves among humans. During the Medieval Warm Period, crop yields increased, and by the mid-thirteenth century, human and rodent populations had both burgeoned.

Climate, then, appears to have been a further factor in the fatal triangulation of fleas, rats, and humans that is generally believed to have produced the carnage of the Black Death. But there were also several other ingredients that went into the making of this eco-catastrophe: namely, commerce, conquest, and urbanization. By the mid-thirteenth century, food production was failing to keep up with human population growth in some parts of Europe. As poverty began to rise, rural underemployment contributed toward a drift to the cities. Meanwhile, the constant movement of crusading armies, and, following the end of the Crusades in the late thirteenth century, the increase in trade between Europe and Asia via the Near East, fostered the spread of infectious diseases such as typhoid and smallpox, as well as creating "a virtual flea bridge."¹⁶ These commercial activities were not always peaceful, sometimes occasioning skirmishes between European merchants and the armies of the massive Mongol Empire, which encompassed all of modern China, most of Russia, and much of Central Asia through to Iran and Iraq.

The pandemic of the mid-1400s appears to have broken out in 1346 somewhere in Russia, in the Golden Horde region of the Mongol Empire. From there, *Y. pestis* is believed to have found its way west via the Genoese trading port of Caffa (now Feodosiya) on the Black Sea, to which the

Mongols laid siege in 1347. When disease erupted among their ranks, the Mongol troops retreated, allowing the Italian merchants and their ships to head for home, taking the plague in tow. By the time the first trading vessels arrived in Messina on the coast of Sicily in October that year, many of the men aboard were already sickening. In view of their symptoms, as mysterious as they were unpleasant, the port authorities expelled all the ships' crews, who made for Genoa and Venice. The pestilence then spread swiftly to other trading ports, reaching France via Marseille and North Africa via Tunis by January 1348, penetrating inland along well-trodden trading routes, frequently assisted by people vainly attempting to flee from infection. During the summer, it crossed the Channel and entered England through the port of Melcombe Regis on the south coast. When it reached the amplification zone of London, the disease did away with around twenty to thirty thousand of its sixty to eighty thousand inhabitants. Moving northward at a rate of one to one and a half kilometers per day, it is estimated to have covered the length of England (five hundred kilometers) in around five hundred days.¹⁷ In the meantime, the epidemic was also advancing south down the Iberian Peninsula, north into Scandinavia, and back into Eastern Europe, enveloping the whole continent in just three years. As Barbara Tuchman recalls in her account of "the calamitous fourteenth century": "In a given area, the plague accomplished its kill within four to six months and then faded, except in the larger cities, where, rooting into the close-quartered population, it abated during the winter, only to reappear in spring and rage for another six months."¹⁸ In addition to Europe and North Africa, Asia too fell prey to this unprecedented pandemic, which is believed to have killed a third to a half of the world's population between 1346 and 1353. In parts of Europe, the death toll was even higher, with two-thirds or more of the inhabitants of some towns and villages succumbing. Recurrent outbreaks are believed to have put a brake on population growth for the next three hundred years.

The horror elicited by the Black Death, like the complex etiology of the pandemic itself, was compounded of several elements. For Europeans, who initially lacked any personal experience or cultural memory of the bubonic plague, this included its utter unfamiliarity and the sheer awfulness of its effects, not only for the sufferer but also for those obliged to witness the appalling stench and bodily disfigurement wrought by this dread disease. In humans, *Y. pestis* generally makes its way from the bite site to the nearest lymph glands, either in the neck, under the arms, or in the groin. As Crawford colorfully explains:

Although the immune system is alerted, this microbe has a veritable armament of devices ready to foil the attack. It grows happily inside the macrophages when they engulf and try to kill it, and it tricks the body into overproducing suppressive cytokines that knock out key immune cells. This strategy gains time, and the microbe can multiply to enormous numbers, causing the glands to swell into the characteristic buboes—huge, exquisitely painful abscesses. If the immune attack succeeds in restricting the microbe to the gland, then the victim stands a chance of surviving, particularly if the buboes rupture and discharge their stinking pus. But all too often *Y. pestis* is one step ahead, spilling out into the bloodstream, attacking blood vessels and causing bleeding into vital organs. Skin haemorrhages produce the typical dark spots, called “God’s tokens” because they almost invariably herald the victim’s death.¹⁹

If the pathogenic particles enter directly into a blood vessel at the bite site, the results are less abject, but more certainly and swiftly fatal, producing death from internal bleeding in a matter of hours, as opposed to several days of agonizing illness, but with a 20 to 50 percent chance of recovery.²⁰ Death is also assured if some of the bacteria escape from the glands and travel to the lungs, causing pneumonia. In its pneumonic form, moreover, the plague acquires the ability to move readily and directly from person to person, without rat and flea intermediaries, if any infected droplets of stinking blood-streaked sputum that get sprayed into the air when the sufferer coughs or sneezes are inhaled by somebody nearby. Like it says in the well-known nursery rhyme: “A-tissue, a-tissue, we all fall down.”

Epidemic disease is one kind of eco-catastrophe that brings us up hard and fast against the limits of hospitality. The “categorical imperative of hospitality,” as framed by Jacques Derrida, commands that I make a place for whoever or whatever turns up, “the absolute, unknown, anonymous other,”²¹ without expectation of a return or consideration for my own well-being. In practice, however, this imperative must be held in tension with the responsibility of safeguarding the conditions that enable me to continue to act hospitably toward other others in the future. There are, then, some *arrivants*, strange strangers of a microbial variety, which you are not going to want to allow across the threshold of your body, if you can help it. If you knew about their animal vectors, then you would be quite justified in seeking to keep them at a distance as well (although how to do so is likely to lead to further ethical conundrums, as you quickly discover if

you want to find a humane solution to freeing your home from a colony of black rats who have taken up residence in your roof or wall cavities, such as those that started making a ruckus right beside my desk when I was writing this chapter).

There is no evidence that anybody in the fourteenth century suspected that the pestilence was being spread by rat fleas. It is tempting to wonder whether the causal connection between the agonized deaths of their rodent cohabitants and the sickening of family members might not have been glimpsed earlier if rats had been considered worthy of ethical regard, rather than seen simply as a “pest.” The sixteenth-century version of the German fairy tale of “The Pied Piper,” in which the mysterious Piper lures away all of Hamelin’s children because he has not been paid for ridding the town of rats, provides the only possible hint of the recognition of this link in Europe during the long centuries of repeated plague outbreaks. Many other animals were targeted, however, either as suspected disease carriers or as presaging an approaching visitation, including cats, dogs, geese, pigs, and sundry irritating insects, such as spiders, bed bugs, and grasshoppers (the real culprits evidently being too small and too omnipresent to attract notice).²² Although the actual disease vectors were not understood, the suspicion of cats probably had an evidential basis. Both cats and dogs can harbor plague-carrying fleas, but whereas dogs have developed a fairly good immunity against *Y. pestis*, cats are very susceptible, and they can also become infected by eating infected rodents. If a cat contracts the pneumonic variant, moreover, it can easily pass it on to humans, as has occurred in a number of cases in the United States in recent decades.²³ At the height of the Black Death pandemic, we can safely assume that there must have been an awful lot of very sick felines about, and many of those who died at human hands might well have been spared greater suffering in the grip of the plague (the killing of cats nonetheless also removing a helpful rat predator). The massacre of healthy dogs, though, was a different story. As the human death toll mounted, anxiety grew around the packs of “masterless” canines roving the land. As Mark Jenner has suggested, their mass slaughter might well have functioned psychosocially as a strategy for reasserting Man’s dominion over brute creation at a time when the certainty of human overlordship was being severely shaken.²⁴

The withdrawal of hospitality toward domesticated animals in the face of this ghastly pandemic did not necessarily go hand-in-hand with an enhanced solidarity among fellow humans, however. On the contrary: as a creeping catastrophe that affects individuals and communities in a patchy

way and at a variable pace, no pandemic is likely to engender the outbreak of mutual aid that is fostered by the “throwntogetherness,” as Nigel Clark puts it, of more sudden and less widespread disasters.²⁵ To offer hospitality and a helping hand to another whose malady is assumed to be infectious takes an uncommon degree of courage and selflessness, especially if the disease in question is mysterious in its causation, repulsive in its manifestation, and typically fatal in its effects. In place of the “panic of empathy” elicited globally by witnesses to the Boxing Day Tsunami of 2004,²⁶ for example, the plague prompted something more like a panic of abjection, in which the healthy were afraid so much as to look upon the sick, for fear of being infected through the eye. While many physicians continued to visit, nuns to tend, and priests to perform Last Rights for the sick, Boccaccio’s account of the plague in Florence in the *Decameron* is indicative of the perceived breakdown of human sociability wrought by the pandemic: “One man shunned another . . . kinsfolk held aloof, brother was forsaken by brother, oftentimes husband by wife; nay, what is more, and scarcely to be believed, fathers and mothers were found to abandon their own children to their fate, untended, unvisited as if they had been strangers.”²⁷

While this description of the dissolution of all forms of love—*agapic*, erotic, and even filial—is echoed in many other accounts of the time, it might well be exaggerated. The exacerbation of existing social tensions is nonetheless well attested. Not only were those who were perceived to benefit from the epidemic, including salve sellers, gravediggers, and, ironically, physicians, sometimes targeted; so too were those who had long been suspected of spreading spiritual contamination, as the poor and ill educated fell prey en masse to a particularly nasty paranoid delusion: namely, that the illness could be traced to the malice of the Jews, who were accused of poisoning wells and springs (a charge previously leveled against lepers). The pogroms began on Palm Sunday in 1348 in Toulon in southern France, where the townspeople attacked the Jewish quarter, killing forty people. In the following months, massacres spread beyond France to Spain and Germany, and in 1349 Jews also came under attack in Switzerland and the Low Countries. “Within three years of the arrival of plague in Europe, Jews had been exterminated in or hounded out of hundreds of towns and cities,” according to Philip Alcabes, and in some German cities there were further attacks on Jewish communities, who had survived this foretaste of the Shoah, when plague returned there in the 1380s and 1390s.²⁸ While accusations against Jewish communities in association with the plague became less common in the fifteenth century, “Jews were ex-

pelled from Cologne in 1424 on this basis, and in 1488 a plague outbreak in Saxony was attributed to the arrival from Nuremberg of a converted Jew.²⁹ In Tuchman's analysis, the plague altered the position of Jews in Western Europe for centuries to come, deepening the incipient anti-Semitism that culminated in the Nazi death camps. The myth of "well-poisoning and its massacres had fixed the malevolent image of the Jew into a stereotype. Because Jews were useful, towns which had enacted statutes of banishment invited or allowed their re-entry, but imposed new disabilities. Former contacts of scholars, physicians, and financial 'court Jews' with the Gentile community faded. The period of the Jews' medieval flourishing was over. The walls of the ghetto, though not yet physical, had risen."³⁰ As in Kleist's fictitious earthquake in Chile, then, the eco-catastrophe initially wrought by this historical disaster was compounded by the narrative fabrication of a scapegoat.

But there were other stories and other responses. While secular authorities sometimes condoned this eruption of anti-Jewish violence, and certainly benefited from the seizure of Jewish property, the church officially opposed it. Pope Clement VI not only issued two edicts in 1348 prohibiting the killing and forcible conversion of Jews, he also denounced those who blamed the plague on them as having fallen under Satan's sway, pointing out that Jews too succumbed to the disease.³¹ While some speculated as to whether the plague was sent by the devil, the theologically approved interpretation of the pandemic followed the script of the punishment paradigm, attributing it ultimately to divine displeasure toward a sinful humanity and presaging the Final Judgment. This dominant narrative informs the vernacular naming of the disease: the French *peste*, like the German *Pest*, carries the connotation of a scourge, while the English *plague*, derived from the Latin *plagare*, "to strike," implicitly construes the pandemic as a blow from on high, placing it in the biblical lineage of the various disasters said to have been visited upon the Egyptians on account of their refusal to liberate the enslaved Hebrews in Exodus.

As in the case of collective calamities wrought by geophysical extremes, the officially recommended response was prayer, penitence, and the mending of wicked ways. And in this case, too, the punishment paradigm provided the opportunity for various forms of social critique. Among the usual litany of sins, that of *superbia* (pride or arrogance), to which the growing urban elite was seen to be especially prone, was often highlighted. Accordingly, ordinances against the plague regularly listed modest dress among their moral prophylactics. Opinions differed as to whether God's

wrath had been aroused by the waxing wickedness of humanity in general or whether specific groups were primarily at fault. One fifteenth-century chronicler, for example, attributed the outbreak to the crimes allegedly committed by the Genoese in Crimea, who are said to have joined the heathens in plundering a Christian city, outdoing even the Saracens in their mistreatment of fellow Christians.³² The failure of neighbor-love and, in some cases, fear of the plague itself were also targeted, meaning that self-protective flight was construed by some as counterproductive in the long run. The prudent Martin Luther, by contrast, argued that since the impulse toward self-preservation was God-given, endeavors to remove oneself from the risk of infection were entirely justified, so long as this was compatible with one's family and communal responsibilities.³³

Regardless of such theological debates, it appears that those who could flee generally did, and as these were primarily among the physically and financially better off, the poor, elderly, ailing, and disabled were all too often abandoned to their fate. As the crisis deepened, some joined roving groups of flagellants, engaging in bloody spectacles of prophylactic self-scourging and, in some cases, Jew bashing, while others indulged in drunken and disorderly outbursts of "apocalyptic hedonism."³⁴ In many areas, moreover, food scarcity increased for lack of labor to bring in the harvest and get it to market, leading to malnourishment, especially among the urban poor, compromising their ability to recover from infection and thereby adding to the death toll.³⁵ During later epidemics, this problem was exacerbated by the reduced crop yields and severe weather conditions of the Little Ice Age, which began to set in during the fifteenth century and, after a brief warming period, peaked right around the time of the last big outbreak in Western Europe in the mid-1660s.³⁶

From the time of the Black Death through to the eighteenth century, mainstream religious understandings of the pandemic were held to be compatible with medical ones, and moral injunctions were regularly combined with practical measures intended to reduce the spread of the disease and deal with its consequences. Medical treatises and treatments remained largely indebted to Hippocrates and other ancient authorities, notably Galen, Ptolemy, and Avicenna Averroes and Albertus Magnus. Suspicion fell primarily on bad air ("miasma"), whether related to astrological phenomena or terrestrial conditions, such as the poisonous vapors believed to rise from swamps, seas, and underground. Observations of the differential rate of infection led some, such as the fifteenth-century French physician Jacques Despars, to postulate person-to-person infection

through the intermediary of the air, bodily contact, or tainted objects.³⁷ Those, such as Benjamin Marten in his “New Theory of Consumption” (1720), who revived the ancient theory of *contagion vivum*, linking infection to the agency of the kind of “animalcules” recently rendered visible by Anton van Leeuwenhoek’s microscope, nonetheless remained in the minority until the ascendancy of germ theory in the second half of the nineteenth century. Practices such as quarantining goods and people, and isolating the sick, which began to be institutionalized during the first plague pandemic, nonetheless testify to the recognition of certain material vectors of infection. The homes of the sick were required to be marked with a cross, plague-ridden towns and villages were sealed off, and by the early 1700s a massive nineteen-hundred-kilometer *cordon sanitaire* had been established along the border between the Austro-Hungarian Empire and the Turkish and Slavic lands to the east, which, not entirely unreasonably, continued to be feared as the source of infection. Plague only departed from Eastern Europe in the mid-nineteenth century, by which time a new and continuing, if currently contained, epidemic was breaking out in China.

Assessments of the long-term impacts of the plague in Europe vary, but there is little doubt that they were profound. Many historians believe that the Black Death hastened the decay of feudalism, as widespread depopulation increased both the demand for rural labor and the amount of land available, fostering the emergence of a class of yeoman farmers. Labor shortages meant that wages rose, contributing to the growth of the money economy. Meanwhile, the sphere of operation of the state was enlarged through such administrative measures as the establishment of state-run “pesthouses,” the compilation of mortality lists, the creation of municipal health departments, the collection of plague taxes, and the increase in border control. In many respects, such responses to the experience and threat of plague epidemics pertain to the emergence of what Michel Foucault identifies in his *History of Sexuality* as a modern form of “biopolitics”: a regime of governance that operates on and through the body, with a view to wedding social control to the maximization of productivity. More generally, as Alcabes observes, “The institutions that would contribute to the evolving public nature of civil society were shaped in no small part, by plague.”³⁸ Equally importantly, it undoubtedly lent impetus to empirical investigations into the material dimensions of human health and sickness, hastening the emergence of modern medical science. In my view, the trauma of the plague, in conjunction with the rigors of the Little Ice Age, is also likely to have conditioned the way in which Sir Francis Bacon

conceived of his “new organ of knowledge”: namely, as a project oriented not only toward enhanced human knowledge of but also power over the troublesome natural world.

As Theodor Adorno and Max Horkheimer observe in their *Dialectic of Enlightenment*, the “happy match,” as Bacon termed it, “between the mind of man and the nature of things that he had in mind is patriarchal: the human mind, which overcomes superstition, is to hold sway over a disenchanting nature.”³⁹ The patriarchal and anthropocentric, or more precisely, “anthroparchal,”⁴⁰ underpinnings of modern scientific endeavor, as it was framed by Bacon and Descartes in the seventeenth century, has come in for considerable ecofeminist critique over the past three decades, beginning with Carolyn Merchant’s landmark work on the Scientific Revolution, *The Death of Nature* (1980). It should be stressed that critical ecofeminists such as Merchant do not claim that women are naturally “closer to nature” or that modern science is inherently “masculine” and necessarily “bad.”⁴¹ Their critique is directed, rather, toward the cultural assumptions and social ideologies that infected and inflected the institutionalization of empirical inquiry into “Nature’s secrets” in the modern era. The prehistory of these assumptions, which implicitly set Man, mind, and spirit apart from, and above, Woman, body, and matter, while identifying the truly human with the former, have been variously traced to Greco-Roman rationalism, medieval reinterpretations of the biblical notion of human dominion, and Renaissance humanism.⁴² Yet the powerful appeal of the Baconian project of technoscientific mastery, which, as Merchant stresses, dovetailed nicely with the interests of mercantile and later industrial capitalism, also needs to be understood in light of the truly dreadful depredations of the plague over several centuries, during which Northern Europe was simultaneously plunged into a period of severe and unstable weather conditions. In view of the traumatic historical experience of utter subjection to some distinctly dire other-than-human agencies, the prospect of expanding the sphere of human self-determination by gaining greater control over the physical conditions of our existence must have seemed profoundly alluring (as indeed it probably does to most people today). What emerged from the work of those who followed Bacon, moreover, was in some cases not so much the triumphalism of conquest as the disquieting discovery of kinship: long before Darwin, for example, Edward Tyson (1651–1708) was startled and moved by the resemblance that he discovered between himself and the chimpanzee whom he studied, both living and dead.⁴³ As discussed in the last chapter, the rise of physico-theology from the end of the seventeenth

century—interestingly, among a generation in Britain whose parents had witnessed the final outbreak of the plague in England (thus far) that had ravaged London in 1665—held out the promise that greater understanding of Nature’s laws would enable humanity to exercise a better stewardship of creation: as wise rulers, that is, rather than as reckless tyrants.⁴⁴

While physico-theological confidence in the stability, lawfulness, and beneficence of a divinely authored Nature was beginning to look a little shaky by the late eighteenth century, some writers and philosophers of the Romantic period were attracted by the idea that human moral and techno-scientific advancement could, in time, bring about an “active imparadising” of the Earth.⁴⁵ Among them was Percy Bysshe Shelley, who, in his ecotopian poem “Queen Mab” (1813), for example, envisages an emancipated humanity living in harmony with other creatures, as “an equal amidst equals” (viii, line 226), in a universally habitable (and specifically, temperate) earth from which, echoing the eschatology of Isaiah, all wildness and discord have been eradicated, thanks to a felicitous marriage of Mind and Nature, in which the former has nonetheless retained its “omnipotence” (line 236).⁴⁶ It is this vision of the pacification of the entire Earth under the sway of human mental sovereignty that Mary Shelley discloses as delusional and even self-defeating in her apocalyptic plague novel, even while honoring the beloved husband, who had been drowned in the Mediterranean Sea just four years before she penned it.

Mary Shelley was all too familiar with the depredations of disease. Her own mother, the early feminist Mary Wollstonecraft (1759–97), had died within days of giving birth of “womb fever” (*puerperal septicemia*, a common complication of childbirth, currently treatable with antibiotics). Mary and Percy’s second child, William (1816–18), died of malaria, and their third, Clara (1817–18), of dysentery. Mary’s niece Allegra (1817–22), the daughter of her stepsister, Claire Clairmont, and Lord Byron, died of typhus. Their acquaintance John Keats (1795–21), whom they greatly admired as a poet, died of tuberculosis the year before Percy drowned. And in 1824, their close friend Byron (1788–1824) died of an unidentified fever contracted while commanding a Greek army in the independence movement against the Ottoman Empire. At the time that Mary Shelley embarked upon *The Last Man*, moreover, a dreadful new disease was threatening to go global. Having broken out across India in 1817 a new strain of cholera had been spread to Arabia by British troops from the Raj in 1821 and was making its inexorable way toward the imperial homeland. Shelley, meanwhile, was living in London in a state of considerable grief

and loneliness. In addition to the children lost to illness, her first daughter had died unnamed within days of being born prematurely in 1815, and Mary had also had a miscarriage from which she too nearly died, in 1822, shortly before Percy's drowning. One son only, Percy Florence (1819–89), remained to her, but he could not provide the companionship she craved, as indicated by a telling diary entry from May 14, 1824: "The last man! Yes I may well describe that solitary being's feelings, feeling myself as the last relic of a beloved race, my companions, extinct before me."⁴⁷

By the time her new novel appeared in 1826, the topos of "the last man," to which she alludes in her diary, was already looking somewhat jaded. "Since 1823," as Morton Paley records, "the literary world had been preoccupied with a controversy about just who had invented the Last Man,"⁴⁸ following Francis Jeffrey's observation in the *Edinburgh Review* that the best imagery in Thomas Campbell's apocalyptic poem of that name had been lifted from Byron's "Darkness" of 1816. When Campbell countered that Byron had pilfered the concept from him, and that he had been prompted to get his own version out before yet another poet (Thomas Lovell Beddoes) published his, his claims were met with mirth. As one anonymous commentator observed in the *London Magazine*, Campbell's assertion that he was the originator of this topos was ridiculous, "the idea of the Last Man being most particularly obvious, or rather absolutely common-place, and a book with the taking title of *Omegarius* [sic.], or *The Last Man*, having gone the rounds of all circulating libraries for years past."⁴⁹ The book referred to here was actually entitled *Omegarus and Syderia, a Romance in Futurity*, published anonymously in 1806, and it was a translation of Jean-Baptiste François Xavier Cousin de Grainville's prose poem *Le dernier homme* (The last man) of 1805.

Mythic visions of the end of the world are ancient and transcultural, but interest in the figure of the last man around 1800 was stimulated also by new ways of thinking about the history of life on Earth emerging from empirical research. Investigations of rock strata had led some in the nascent field of geology to postulate planetary catastrophe as a vehicle of terrestrial transformation, while the fossilized evidence of now-extinct species suggested that such "revolutions" might have played an important role in the generation of the existing family of life. Even among those who posited a more gradual process of evolution, the recognition that entire species had died out in the past opened the possibility that humans too could one day become extinct. Kant, for example, was moved to speculate privately:

If our globe (having once been dissolved into chaos, but now being organized and regenerating) were to bring forth, by revolutions of the earth, differently organized creatures, which, in turn, gave place to others after their destruction, organic nature could be conceived in terms of a sequence of different world epochs. . . . How many such revolutions (including, certainly, many ancient organic beings no longer alive on the surface of the earth) preceded the existence of men, and how many . . . are still in prospect, is hidden from our inquiring gaze.⁵⁰

In addition to this disquieting historical record, a number of alarming natural phenomena, in conjunction with emerging anxieties about the impact of human industrial activities, contributed to the apocalyptic imaginings of the Romantic period. Among these were the “Great Hurricane of 1780,” the largest of three cyclonic storms to strike the Caribbean that year; a series of five strong earthquakes that shook the Calabrian region of Italy in 1783; a major eruption of the Loki volcano in southern Iceland on June 8 of that same year; earthquakes in Equador and Sumatra in 1797 and in Crete, in 1810; and the eruption of the Tambora volcano on the Indonesian island of Sumbawa on April 10, 1815. As Jonathan Bate has demonstrated, the bad summer that Byron and the Shelleys experienced when they were staying on Lake Geneva the following year can be attributed to the temporary global dimming occasioned by this massive eruption, which is also estimated to have killed some eighty thousand people in the immediate vicinity, as well as occasioning cooler temperatures, failed harvests, and food shortages in faraway Europe for several years afterward. It was in these unseasonably inclement conditions that Mary Shelley was coaxed into writing *Frankenstein* in response to a friendly competition as to who could write the best gothic tale. And, in Bate’s view, it was at least in part this bleak summer that prompted Byron’s apocalyptic vision of the complete extinction of all life on Earth in his “last man” poem, “Darkness” (1816).⁵¹

Shelley’s *Last Man*, like the poems of de Grainville and Byron, is, as Paley puts it, an “apocalypse without millennium,” in that the cataclysmic event upon which the novel turns does not follow the biblical script of redemptive violence. However, what makes Shelley’s take on this tired topic both highly innovative and, from a humanistic perspective, particularly disturbing is that the ending that she envisages is reserved exclusively for humankind. De Grainville, Byron, and Campbell all locate their

last men on a universally blighted planet. Shelley, by contrast, vouchsafes Earth's other-than-human life forms a renewed flourishing by having their self-proclaimed overlord excised from creation, with something approaching surgical precision, by means of a pandemic that is fatal for humans alone. Not surprisingly, the novel did not go down well with her contemporaries and was variously condemned as "a sickening repetition of horrors," the "offspring of a diseased imagination, and of a most polluted taste," and "an abortion."⁵² Although it was reprinted in Paris in 1826 and Philadelphia in 1833, it did not enjoy anything approaching the success of her first novel, *Frankenstein* (1818), and actually went out of print between 1833 and 1965. Scholarly interest in *The Last Man* only took off in the closing decades of the last century, beginning with the landmark feminist discussions of the novel by Sandra Gilbert and Susan Gubar in *The Madwoman in the Attic* (1979) and Anne K. Mellor in *Mary Shelley: Her Life, Her Fiction, Her Monsters* (1988). In addition to being republished in several new critical editions,⁵³ *The Last Man* has now also made its way, albeit in a substantially altered guise, into popular culture in James Arnett's 2008 film of that name, one of countless more-or-less fanciful and angst-ridden imaginings of humanity's demise to greet the new millennium. As Barbara Johnson observed in 1993, albeit for somewhat different reasons from those that I will advance here, this novel, which was so untimely in its day, has become "ardently timely" for our own era:⁵⁴ a time, in my analysis, in which the likelihood of a planetary pandemic of cataclysmic proportions, notwithstanding the wonders of modern medicine, has only increased in tandem with, and to a considerable extent as a consequence of, the number and diversity of fellow creatures who have come to suffer at human hands.

Not unlike "The Earthquake in Chile," Shelley's novel features a narrator whose perspective is subtly subverted by the tale he tells. The story is narrated in the first person by an Englishman named Lionel Verney, who, as we discover at the end of three long volumes, is writing in the year 2,100 in the depopulated city of Rome—an apt place to reflect, as he does both explicitly and implicitly, upon both the unrealized promise and the fatal pathology of a civilization that traces its origins to Greco-Roman antiquity; a civilization that had now been abruptly terminated by the demise of the collective entity that it had elevated to quasi-divine status: namely Man.

Verney's narrative begins autobiographically, somewhat in the manner of a bildungsroman, or novel of experience, with the story of how he and

his sister, Perdita, who had been orphaned and impoverished at an early age, were befriended by the gracious son and daughter, Adrian and Idris, of the last English monarch, formerly a close friend of their dissolute father. Foiling the plans of the erstwhile queen, now Countess of Windsor, who had tried unsuccessfully to persuade her republican son to reclaim the throne and who now sought to marry her daughter into the Austrian royal family from whence she herself hails, Idris elopes with Lionel. Perdita, meanwhile, marries a close friend of Adrian's, Lord Raymond, recently returned as a military hero from a new Greek war of independence against the Turks. Adrian remains single, having been rejected by the beautiful and exotic Greek princess Evadne, who is enamored of Raymond, the trauma of which renders him temporarily deranged. Following Adrian's recovery, they all spend several years of private felicity on the former royal estate at Windsor, England having peacefully transitioned to a republic following the king's abdication in 2073. This happy period of pastoral retreat ends with Raymond's appointment as Lord Protector, drawing the protagonists into the political life of the nation and causing the narrative to morph into the genre of political romance. Raymond institutes an ambitious program of reform, but his administration is derailed by a chance reunion with Evadne, now widowed and living in poverty in London, who turns out to be the anonymous creator of the architectural designs for the new national gallery that he aspires to have built. Raymond commits himself to restoring Evadne to society, but his secret, albeit chaste, visits to her are discovered by Perdita, who assumes their liaison to be adulterous. In his fury, Raymond abandons not only his wife but also his role as Protector, returning instead to the Greco-Turkish war, with Adrian in tow. The first volume ends, following Adrian's wounding and repatriation, with a Greek victory; but this good news is overshadowed by reports of Raymond's disappearance.

In the second volume, the narrative horizon expands yet further from the national to the international scene, with Lionel and a remorseful Perdita in search of Raymond in the contested borderland between the Eastern and Western worlds. Securing Raymond's release from Turkish imprisonment, Lionel returns with him to Athens, only to join him on a new military campaign, the objective of which is the capture of Constantinople. Raymond succeeds in taking Stanboul, as it is known to the Turks, but at great cost: not only does he die in the explosion that is mysteriously triggered by his forced entry into the city, but this also appears to open the way for the Plague, which, in consort with starvation, had killed all the in-

habitants of the besieged city, to begin its westward advance. At this point, the narrative takes a decidedly gothic turn. Raymond's death amid "fire, war, and plague" had been prophesied by Evadne, whom Lionel encounters dying on the battlefield, dressed as a soldier. When Perdita commits suicide rather than be wrested away from Raymond's graveside by Lionel, the narrator is left to return to England alone. A year of peace throughout the world, and the advancement of egalitarian and democratic sociopolitical reform in England, appears to open the way for the realization of Adrian's humanistic vision (one that bears a distinct similarity, it might be noted, to that of the author's deceased husband). Elsewhere, however, the Plague has been spreading. When it crosses the English Channel, the radical democrat Ryland, who had succeeded Raymond as Protector, abandons his post in the vain hope of saving his own skin, and the selfless Adrian assumes command of his dying nation. Lionel, whose oldest son succumbs to the Plague, also contracts the disease but recovers and joins Adrian in his efforts to limit its spread and maintain a hospitable social order in the midst of the unfolding calamity.

The third volume begins with the death of Idris and the departure of the remnant English for warmer climes in southern Europe, where they imagine that it will be easier to survive in the wake of the collapse of their wider society. Their numbers dwindle as they journey across the increasingly depopulated continent. Finally, only Adrian and Lionel, together with the latter's infant son, Evelyn, and Raymond's and Perdita's orphaned daughter, Clara, remain alive. Ironically, having survived the depredations of the pandemic, which has finally come to an end, little Evelyn dies of typhus, while Clara and Adrian drown attempting to sail from Italy to Greece. At the time of writing, Lionel believes himself likely to be the titular "last man." He nonetheless hopes that this might not be so and, in the final pages of the novel, describes his intention to set out on a boat, together with a canine companion, some provisions, and a few books, to circumnavigate Earth's continents in search of other survivors.

Verney's narrative, long-winded as it is, is not the whole text of *The Last Man*, however. Whereas his tale is composed for the most part in the past tense, it is prefaced by a fictional "Author's Introduction," which foregrounds the novel's orientation toward a possible future. According to this frame narrative, the work was inspired by the author's discovery of fragments of prophetic verse in several languages, both ancient and modern, traced on "leaves, bark and other substances," that she and an unnamed companion had found—along with the "perfect snow-white skeleton of

a goat,” which had evidently fallen through the opening above—deep in the cave of the Cumaean Sybil on the Bay of Naples. Having “made a hasty selection of the leaves, whose writing one at least of us could understand,” the two then set about “deciphering these sacred remains,” a task that the author was subsequently left to pursue alone, following the loss of her “matchless companion.” While acknowledging that these fragments “were unintelligible in their pristine condition,” the author nonetheless insists that, despite the not inconsiderable work of selection, translation, linking, and ordering involved in this editorial process, “the main substance rests on the truths contained in these poetic rhapsodies, and the divine intuition which the Cumaean damsel obtained from heaven.”⁵⁵ Verney’s past, then, is presented to Shelley’s readers as their potential future. Shelley, presumably, does not expect us to take her fictitious “Author’s Introduction” for real, but she does implicitly claim for this early work of speculative fiction a prophetic dimension. As such, it does not aspire to predict so much as to warn. In transforming the archaic verse fragments into the form of a modern prose novel, the author displaces the voice of the ancient female seer into that of a future male narrator, whose perspective is disclosed as both partial and conflicted. However, as Stephen Goldsmith recalls, the Sibyl too was double voiced, in that her prophecies were said to have come from the male god Apollo, “who literally inspires her. Passing through the Sibyl, his breath transforms her into his medium.”⁵⁶ Similarly, in *The Last Man*, Verney’s voice becomes the medium through which Mary Shelley imparts a vision that the fictional author attributes to the legendary Sibyl, one that is in many respects at odds with the worldview professed by the fictitious narrator himself.

Verney opens his account with a nostalgic recollection of the world that is no more:

I am the native of a sea-surrounded nook, a cloud-enshrouded land, which, when the surface of the globe, with its shoreless ocean and trackless continents, presents itself to my mind, appears only as an inconsiderable speck in the immense whole; and yet, when balanced in the scale of mental power, far outweighed countries of larger extent and more numerous population. So true it is, that man’s mind alone was the creator of all that was good or great to man, that Nature herself was only his first minister. England, seated far north in the turbid sea, now visits my dreams in the semblance of a vast and well-manned ship, which mastered the winds and rode

proudly over the waves. In my boyish days she was the universe to me. When I stood on my native hills, and saw plain and mountain stretch out to the utmost limits of my vision, speckled by the dwellings of my countrymen, and subdued to fertility by their labours, the earth's very centre was fixed for me in that spot, and the rest of her orb was as a fable, to have forgotten which would have cost neither my imagination nor understanding any effort. (*LM*, 5)

Verney's idealized image of England is structured around a series of interlinked oppositions: land versus sea; bounded places ("nook," "ship") versus undifferentiated space ("shoreless ocean"); the domesticated ("plain and mountain . . . subdued to fertility") versus the wild ("trackless continents"); mind ("mental power") versus matter (geographical "extent"); Man versus Nature, which as "first minister" is ambiguously construed both as a law-giver and as subservient, "ministering" to human wants. These oppositions compose a worldview in which the human subject—one marked as English, of "superior mental power," and implicitly masculine—is construed as the lord and master of all he surveys. Introducing himself in terms that are at once ethnocentric, androcentric, logocentric, and anthropocentric, Verney's self-stylization provides a textbook example of what feminist ecophilosopher Val Plumwood terms the "logic of colonisation," underpinning dominant constructions of human identity within Western modernity.⁵⁷ In this, Verney's voice mimics that assumed in much of the male-authored "last man" poetry of the 1820s. As Steven Goldsmith has observed, these texts typically imagine the end of humanity in such a way as to "reassuringly confirm . . . the epistemological status quo" by salvaging human consciousness in an immaterial beyond, even as they imagine the obliteration of the human species.⁵⁸ Shelley's novel, by contrast, ends up undoing every binary that is implicit in its ideologically loaded opening. In this way, the subaltern wisdom of the Sybil, as appropriated by the implied female author, might be seen to undercut the privileged consciousness of her male narrator, allowing a radically different view of human identity to emerge from a narrative that stages a catastrophic "return of the repressed."⁵⁹ In my reading, however, what "returns" is not "nature" or "the feminine," as in Jane Aaron's reading, but a gender-bending monster, largely of human making.

As a truly apocalyptic event, which, recalling James Berger's definition, in its disruptive moment clarifies and illuminates "the true nature of what has been brought to an end,"⁶⁰ the catastrophic pandemic reveals

the narrator's earlier view of England's splendid isolation to have been utterly illusory. While England is the last nation of the world to succumb to infection, its socioeconomic order, underpinned as it was by the "busy spirit of money-making, peculiar to our country" (*LM*, 200), has already largely collapsed due to the introduction of quarantine regulations that have interrupted international trade. Moreover, while the narrator persists in demonizing the frequently feminized but ambivalently gendered Plague as an external agent of humanity's demise, even likening it at one point to the satanic "Arch-Felon" of Milton's *Paradise Lost* (195), it is made clear that the disease only reaches pandemic proportions on account of the interconnectivities engendered by commercially motivated colonial conquest. Recalling that the Britain of Shelley's day had been enriched by the only recently outlawed slave trade, it is perhaps not insignificant that she identifies the African continent as the original source of the pandemic. Moreover, Verney is shown to become infected through direct bodily contact (the only such instance in the novel) with "a negro half clad, writhing under the agony of disease," who was among the many immigrants given refuge in Windsor Castle and who held him "with a convulsive grasp" (268). Revealing not only England's dependence on the rest of the world but also the shared corporeal or rather "trans-corporeal" vulnerability of erstwhile masters and slaves, colonizers and colonized, Shelley's Plague, as Kevin Hutchings has observed, "because of its leveling effect . . . becomes, to a certain extent, an emblem of social justice carried out on a global scale."⁶¹ Verney is almost the only character who is shown to recover from infection. While his revulsion toward the dying African American has distinctly racist overtones, it is, as Anne K. Mellor suggests, perhaps precisely "from this unwilling but powerful embrace of the racial other . . . [that] Verney . . . becomes immune to the plague."⁶² Although Verney insists that the "plague was not what is commonly called contagious, like the scarlet fever, or extinct small-pox" (185), the physical intimacy of this embrace appears to effect a kind of immunization.⁶³ As mentioned previously, the disease from the East that was most worrying to Europeans in the 1820s was cholera, which was beginning to go global as a consequence of British colonial policies that were, in turn, entwined with the process of industrialization in Britain.⁶⁴ The association between imperialism and disease was beginning to be widely recognized at this time, but, in Alan Bewell's analysis, *The Last Man* was "one of the first major works on the historical ecology of disease," which discloses "the important role empire has played in the global spread of disease."⁶⁵ While the original outbreak of Shelley's

fictional Plague is traced to Africa, the colonial venture that provides the conduit for the entry of the disease into Europe is located in the Near East. Having expelled the Islamic invaders from Greece, Raymond, who aspires to “subdue all Asia” (*LM*, 43), frames his exploits as a struggle of “civilization” against “barbarism” (121). Verney nonetheless reveals that “every European nation” had a commercial interest in the success of the Greek cause (127).

Verney’s account of the military campaign that he witnesses also undercuts Raymond’s imperialistic glorification of his mission by foregrounding the high price of warfare in terms of both human morality and the fertility of the land. The decisive battle is fought on the plain between Kishon and Rodosto, a part of Thrace that “had been so long a scene of contest, that it had remained uncultivated, and presented a dreary, barren appearance” (*LM*, 143). Surveying the carnage that remained in its wake, Verney writes, “I turned to the corpse-strewn earth; and felt ashamed of my species” (144). This passage echoes Adrian’s reflections on the earlier campaign in which he had participated, when an entire town was massacred and he witnessed a Moslem girl being raped by two Greek soldiers, “perhaps good men among their families,” whose “brutal appetites . . . were changed by the fury of the moment into incarnated evils” (128).⁶⁶ Ironically, the war that is being prosecuted in the name of “civilization” is disclosed as brutalizing the combatants. Similarly, Verney comes to recognize that in participating in Raymond’s bid to liberate Constantinople, his “mind had yielded itself a willing slave to the state of things presented to it by its fellow-beings; historical association, hatred of the foe, and military enthusiasm held dominion over me” (144). Verney’s insight into the oppressive and blinding force of ideology is facilitated by the expansion of his consciousness that attends his contemplation of the “evening star, as softly and calmly it hung pendulous in the orange hues of sunset” (144). Similarly, if less beneficently, it is the more-than-human horizon opened up by the advancing Plague, which—not unlike the Spanish flu epidemic of 1918, which helped to hasten the end of the First World War—intervenes in the epochal struggle between East and West, disclosing the parochialism of this human-all-too-human conflict.

It is among the battle-dead, in the gathering darkness of nightfall, that Verney is accosted by the mortally wounded Evadne. Hearing of her demise and dying curse upon him, Raymond becomes increasingly melancholy, while starvation and disease proceed to lay waste to the besieged inhabitants of Stanboul. Significantly, Raymond disregards not only the

better judgment of his friend, the entreaties of his wife, and the trepidation of his troops, but also the resistance of his horse and the opposition of his dog, to ride triumphantly into the disease-ridden city, thereby triggering the explosion that kills him outright and releasing the contagion that proceeds to ravage the rest of the world. Verney, who abductively intuits more than he admits consciously, prefigures this outcome in the dream that assails him when he succumbs to his bodily needs and falls asleep while searching for Raymond amid the rubble.⁶⁷ Here, his friend appears to him “altered by a thousand distortions, expanded into a gigantic phantom, bearing on its brow the sign of pestilence” (*LM*, 161). When Verney sleeps, it seems, the Sibyl speaks, disclosing the socioecological character of the pandemic, which the narrator has such difficulty confronting consciously. That Raymond bears the sign of Plague on his forehead suggests metonymically not only that the human mind is dependent upon “our animal mechanism” (234) but also that it can become a fatal liability: namely, if our “mental creations” (315), such as, in this case, Raymond’s desire to win fame by planting “the Grecian standard on the height of St. Sophia” (155), are privileged over our bodily being and earthly environs, which for Raymond have become no more than “a tomb, the firmament a vault, shrouding mere corruption” (149). This overvaluation of ideation, or the realm of the symbolic, and the frequently mentioned “self-will” that it engenders, proves fatal for a number of other characters as well, including his wife, Perdita, who commits suicide rather than be separated from his graveside, and their daughter, Clara, who drowns with Adrian in a storm while attempting a rash sea crossing to visit her parents’ tomb in Greece.

Surviving this disaster also, thanks not to any mental effort or feat of willpower but rather to the “instinctive love of life” that “animated” his creaturely being (*LM*, 354), Verney finds enduring consolation neither in wild nature, which is flourishing anew in the absence of human domination, nor amid the material remains of human (and specifically Western) civilization in the depopulated city of Rome. Significantly, his attempt to befriend a family of wild goats is met with fear and hostility. There is a contrastive echo here of the skeletal remains found in the cave of the Cumaean Sybil, of which the author observes: “Ages perhaps had elapsed since this catastrophe; and the ruin it had made above, had been repaired by the growth of vegetation during many hundred summers” (2–3). The individual “catastrophe” of this lone goat’s fall to its death, together with the reparation of the breach effected by the vegetation, both prefigures

and contrasts with the collective human catastrophe prophesied by the Sybil and narrated by Verney, in which other-than-human life is shown to be recovering well, following the demise of a fallen humanity. That the animals in question in both cases should be goats, however, also carries a further connotation: that of Arcadia. In the wake of the collapse of civilization, Verney briefly fantasizes an Edenic “return to nature”; but the goats wisely recognize him as a potential predator, shattering his anthropomorphic illusions. The narrator does nonetheless find, or rather, is found by, an other-than-human companion. Having previously been inspired by Adrian to abandon his “savage” existence as an untutored shepherd and poacher in the Lake District and having gained admittance “within that sacred boundary which divides the intellectual and moral nature of man from that which characterises animals” (21), Verney ends as he began: alone, with a dog. There is a crucial difference, however, in that his new *modus vivendi* is neither savage nor civilized, but integrally natural-cultural, albeit confined to the miniature more-than-human world of the boat, in which he and the dog who has joyously befriended him are left circumnavigating earth’s coastlines in search of other survivors. The demise of Man (as defined in accordance with the logic of colonization), it is hinted, might just open the way for the emergence of a new kind of human-nonhuman collectivity, albeit not in an idealized world, such as Percy Shelley envisaged in “Queen Mab,” from which all conflict and difficulty had been expunged, but in a queer passage toward an uncertain future.⁶⁸

As well as disclosing the transnational, transpecies, and trans-corporeal connectivities that are in play in both the etiology and the outcome of the pandemic, the capacious form of this novel allows Shelley to explore diverse human responses to the unfolding catastrophe with a degree of detail and insight that should qualify *The Last Man* as compulsory reading in all of the currently burgeoning disaster management courses. These range from opportunistic looting and apocalyptic hedonism through to pragmatic self-organization on the part of communities and selfless kindness among some individuals. New structures and styles of leadership emerge, as the wheeler-dealer politics of everyday governance are displaced by the moral guidance provided by the selfless Adrian, who only now assumes the role of Protector that his friends had hoped he would take on earlier, working tirelessly to prevent panic and criminality, to maintain public hygiene and civil order, and to protect the healthy and aid the sick. As Vicky Adams observes, Adrian’s ethic of care stands in stark contrast to Raymond’s he-

roic drive to mastery, which is manifest not only on the battlefield but also in his autocratic and technocratic efforts to manufacture a perfect commonwealth.⁶⁹

While nationalist and racist prejudices condition initial reactions to the outbreak, including Verney's, and resurface in the face of an influx of refugees, these are ultimately rejected by the narrator and other (if not all) survivors, in favor of the recognition of a common humanity. Faced with escalating conflict between the English and a rag-tag army of marauding Irish and Americans, Adrian manages to persuade both sides to lay down their weapons, exhorting them, over the body of a slain combatant, to "throw down those tools of cruelty and hate; in this pause of exterminating destiny, let each man be brother, guardian, and stay to the other" (*LM*, 241). As Peter Melville observes, in its representation of England as an asylum, the novel is "committed to representing a form of hospitality that is fuelled less by optimism than it is by an irrepressible obligation to welcome the other even when all hope is lost, even when to do so might lead to one's destruction."⁷⁰ In practice, however, there are limits to the asylum that can be offered: Adrian arranges for some of the "invaders" to be housed in deserted villages, but others are sent back to Ireland, and "any increase of numbers prohibited" (241).

Meanwhile, Ryland's endeavors to legislate an egalitarian society are trumped by the pandemic, as the propertied are persuaded to fell their forested hunting grounds for dwellings and turn their parks and flowerbeds over to subsistence food production. As the mortality rate rises, moreover, the "products of human labour" become more evenly distributed: "We were all equal now; magnificent dwellings, luxurious carpets, and beds of down were afforded to all" (*LM*, 253). This equality, wrought by catastrophe, is nonetheless shadowed by the Malthusian equivalence engendered by the disease, obliterating individuation by reducing all members of the population to the status of a statistic in the growing death toll: "We were all equal now; but near at hand was an equality more levelling, a state where beauty and strength, and wisdom, would be as vain as riches and birth" (253).⁷¹ As centralized governance breaks down, Verney is deputed to foster improvisational forms of what would today be termed "adaptive governance" under the leadership of able local figures, who would never have had the chance to enter government under normal conditions, including nonelite youths and women (215–16).

Gender assumptions, along with sexual norms, are put under pressure in other ways, too. Verney, for example, is forced by grief at the death of

his wife to acknowledge emotions that he had previously considered exclusively womanly (*LM*, 285). He also comes to accept the homoerotic depths of his feelings for Adrian: while repressing his “girlish ecstasies” and not daring to “embrace” him, Verney nonetheless admits to having thrown himself on the ground before his friend to “kiss the dear and sacred earth he trod” (323). Experiencing the vulnerability attendant on the bodily dimension of human being also leads Verney to open his heart to other-than-human suffering (248). And as he witnesses the colonization of erstwhile human spaces by a plethora of flourishing and newly liberated plants and animals, he is finally brought to question the anthroparchal “arrogance” of calling ourselves “lords of creation, wielders of the elements, masters of life and death” (184).

Shelley’s subversion of the patriarchal and anthroparchal assumptions announced in the opening paragraph—one that acquires a distinctly ironic undertone in light of the rest of the narrative—does not culminate in a simplistic reversal of the reason-nature dualism, however. In my reading, it points rather to the necessity of a process of ecological enlightenment, in which the nonhuman is resituated as agentic, communicative, and ethically considerable, while human consciousness is recognized as embodied and interconnected with a more-than-human world that is neither fully knowable nor entirely controllable. Ecological enlightenment entails overcoming the “pathogenic” denial of our own human animality.⁷² But it also necessitates the cultivation of the human capacity for mindfulness: the capacity for critical self-reflection on one’s own “mental creations,” which is facilitated by complex works of literature such as this one, in its subtle subversion of a patriarchal and anthroparchal symbolic order in denial about its own conditions of possibility and ultimately self-destructive tendencies.

Eerily for readers now living in the climatically changing century in which this novel is set, Verney relates how containing the spread of the pandemic and coping with its impacts is rendered more difficult because of the disordered weather conditions that accompany its inexorable progress over several years. These include unusually hot summers, as well as extreme cold snaps, violent storms, and massive sea surges. Together with the solar eclipse that precedes the entry of the Plague into Europe and the triple meteor shower and consequent tidal wave that the remnant English witness while waiting for sufficiently calm seas to cross the Channel en route to milder climes, these weather surprises are read by some in the novel as signs of the Second Coming, giving rise to a millennial cult led by

a false prophet on an ego trip. Importantly, however, these expectations, which the text initially also invites its readers to form, are disappointed, as Shelley pitches her own this-worldly prophetic vision against otherworldly apocalypticism. No explanation is given for the unseasonable and extreme weather, which seems to have settled down again when the narrative concludes. As Gillen D'Arcy Wood has observed, the disordering of the climate in *The Last Man* is reminiscent of the conditions that Shelley had experienced in the wake of the Tambora volcanic eruption: conditions that are now believed to have played a key role in the emergence and spread of the new strain of cholera that was advancing on Europe at the time that she was writing this novel.⁷³ While Shelley and her contemporaries knew nothing of the only recently established connection between the climatic impacts of this eruption and the approaching epidemic, of which her own half-brother William was to become one of the last victims to die in the London outbreak of 1832, her adherence to the atmospheric theory of disease could well have predisposed her to associate the extreme weather of 1816 to 1818 with the mounting depredations of cholera.⁷⁴ However, the text can also be seen as suggestive of an anthropogenic origin for the wild weather that accompanies the spread of her fictitious Plague. Despite the fact that Raymond's modernization drive entails the recruitment of "machines to supply with facility every want of the population" (*LM*, 84), Shelley's late-twenty-first century appears minimally industrialized: transport, for example, is still by horse, coach, sailing boat, or hot air balloon. Since the advance of the pandemic is attributed primarily to the medium of the "empoisoned air" (186), it could well be associated, whether figuratively or causally, with the anthropogenic air pollution that was already being produced by the "Satanic mills" of Shelley's day. As James McKusick notes in an early ecocritical reading of *The Last Man*: "As the manufacturing cities of England disappeared into a thick haze of photochemical smog, it becomes possible to imagine that human activities might alter the climate and eventually destroy the Earth's ability to sustain human life"—as did Blake, in McKusick's reading, in his prophetic verse epic, *Jerusalem* (1804–20).⁷⁵

While Shelley's novel explicitly refutes the violent logic of millennialist apocalypticism, it also implicitly undermines the hyperseparation of "nature" and "culture," materiality and morality, characteristic of the Modern Constitution. Today, nature-culture dualism is impeding our ability to recognize our own hand in the kind of weather extremes that beset the diseased society of *The Last Man*. These extremes are increasingly being pow-

ered by the “murderous engine” (*LM*, 366), as Verney calls the Plague, of the fossil-fueled process of industrialization that was set in motion during Shelley’s lifetime. Anthropogenic climate change, moreover, has its own epidemiological implications: among other things, it is engendering the spread of tropical diseases, such as mosquito-borne malaria, dengue fever, Rift Valley fever, and yellow fever. Several types of insect-borne brain infections are also expected to become more prevalent over a wider area, including Australia and throughout Asia.⁷⁶ A further critical factor in the growing potential for a new global pandemic, though, is the underlying malaise that afflicts human relations with other living beings, including those that constitute our own bodies, as human populations and consumption levels continue to rise under the conditions of global capitalist modernization.

This malaise is most clearly manifest in those destructive incursions into densely forested environments, especially in the tropics, that are exposing ever more humans and their domesticated animals to viruses that have evolved a symbiotic relationship with other free-living forest species, but to which their new hosts have no hereditary immunity. The felling of Queensland’s eucalypt forests, for instance, is destroying the native habitat of Australian flying foxes (or “fruit bats”), driving them into agricultural and urban areas and thereby opening opportunities for the viruses they carry to spread to other species. One of these, which does not cause illness in the bats themselves, was dubbed Hendra virus after the Brisbane suburb where it was first identified in 1994, having fatally infected several horses and their handlers; another is Lyssavirus, which can be contracted directly by humans and is most likely to be found in bats that are sick or stressed (for instance, by changes in their environment or by the methods used by humans to expel them from theirs).⁷⁷ Epidemiological mapping of the epicenters of new deadly viral infections indicate that they have all emerged from rainforest biomes. Ebola, Marburg, and HIV, for instance, all hail from the African rainforest or its hinterland. As Frank Ryan observes, this suggests that “interference with rain forests, and deforestation in particular, is the most dangerous activity with regard to the emergence of new epidemic viruses.”⁷⁸

We are placing ourselves and other animals at grave risk in other ways as well, notably through the industrialization of animal husbandry. The emergence of bovine spongiform encephalopathy, commonly known as “mad cow disease,” as a consequence of feeding herbivorous cattle sheep brains infected with scrapie, is probably the most obscene instance of the

commercially motivated mistreatment of food animals, while its association with Creutzfeldt-Jakob disease in humans is indicative of the ways in which such mistreatment can rebound upon the societies that perpetrate it. Equally concerning is the widespread use of antibiotics, not only to counter the enhanced incidence of illness attendant upon factory farming practices but also to increase rates of growth in livestock, which is contributing to the development of drug-resistant “superbugs.”

The other major cause of antimicrobial resistance is the overprescription of antibiotics for humans and their domestic companions. This is a particularly revealing case of the “hazards of domination.” As Marie-Hélène Huet argues with respect to shifts in the interpretation of disease, especially cholera, in the course of the eighteenth and nineteenth centuries, Enlightenment rationality, in disburdening God and the stars of responsibility for causing epidemic illness, “yielded a world of shadows where dreams of controlling a rebellious nature gave rise to a scientific project itself fraught with perils and anxieties.”⁷⁹ In the twentieth century, the discovery of antibiotics and the development of preventive and early remedial treatments for several viruses, while significantly reducing mortality from formerly common infections, gave rise to a dangerous delusion that disease could be entirely eradicated from human life. During the heroic postwar period of medical advance, moreover, antibiotics stood alongside antibacterial cleaning agents as weapons in a wider war against “germs.” Not only is this leading to the emergence of increasingly invincible enemies; it also causes a good deal of collateral damage, taking out beneficial bacteria as well, unsettling our inner ecology, and rendering us, and other animals, more susceptible to superbug infection. Meanwhile, effluents from urban areas, farms, and slaughterhouses are introducing antimicrobial-resistant biota into free-living animal populations. These are most likely to become a problem in the wider environment when, once again, other stressors are in play and biodiversity is compromised.⁸⁰

If, as Ryan concludes, “in our exploitation of all life on earth, in our intrusion into every crevice of the biosphere, we have become a threat to ourselves,”⁸¹ then it is high time that disease prevention and treatment are reconceived along ecological lines as a multispecies project. Among other things, this would entail the conservation of wildlife habitat, the cessation of factory farming, protection of our own microbial messmates, and the stabilization of human population and consumption to levels that would allow for the continued flourishing of diverse other-than-human lives. Such multispecies practices of disease mitigation and amelioration imply

the acknowledgment of our transcorporeal connectedness with one another and other others, both in life and in death; and they would find support in the ethos of more-than-human flourishing toward which Shelley's narrator is belatedly propelled by the catastrophe of which he is, perhaps, the lone human survivor. Disease alone is unlikely to extinguish all human life on this planet. However, if a virus with the morbidity of Ebola or Hendra were to acquire the contagious properties of influenza, "fulminating in the amplification zones of our modern cities" and "fanned by the wind of modern airline travel,"⁸² the fictitious scenario imagined by Mary Shelley could well become something approaching a historical reality, with the socially disadvantaged suffering worst and first. From the grim perspective of those who ponder the present prospects for such an eventuality, a further source of vulnerability has come into view—namely, the complacent human self-enclosure described so vividly by Albert Camus in his plague novel of 1947:

In this respect our townsfolk were like everybody else, wrapped up in themselves; in other words, they were humanists; they disbelieved in pestilences. A pestilence isn't something made to man's measure; therefore we tell ourselves that pestilence is a mere bogey of the mind, a bad dream that will pass away. But it doesn't pass away and, from one bad dream to another, it is men who pass away, and the humanists first of all, because they haven't taken their precautions. Our townsfolk were not more to blame than others, they forgot to be modest—that was all—and thought that everything was still possible for them; which presupposed that pestilences were impossible. They went on doing business, arranged for journeys, and formed views. How should they have given a thought to anything like plague, which rules out any future, cancels journeys, silences the exchange of views? They fancied themselves free, and no one will ever be free so long as there are pestilences.⁸³

Camus's plague might have been metaphorical, coding for the insidious spread of fascism, but his narrator's observations on the perilous hubris of humanism hold good for more literal variants of pestilence as well.