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Mary Shelley's Malthusian Objections in *The Last Man*

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MARY Shelley's *The Last Man* (1826) is an inherently Malthusian work. Criticism on the novel largely overlooks this crucial point, perhaps because of a hesitance to diverge from the widely accepted view that Shelley stayed within the framework of her father's writings. William Godwin, of course, had an extended history with Thomas Robert Malthus by the time his daughter began writing *The Last Man* in 1824. Malthus published *An Essay on the Principle of Population* (1798) in large part as a response to Godwin's *Enquiry Concerning Political Justice* (1793) and "Of Avarice and Profusion" (1797); Godwin later wrote an extended refutation of Malthus in *Of Population* (1820). Shelley could not have been unaware of this ongoing debate. Throughout her life, Godwin "was publicly known as the antagonist of Malthus,"[1] and a discussion of Godwin's ideas at the time would have included Malthus's almost necessarily. Further, Shelley clearly thought about Malthus's and Godwin's essays in conjunction; she read *An Essay on the Principle*

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[1] Maureen N. McLane, *Romanticism and the Human Sciences: Poetry, Population, and the Discourse of the Species* (Cambridge: Cambridge Univ. Press, 2000), p. 85.

of Population and *Of Population* back-to-back in June 1821 while Percy Bysshe Shelley was in Pisa.

In this essay, I begin by exploring the extensive points on which Mary Shelley in *The Last Man* agrees with Malthus, which include the arguments that people suffer in all states of civilization and government; that suffering is an inevitable part of life; that warfare and the poor state of the masses' living conditions account for much of humanity's suffering; that human nature cannot be perfected; and—most important—that humankind is subject to the same laws of nature that apply to all other living organisms. I then go on to examine the ways in which Shelley diverges from Malthus. First, Malthus believed in a discoverable divine plan that could account for human suffering and death. Second, Malthus asserted that scarcity of food resources is the major limiting factor on human population growth. And third, Malthus demonstrated his conviction that human suffering can and should be considered from a removed, mathematical position. I show that Shelley instead argues that humans are subject to the whims of nature, which behaves blindly and randomly; that disease is the most significant limiting factor on populations; and that ethical experience is grounded in individuating targets of empathy.[2]

The Last Man recounts the destruction of the human species at the end of the twenty-first century. The narrative is told from the perspective of Lionel Verney, the son of a debauched favorite of the English king who fell out of favor and died in obscurity; Lionel reconnects with the abdicated king's son, Adrian, and marries the king's daughter, Idris. He goes on to live an idyllic life in the new English republic, marred only by his sister's suicide after the death of her husband, Raymond, in the Greek wars to conquer the Turkish Empire. Soon, though, a plague sweeps across the

[2] This concern with the ethics of science aligns with what Barbara T. Gates identifies as the moralizing tendency of women who wrote about science in the late eighteenth and early nineteenth centuries. It also can be identified as a resistance to the impersonality and even anonymity that Evelyn Fox Keller, a mathematical biophysicist and historian of gender and science, argues is valued by masculinist modern science. See Barbara T. Gates, *Kindred Nature: Victorian and Edwardian Women Embrace the Living World* (Chicago: Univ. of Chicago Press, 1998), p. 48; and Evelyn Fox Keller, *Reflections on Gender and Science* (New Haven: Yale Univ. Press, 1985), p. 10.

world, threatening humanity with extinction; Lionel watches his fellow Britons and then his family die off until, he believes, he is the eponymous last man on Earth.

Shelley's work falls within several traditions, but it is unique in many significant ways. For the novel's accounts of plague, Shelley drew on sources as diverse as the Book of Revelation, Giovanni Boccaccio's *Decameron* (1348–53), Daniel Defoe's *Journal of the Plague Year* (1722), and Charles Brockden Brown's *Arthur Mervyn* (1799).[3] Though it is the first apocalyptic novel written in English, and perhaps the first secular account representing a future destruction of all humankind, Shelley's novel can be situated in a contemporaneous vogue for "last man" narratives, including the novels *The Last Man, or, Omergarus and Syderia: A Romance in Futurity* (1806) by Cousin de Grainville, *The Last of the Lairds* (1826) by John Galt, and *The Last of the Mohicans* (1826) by James Fenimore Cooper; the abandoned play *The Last Man* by Thomas Lovell Beddoes (1824–25); the poems "Darkness" (1816) by Lord Byron, "The Last Man" (1823) by Thomas Campbell, and the satiric "The Last Man" (1826) by Thomas Hood; as well as various works of art in the 1820s by John Martin. Fiona J. Stafford comments on this trend that the 1820s was a decade in which "writers who felt they had outlived their cultural milieu and were left stranded in an uncongenial age" turned to this "elegiac form" (*The Last of the Race*, p. 199). Shelley's work differs from others, however, in the future setting of the events, the totality of the destruction envisioned for the human species, the natural origin of that destruction, the lack of a melioristic Christian framework, and the pro-social, anti-solipsistic concerns implicit in the book's ethical imperative. Many of these points of divergence make *The Last Man* a clear response to Malthus's ideas on population growth and decline.

Several critics have mentioned briefly the Godwin-Malthus exchange on population in their discussions of *The Last Man*, but no one has seriously considered this novel as a response to Malthus. Lee Sterrenburg, for example, sees Shelley as writing about Malthus in the mold of her father, "pick[ing] up where

[3] See Fiona J. Stafford, *The Last of the Race: The Growth of a Myth from Milton to Darwin* (Oxford: Clarendon Press, 1994), p. 217; and Alan Bewell, *Romanticism and Colonial Disease* (Baltimore: Johns Hopkins Univ. Press, 1999), p. 299.

her father leaves off and pursu[ing] the subject to new . . . ends," though he does not explore what those ends might be.[4] Stafford further notes that Malthus's work and the intense overcrowding of London contributed to the alarm of writers of apocalyptic literature throughout the 1820s, though she does not pursue those issues in relation to *The Last Man* specifically.[5] Charlotte Sussman, in an article focused on late-eighteenth- and early-nineteenth-century debates over emigration, explores the topic in *The Last Man* and discusses Malthus's views of emigration, but never takes the step to tie Malthus into *The Last Man*.[6] None of the most notable writers on disease in *The Last Man*, including Alan Bewell, Audrey Fisch, and Anne McWhir, consider the plague of the novel in relation to Malthusian population checks.[7]

Fiction, as opposed to a tract or essay, enabled Mary Shelley to expound her ideas on the science and ethics of population theory in a form publishable by a woman in the early nineteenth century, when opportunities for women to publish on scientific topics were scarce.[8] *The Last Man*'s form does not detract from its nature as a serious and considered response to Malthus's work, however, and instead allows Shelley to present her book as a thought-experiment that explores the implications of Malthus's ideas. The novel's overt fictionality allows Shelley to employ an extreme hypothetical situation, almost a reductio ad absurdum, to demonstrate how she thinks human populations and human nature actually operate. This view of the novel accounts in large part for its unusual premise. Though it is not strictly empirical, *The Last Man*, like much natural philosophy of the time, is a mix of theorizing and observations from personal experience (hence the roman à clef elements).

[4] Lee Sterrenburg, "*The Last Man*: Anatomy of Failed Revolutions," *Nineteenth-Century Fiction*, 33 (1978), 333.

[5] See Stafford, *The Last of the Race*, p. 207.

[6] See Charlotte Sussman, "'Islanded in the World': Cultural Memory and Human Mobility in *The Last Man*," *PMLA*, 118 (2003), 286–301.

[7] See Bewell, *Romanticism and Colonial Disease*; Audrey A. Fisch, "Plaguing Politics: AIDS, Deconstruction, and *The Last Man*," in *The Other Mary Shelley: Beyond "Frankenstein*," ed. Audrey A. Fisch, Anne K. Mellor, and Esther H. Schor (New York: Oxford Univ. Press, 1993), pp. 267–86; and Anne McWhir, "Mary Shelley's Anti-Contagionism: *The Last Man* as 'Fatal Narrative,'" *Mosaic*, 35, no. 2 (2002), 23–38.

[8] As Gates has noted in her study of nineteenth-century women writing about science, "When women began to popularize science, literature and science were not categorically separated in the way in which they are now" (*Kindred Nature*, p. 83).

Mary Shelley's reworking of Malthusian elements in *The Last Man* constitutes a sophisticated response to one of the most influential scientific theories not only of Shelley's lifetime, but of the entire nineteenth century. Malthus's *Essay on the Principle of Population* remained in the public eye in the thirty years following its initial publication—going into a fifth edition in 1817 and a sixth in 1826, the year *The Last Man* was published—and continued to have wide-ranging effects on science into the 1830s, when Charles Darwin famously read it. Departing from a longstanding tendency to see Shelley's non-*Frankenstein* writing as derivative, my analysis of Malthus and Shelley contributes to the scholarly project of situating Shelley's ideas as determined not by her biography or parentage,[9] but rather by her role as a complex, well-read, and culturally aware thinker.

Mary Shelley in *The Last Man* agrees with Malthus's ideas in his *Essay on the Principle of Population* on numerous and varied points. Indeed, she largely sides with Malthus in the ongoing Godwin-Malthus debate—with which she stayed current, as evidenced by her reading of Malthus's and Godwin's essays in 1821. She returned to Malthus's writings before working her way through her father's *Of Population*, which suggests that she gave both works a fair hearing, rather than just reading her father's work and relying on her memory of Malthus's arguments or taking Godwin's representation of Malthus as fair and factual.

Malthus argues that people suffer in all states of civilization and government, in contradistinction to Godwin's famous view that institutions are responsible for most of human suffering.[10]

[9] Or even her marriage—as McLane notes, Percy Bysshe Shelley wrote in opposition to Malthus's views "in several prose works, most incisively in the unfinished 'A Philosophical View of Reform' (1819)" (*Romanticism and the Human Sciences*, p. 112).

[10] See Thomas Robert Malthus, *An Essay on the Principle of Population: Influences on Malthus, Selections from Malthus' Work, Nineteenth-Century Comment, Malthus in the Twenty-First Century, Second Edition* (1798), ed. Philip Appleman (New York: W. W. Norton and Co., 2004), pp. 26–30; hereafter cited parenthetically in the text.

Malthus writes about the inability of any form of government to protect its subjects or citizens from suffering:

> We tell the common people that if they will submit to a code of tyrannical regulations, they shall never be in want. . . . They perform their part of the contract, but we do not, nay cannot, perform ours, and thus the poor sacrifice the valuable blessing of liberty and receive nothing that can be called an equivalent in return. (*Essay on the Principle of Population*, pp. 42–43)

This is not ultimately the fault of governments, though, for in a passage that was later much maligned by Godwin, Malthus writes:

> though human institutions appear to be the obvious and obtrusive causes of much mischief to mankind, yet in reality they are light and superficial, they are mere feathers that float on the surface, in comparison with those deeper seated causes of impurity that corrupt the springs and render turbid the whole stream of human life. (p. 64)

In *The Last Man* Shelley similarly presents a radical vision of the failure of all governments to enact any significant change, as many critics have noted.[11] The warmonger Raymond, the popular candidate Ryland, the aristocrat Adrian, the anarchist Irish, and the entirely independent Lionel all fail to govern effectively and to protect themselves and their subjects. Mary Shelley, like Percy Bysshe Shelley, believed that "the aim of all government should be the well-being of its populace," a belief that Betty T. Bennett notes is evident in many of Mary Shelley's writings,[12] but, as Antonio González observes, this novel represents a "total rejection . . . of any political and philosophical system, especially Burke's, Godwin's, and Percy Shelley's" ("A Romantic Vision of Millenarian Disease," p. 57).

Even with the indulgent monarchy abolished in *The Last Man*'s twenty-first-century England, the quasi-democratically chosen "Lord Protectors" are unable to protect the nation in any

[11] See, for instance, Anne K. Mellor, "Introduction," in Mary Shelley, *The Last Man*, ed. Hugh J. Luke, Jr. (Lincoln: Univ. of Nebraska Press, 1965, 1993), p. xix; and Antonio Ballesteros González, "A Romantic Vision of Millenarian Disease: Placing and Displacing Death in Mary Shelley's *The Last Man*," *Miscelánea: A Journal of English and American Studies*, 17 (1996), 51–61.

[12] Betty T. Bennett, "Radical Imaginings: Mary Shelley's *The Last Man*," *Wordsworth Circle*, 26 (1995), 150.

meaningful way, and the more representatively elected Parliament proves entirely ineffective. Those men who *could* help humanity—such as Adrian with his education, wealth, and plans of benevolent improvement of society—will not do so, for seemingly frivolous reasons. Those men who *would* help humanity—such as Raymond with his plans to improve sanitation, ventilation, and construction in working-class households—cannot do so, because of foolish inclinations to achieve glory through conquest.[13] In fact, the design for an art museum is the only project that we see Raymond working on as Lord Protector, which is hardly as practical as the public utility projects listed as his initial goals. Raymond (the Byronic or Napoleonic figure) has the will but not the capacity, whereas Adrian (the Shelleyian character, "obviously not the involved political poet-philosopher [Mary Shelley] knew but rather . . . the Alastor figure he himself rejected" [Bennett, "Radical Imaginings," p. 148]) has the capacity but not the will, until it is too late. As a consequence, the regret that the English population did not necessarily have to be decimated haunts the ending of the novel. Peter Melville notes that Shelley and her contemporaneous audience would have seen the "miasmatic etiology" of the plague as "the result of poor environmental conditions (such as poor sanitation and ventilation),"[14] and, I would add, they would have blamed Adrian and Raymond for their failure to improve the nation's living conditions. The leaders thus contributed to the disease's virulence in England.

Several of Mary Shelley's other points of agreement with Malthus are implicit in their views of the social state. Both authors present suffering as an inevitable part of life; Malthus writes that "to prevent the recurrence of misery is, alas! beyond the power of man" (*Essay on the Principle of Population*, p. 42), and the innumerable deaths due to violence and disease in *The Last Man* attest to this fundamental impotence of humankind. Malthus also asserts that warfare accounts for much of humanity's suffering and deaths (p. 50). Critics writing on *The Last Man* have by and large overlooked the role of violence and murders in diminishing

[13] See Mary Shelley, *The Last Man*, ed. Hugh J. Luke, Jr. (Lincoln: Univ. of Nebraska Press, 1965, 1993), p. 76; hereafter cited parenthetically in the text.

[14] Peter Melville, "The Problem of Immunity in *The Last Man*," *SEL*, 47 (2007), 832.

the human population in the book. Scenes as varied as the corpses strewn across the Greek battlefield and the false Prophet's assassinations of the sick members of his Parisian cult suggest that more than just plague is carrying off large numbers of the human population (*The Last Man*, pp. 131, 296). Ironically, the devastation of humankind first becomes salient after a year of worldwide peace, when "the temple of Universal Janus was shut, and man died not that year by the hand of man" (p. 159). Such a state is unsustainable because, as both Shelley and Malthus argue, humankind cannot be perfected—there is a brutish part of human nature that cannot be eliminated and that overpowers benevolence, particularly in a crisis situation.

In emphasizing the inescapable baseness of human nature, Malthus and Shelley oppose Godwin's vision of human perfectibility. Malthus vividly describes the triumph of selfishness and baseness in a crisis, which undoes the progress made by the civilizing influences of generosity and kindness:

> The spirit of benevolence, cherished and invigorated by plenty, is repressed by the chilling breath of want. The hateful passions that had vanished, reappear. The mighty law of self-preservation expels all the softer and more exalted emotions of the soul. The temptations to evil are too strong for human nature to resist. . . . till at length self-love resumes his wonted empire and lords it triumphant over the world. (*Essay on the Principle of Population*, p. 68)

Such a vision of the moral devolution of humanity critiques Godwin's argument that human nature will be perfected eventually because the general moral state has improved regularly over time—or as Malthus describes it, "that argument which infers an unlimited progress, merely because some partial improvement has taken place, and that the limit of this improvement cannot be precisely ascertained" (p. 62).

In *The Last Man* we can trace Shelley's rejection of Godwin's vision of human perfectibility in two primary instances. The first example of human devolution is that of the English plague survivors' inability to recognize as fellow human beings two specters, one white and one black—an opera performer and French nobleman, respectively—during their march toward Switzerland. According to Jean-Jacques Rousseau, the influential Genevan philosopher,

the recognition of others of our species as human is an "achieved, not natural, [aspect] of the human condition" (McLane, *Romanticism and the Human Sciences*, p. 90).[15] The loss of this skill among the twenty-first-century republican citizens—supposedly more developed than any people from the past, according to Godwin's schema—testifies to Shelley's convergence with Malthus's ideas on moral devolution in a crisis. Lionel himself represents another test-case of Malthus's vision of reversion when, bereaved of his brother-in-law Adrian and his niece Clara, he reverts to the wild state of his youth, dreaming of the pastoral scene of his childhood (*The Last Man*, p. 325), eating "like a wild beast" (p. 329), almost bludgeoning a goat for fun (p. 334), and all in all regressing into a "wild-looking, unkempt, half-naked savage" (p. 331).

As should be evident from the animal imagery that characterizes Shelley's descriptions of Lionel's regression, human nature is presented in the book as animalistic. This point of agreement between Malthus and Shelley, perhaps the most important, suffuses both his essay and her novel: humankind is subject to the laws of nature that apply to all other living organisms. Even if humans would like to think of themselves as separate from the animal kingdom, such a fallacy can be disproved by a careful examination of the materiality of human life. The all-important "animal mechanism" is frequently referred to throughout *The Last Man*; Lionel toward the end of the book addresses himself to his animal brethren, describing their similarities: "I am not much unlike to you. Nerves, pulse, brain, joint, and flesh, of such am I composed, and ye are organized by the same laws. I have something beyond this, but I will call it a defect, not an endowment, if it leads me to misery, while ye are happy" (*The Last Man*, p. 334). Perhaps the most telling scene in this theme comes near the end of the novel, when Lionel and his dog companion climb the steps of St. Peter's side-by-side, approaching the seat of Christianity as equals. Malthus writes in his essay that "Mr. Godwin considers man too much in the light of a being merely intellectual" (*Essay on the Principle of Population*, p. 85); Mary Shelley in her novel corroborates such a

[15] The fact that Geneva is located in the Swiss Confederation at the time that *The Last Man* was written suggests an important connection between Rousseau's thought and Shelley's point about Lionel's destination.

judgment of her father's views by demonstrating that humans are not a privileged species and instead are subject to the laws of nature that late-eighteenth-century science had demonstrated—particularly extinction.

When it comes to the causes and meaning of suffering, Mary Shelley's ideas diverge from Malthus's. Malthus believed that there is a balance in the world—a discoverable divine plan of sorts—that can account for human suffering and death. Malthus closes the first edition of his *Essay on the Principle of Population* with two chapters on the necessity of suffering even in a world ruled by an omnibenevolent God. He writes:

> The partial pain . . . that is inflicted by the Supreme Creator, while he is forming numberless beings . . . is but as the dust of the balance in comparison of the happiness that is communicated, and we have every reason to think that there is no more evil in the world than what is absolutely necessary. (*Essay on the Principle of Population*, p. 123)

This idea that there is "no more evil in the world than what is absolutely necessary" forestalls the potential objections that the sufferings and deaths of untold individuals are essentially meaningless in Malthus's schema and that Malthus's world is mechanistic.

In *The Last Man*, however, Mary Shelley presents human beings at the mercy of a blind and random nature. In this vein, "no transcendental value is ascribed to the concept [of death]" (González, "Romantic Vision of Millenarian Disease," p. 54). While the characters are trying constantly to reassure themselves of divine mercy and sympathy for their plight, no divine hand appears and no religious group is protected—not the listeners of the raving preachers, the followers of the cultish false Prophet, or the nature devotees of Windsor. The pursuit of a second Eden, motivated by Biblical promises of ease in paradise, leads to the nearly complete extinction of the English population, which was previously surviving despite its diminutions. At the close of the novel it becomes almost pitiful that Lionel maintains his hope in

the surveillance and guidance of God and angels. Religion begins to look increasingly like superstition that buffers human hopes from the realities of the natural world. Even holding out the possibility for a God overlooking this process, His methods are inscrutable and seem to displace humankind as a privileged species:

> Did God create man, merely in the end to become dead earth in the midst of healthful vegetating nature? Was he of no more account to his Maker, than a field of corn blighted in the ear? Were our proud dreams thus to fade? Our name was written "a little lower than the angels;" and, behold, we were no better than ephemera. We had called ourselves the "paragon of animals," and, lo! we were a "quint-essence of dust." (*The Last Man*, p. 290)

The traditional anthropocentric vision of the world is replaced by the realization that nature has no need for humans. Lionel mourns melodramatically: "Why should the breeze gently stir the trees, man felt not its refreshment? Why did dark night adorn herself with stars—man saw them not? Why are there fruits, or flowers, or streams, man is not here to enjoy them?" (p. 239). The answer, of course, is that beyond existing for its own sake, nature supports a wide variety of nonhuman life. Shelley thus overturns, as one critic has noted, "William Blake's notorious aphorism 'Where man is not nature is barren.'"[16] Nonhuman life continues healthy and fruitful in spite of the diseases, violence, and natural disasters that plague humankind (*The Last Man*, p. 229). After tidal waves nearly destroy Dover, the remaining English citizens flee for France, while a peaceful seagull returns to its nest on the chalk cliffs, prompting Lionel to muse regretfully that the bird can go home even though the people cannot (p. 275). Finally, it is revealed to him and to the reader that although "it appeared as if suddenly . . . no longer we were ruled by ancient laws," "Nature was the same, as when she was the kind mother of the human race" (pp. 270, 239). In fact, the Earth registers no real change from the near-extinction of the human species.

In refuting that there is a divine plan behind human suffering, Mary Shelley in *The Last Man* seems to anticipate the work

[16] Kevin Hutchings, "'A Dark Image in a Phantasmagoria': Pastoral Idealism, Prophecy, and Materiality in Mary Shelley's *The Last Man*," *Romanticism*, 10 (2004), 232.

of Charles Darwin. Suffering is random, death happens without a greater cause, and nature acts without concern for individuals, much less species. By demonstrating that humans are subject to the randomness of nature's dictates, Shelley moves toward a radical social and scientific conclusion: there is no reason to assume that humans could not also be subject to the laws of extinction, as the fossil record was understood by the beginning of the nineteenth century to indicate other species had been.[17]

While it is not clear whether Shelley directly read the publications of Georges Cuvier, the French scientist whose work on fossils, extinction, and catastrophism made him famous in his time, *The Last Man* demonstrates a familiarity with his ideas.[18] Cuvier's 1796 groundbreaking lecture on fossils and extinction began his meteoric rise to fame in the Western scientific community, which was cemented by his most famous work, *Le Règne Animal* (1817), or *The Animal Kingdom*, as it would be known in its English translations. Cuvier's catastrophic theory contributed to the secularization and scientizing of the concept of apocalypse by introducing the idea that "a series of mass extinctions meant that the Apocalypse itself could be included in the natural process" (Stafford, *The Last of the Race*, p. 208), thereby removing the traditional religious meaning and consolation attached to it. Early in his *Of Population*, Godwin commented that "we know that several species of animals have totally perished,"[19] and *The Last Man* clearly reflects a familiarity with the ideas of catastrophism and extinction. The extinction of the English race and the human species are both distinguished and directly referenced throughout the novel. Shelley thus demonstrates her awareness of key scientific topics of the day, and almost out-Malthuses Malthus by taking to its logical conclusion the argument that human beings are subject to natural laws

[17] See Keith Thomson, *Before Darwin: Reconciling God and Nature* (New Haven: Yale Univ. Press, 2005), p. 135.

[18] No record of Shelley reading Cuvier's works appears in her journals, though such entries were sporadic and so the possibility remains open (see Mary Shelley, *The Journals of Mary Shelley, 1814–1844*, ed. Paula R. Feldman and Diana Scott-Kilvert, 2 vols. [Oxford: Clarendon Press, 1987]). She may have learned about catastrophism indirectly from Byron's *Cain* (1821).

[19] William Godwin, *Of Population: An Enquiry Concerning the Power of Increase in the Numbers of Mankind, Being an Answer to Mr. Malthus's Essay on That Subject* (1820) (New York: Augustus M. Kelley, 1964), p. 95; hereafter cited parenthetically in the text.

of population decline: "[Nature] shewed us plainly, that, though she permitted us to assign her laws and subdue her apparent powers, yet, if she put forth but a finger. . . . man and all his efforts [would be] for ever annihilated" (*The Last Man*, p. 168). If other species had been known to go extinct, Shelley posits, then what would save humans, "least among the many that people infinite space" (p. 167), from such a fate?

Shelley further diverges from Malthus in her identification of disease, rather than food supply, as the major limiting factor on human population size. Disease has been considered in *The Last Man* largely as a multi-faceted metaphorical force, and while this symbolic level is undoubtedly operating in the novel, the literal nature of "the plague" should not be overlooked. Malthus, of course, famously argued that food was the most significant limiting factor on populations, the key to his "principle" of population. Shelley rejects this singular and seemingly reductive explanation in favor of a view of multiplicity—disease, after all, does not exclude multiple explanations even within a singular category. One can, for instance, be suffering from a primary disease but die from a secondary infection, or one's death can be chalked up to that broad category "natural causes," which encompasses so many possible maladies. This multiplicity is crucial to understanding "the plague." Thus, not only is Shelley rejecting a particular explanatory device (i.e., food scarcity), but, by promoting an alternative explanation that encompasses multiplicity (i.e., disease) she is also challenging the simplicity inherent in a singular explanatory mode or point of view.

Famously, Malthus asserted that scarcity of food resources is the major limiting factor on population growth. He describes the problem as follows:

> the power of population is indefinitely greater than the power in the earth to produce subsistence for man.
>
> Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. A slight acquaintance with numbers will shew the immensity of the first power in comparison of the second. (*Essay on the Principle of Population*, p. 19)

Or, to put it more pithily, population increases geometrically, whereas food supply increases arithmetically. There are a number

of other limiting factors affecting population dynamics that Malthus mentions as well, including delayed marriage, war, disease, poor sanitation and housing conditions, urban living, mistreatment of women, and unhealthy working conditions (pp. 43, 50), or, in short, "misery and vice" (p. 43). Clearly, his concerns are wide-ranging, but in the end all of these problems come back to food.

Godwin, in his response in *Of Population*, argues that limited food supply is a minor check on human populations. According to his views, "pestilence and famine. . . . occur only incidentally in Europe or elsewhere" (*Of Population*, pp. 355–56), and instead "conquest" and "bad government" are more responsible for the repression of population growth potential (p. 328). In fact, he argues, if an enlightened leader were to take control in countries that suffer from food shortages, such difficulties could be alleviated entirely. His portrait of such a leader and his rise to power resembles Adrian's in *The Last Man*:

> If a beneficent sovereign, the father of his people, were to arise among them, if a great genius, who loved his fellow-men, and in whom the ardour of his love generated enlightened attention, and fertilised the field of intellectual resources, were to mount the throne, if such a one were to apply all his energies to make his country what it formerly was, . . . his labours would not be in vain. (*Of Population*, p. 310)

Of course, as we have seen earlier from Adrian's failures, Mary Shelley disagrees with this optimistic prognostication.

Shelley also clearly disagrees with Malthus's view that food scarcity is the most significant cause of population decline. Shelley, in contradiction to Malthus's views of limited food supplies, foresees a future in which technological developments are able to produce food "in a ratio which [leaves] all calculation behind," a future in which "machines [exist] to supply with facility" the population's need for sustenance (*The Last Man*, p. 76). Food is always present in *The Last Man*, and on the rare occasions when it is mentioned as a subject of concern, it is inevitably in passing. Before the plague affects the English population, England is shown to have plenty of land to cultivate in order to feed a far greater number of people than the island had ever been called upon to support.

Sharing "their hospitable store" and plowing private parks allows the English easily to maintain their current population, the waves of English emigrants returning from colonies worldwide, and the Spanish and Italian refugees (p. 171). There are some struggles with food supply: early in the plague's seven-year visitation on England, the crops fail (p. 194), and later in the course of the plague, food is more than sufficient, but energy and motivation to gather it is lacking (p. 222). In both of those cases, however, food scarcity is clearly subordinate to disease as a concern—or rather, it furthers the progression of disease only incidentally. Even after the destruction of most of the population of Europe, food just somehow always seems to be available for the survivors: Lionel refers offhandedly to "the food-teeming earth" (p. 303), finds Paris's and Rome's granaries "well stored with grain, and particularly with Indian corn" (p. 338), and is stunned by Italy's lusciously productive landscape (p. 313).

Perhaps the most vivid refutation of Malthus's emphasis on food is the horrific scene of the discovery of Ryland's corpse, "half-devoured by insects, in a house many miles from any other, with piles of food laid up in useless superfluity" (*The Last Man*, p. 232). Food is not sufficient to maintain life in the face of disease, and the decomposing body sitting next to a disgustingly excessive and untouched pile of food reads as a powerful indictment of the limitations of a Malthusian view on population checks.

Rather than simply disagreeing that food supply is the major factor limiting human population growth, then, Shelley presents an alternative dominant cause: disease. By emphasizing the importance of disease on population dynamics, Shelley differs from both Godwin's and Malthus's views in their respective essays. Godwin overtly denies the power of disease to affect human populations, arguing that the population around the time of a plague seems severely to decrease, mostly because of the emigration of people of means from the area; the marked population increase after the end of the ravages of the plague, then, is due not to some animalistic urge to repopulate, but rather to those emigrants returning (*Of Population*, p. 239). Malthus also comments on the phenomenon of population explosion post-plague, but with very different conclusions: he argues that people naturally repopulate

after a visitation of plague, and that if the observed trends do not follow that prescribed pattern, then it is because the survivors are unable to produce enough food to support a population increase (*Essay on the Principle of Population*, p. 46). This discussion of disease, all of four sentences, is the most extended consideration of the topic in Malthus's essay, and leads him right back into a discussion of food scarcity. Disease only has real power for Malthus, then, when its effects are unmediated by ample food supply.

In *The Last Man*, however, disease affects all people regardless of age, nationality, race, sex, creed, or social class. It is, to alter an aphorism, the great leveler, the only effective democratizing force in the novel. Disease is also a global phenomenon. The unusually virulent plague begins before Raymond attacks, much less enters, Constantinople, though critics often link the conquering of the city to the spread of the plague. While Raymond is preparing his siege, his concerned wife Perdita hears about the plague's widespread destructiveness:

> This enemy to the human race had begun early in June to raise its serpent-head on the shores of the Nile; parts of Asia, not usually subject to this evil, were infected. It was in Constantinople; but as each year that city experienced a like visitation, small attention was paid to those accounts which declared more people to have died there already, than usually made up the accustomed prey of the whole of the hotter months. (*The Last Man*, p. 127)

The plague appears to arise in different parts of the world simultaneously and prior to the awareness of Lionel and his associates, who constitute some of the most powerful leaders, not to mention the most educated and wealthiest men, in England. As it turns out, "ravages [had been] made last year by pestilence in every quarter of the world"—except for Western Europe, of course, and that was not far behind (p. 160). The discovery of an infected American sailor prior to the year of universal peace is particularly informative here. A damaged ship is found off the coast of England around the time of Lionel's return from Greece, with only one surviving crew member:

> He had got to shore, and had walked a few paces towards the town, and then, vanquished by malady and approaching death, had fallen on the inhospitable beach. He was found stiff, his hands clenched,

> and pressed against his breast. His skin, nearly black, his matted hair and bristly beard, were signs of a long protracted misery. It was whispered that he had died of the plague. (p. 157)

It is later suggested that the American-made ship might have embarked from Philadelphia, as a vessel ironically named the *Fortunatus* had sailed from there, never to be heard from again (pp. 157–58). America, pointed to as a model of health and prosperity by both Malthus and Godwin, is thus shown to be diseased before England.

The sailor is not the only American victim of an unusual disease. The unnamed sources that report widespread deaths in both urban and rural settings are unsure about which disease precisely is causing the devastation in America. Plague is offered as a possibility, but so is yellow fever (*The Last Man*, p. 162), which differs greatly from plague in that it did not have a history of attacking Western Europe, and was not a predominantly urban disease. While it is true that "plague" is a catch-all term for a group of related diseases, or often for epidemics more generally, and that medical science in the early nineteenth century was not terribly advanced when it came to distinguishing many diseases, the ambiguity here is nonetheless telling—multiple possible diseases are decimating the world's population.[20] This multiplicity is evident even within Lionel's small family and friend group: his youngest son dies of typhus (*The Last Man*, p. 317), his eldest of an unexplained fever (p. 245), his wife of exhaustion and hypothermia (p. 258), his mother-in-law of old age (p. 302), Merrival the astronomer of grief and exposure to the elements (p. 221), and untold numbers of people are victims of a violence intrinsic to human nature that is brought out by the broader world crisis. In an offhand comment, Lionel refers to the English merchants' concerns over how to interpret and handle the "*many*-visaged death" affecting the rest of the world, and later he obliquely mentions the "*causes* that had so fearfully diminished" Western Europe's population (pp. 167, 272; emphasis added).

[20] McWhir notes that the term "plague" was often used at the time to describe a multitude of diseases, including smallpox, malaria, and typhus (see "Mary Shelley's Anti-Contagionism," p. 23).

There are a number of suggestions throughout *The Last Man*, in fact, that "the plague" is not a singular entity, even if the narrator frequently refers to it as such throughout his story. Lionel has been established as an unreliable first-person narrator by the time that "the plague" arrives in the second volume. Generally, any claim to a singular viewpoint should be distrusted in Shelley's works; as Bennett notes, "parallel visions, in different guises, are at the core of all of Mary Shelley's major fiction" ("Radical Imaginings," p. 148). Lionel warrants that warning: he misjudges many characters in the work, particularly his wife and sister, and probably hastens their deaths as a consequence. He also tends to quote Edmund Burke, whose conservative views in many ways were diametrically opposed to Shelley's, indicating a division between author and narrator. Perhaps even more telling, though, are Lionel's self-aggrandizing claims about how, in his dilettantish writings, his "point of sight was extended" so that he could see more clearly into "the inclinations and capacities of all human beings" and "penetrate the last veil of nature and her God" (*The Last Man*, p. 113). Such a celebration of the power of authorial vision has already been undercut by this point by the "Author's Introduction" to *The Last Man*, when the translator and compiler of the work, who is him- or herself a fiction, ponders the limits of any artist's point of view:

> Sometimes I have thought, that, obscure and chaotic as [the Sybil's leaves on which the story was written] are, they owe their present form to me, their decipherer. As if we should give to another artist, the painted fragments which form the mosaic copy of Raphael's Transfiguration in St. Peter's; he would put them together in a form, whose mode would be fashioned by his own peculiar mind and talent. (p. 4)

How would this passage or even this novel change if we substituted "facts" or "events" for "leaves"? Or if we were aware throughout our reading experience that all words written in the novel are interpretations? It seems that the answer must be that we as readers need to look for the least-mediated observations in order to try to get close to the truth of things, while also questioning Lionel's interpretative gestures, particularly his assumptions about the plague.

So not only are we given cause as readers to doubt Lionel's monolithic characterization of "the plague," but, as is clear in the example of the American "yellow fever or plague" (*The Last Man*, p. 162), the novel also hints at the multiplicity of diseases that are attacking the human population around the globe. Even among supposed plague victims there are a multitude of symptoms, none of which coalesce in any one patient. One of Lionel's vanguard troop in France has seizures as his first sign of infection (p. 292); the abandoned opera performer discovered along the side of the French road shows signs of hyperactive delirium, performing acrobatics until he collapses, dead (pp. 298–99); Lionel himself when infected is overcome by "torpor" and a feeling of weight on his limbs, so much so that he appears dead to observers (p. 249). The time from first symptom to death varies widely among individuals as well: Lionel is ill for four days (p. 249), the "Black Spectre" of the lonely French nobleman on horseback is dead hours after his weakness causes him to fall from his horse (p. 299), and some of the English survivors in Dijon take up to a week to die (p. 303). Within the category of what are now known forms of plague, *The Last Man* also presents a variety of victims. The dead American sailor, with his skin darkened by disease, represents a victim of septicemic plague (an infection in the blood) (pp. 157–58); the "negro half clad" with his "death-laden" breath represents the pneumonic plague (an infection in the lungs) (p. 245); and the disfigured corpse that Lionel Verney discovers seemingly "tortured" in a shack near his home at Windsor represents the bubonic plague (an infection in the lymph nodes that leads to swellings or buboes) (pp. 187–88).

To reiterate, even granting the imprecision of medical diagnosis at the time that Mary Shelley was writing this novel and the inevitable inter-individual variations in disease progression, the variety of symptoms in *The Last Man* indicates that there are multiple diseases coalescing into "the plague" responsible for the death of most of the human species. Consequently, Shelley challenges not just Malthus's explanation in his *Essay on the Principle of Population*, but also his entire explanatory mode that privileges singularity over multiplicity. In arguing for the multiply determined nature of causes, she rejects the scientific and philosophical drive toward one simple principle—the law of parsimony

or Occam's razor, as we commonly know it—that guided British science since at least Newton's 1687 *Principia*, which lists the first rule for reasoning in philosophy as "to admit no more causes of natural things than such as are both true and sufficient to explain their appearances."[21] Appearances, Shelley indicates in this novel, can be deceptively simple.

Mary Shelley's ethical system in *The Last Man* takes issue with Malthus's dispassionate approach to human suffering. Malthus's canonical status among economists is largely due to his influential demonstration that human behavior (in this case, population decline in particular) can and should be considered from a mathematical and practical position. Reacting against the idealistic revolutionary generation embodied by Godwin, Malthus represented "a tough-minded empiricism" and so drew criticism from "humanitarians and social reformers all over Europe," including Godwin, Samuel Taylor Coleridge, Thomas Carlyle, and Friedrich Engels.[22]

Shelley's *The Last Man* takes its place as a critique of Malthus's empiricist approach to human suffering. This would have been a pressing issue at the time, as the period of Mary Shelley's life to 1826 witnessed "the emergence and stabilization of a mathesis of persons" as quantified bodies, with the prominent example of the 1801 census (McLane, *Romanticism and the Human Sciences*, p. 111). Shelley demonstrates in *The Last Man* the ethical imperative of considering human suffering from an empathic position and on an individual level. Systems that, like Malthus's, consider people en masse are represented as ethical failings and lead to the destruction of the erring individual and his goals. Raymond and Merrival are two prominent examples of this idea.

[21] Isaac Newton, *The Mathematical Principles of Natural Philosophy (Philosophiae naturalis principia mathematica)* (1687), trans. Andrew Motte, quoted in *On The Shoulders of Giants: The Great Works of Physics and Astronomy*, ed. Stephen Hawking (Philadelphia: Running Press, 2002), p. 1,038.

[22] Philip Appleman, "Introduction," in Malthus, *An Essay on the Principle of Population*, pp. xxi, xiv.

In his Greek campaign against the Turks, Raymond fully commits himself to the mentality of a military leader in his concern for numbers of soldiers, thinking that "one man, more or less, is of small import, while human bodies remain to fill up the thinned ranks of the soldiery" (*The Last Man*, p. 116). This is shown to be not just a failing of Raymond, but a failing of the military mindset generally, as when Raymond is captured by the Turks, and the Greeks, "in losing one man, forgot the nameless crowd strewed upon the bloody field" (p. 117). Later, when Raymond is finally able to enter Constantinople, he becomes indignant at his troops' desire to maintain their individual lives rather than risk contracting the plague and dying "in heaps, like dogs" (p. 140). Forcing his men to batter down the gates, he enters in an attempt to lead them against their sense of self-preservation, and is consequently killed in an explosion.

Merrival, the astronomer, seems at first to be an entirely different character. While others are talking of imminent plague, Merrival is talking of a hundred thousand years in the future when the earth's poles will align and produce a "universal spring" and "an earthly paradise," only to be undone an indeterminate amount of time later when "an earthly hell or purgatory, would occur, when the ecliptic and equator would be at right angles" (*The Last Man*, pp. 159, 160). This scientist is an "old man . . . apparently dead on earth, and living only in the motion of the spheres," instead of in material reality (p. 220). He seems to be a figure standing in for theorists who parlay in abstractions rather than the concrete.[23] Merrival's blindness to the suffering of individuals in his immediate presence, not just the "casualties of the day" but also his wife and children, undoes him (*The Last Man*, p. 209). When his family is destroyed by the plague, his far-sighted visions are refocused on the present and he collapses—which suggests that thinking about suffering in the abstract is a defense mechanism of those unable to cope with it in the proximal reality.

Adrian, the heir to the abdicated last king of England, stands as a touchstone figure for the ethical center of the novel—the

[23] Morton D. Paley sees Merrival as a figure "ironically compounded of the most perfectibilian aspects" of Godwin's and P. B. Shelley's philosophies (Paley, "*The Last Man*: Apocalypse without Millenium," in *The Other Mary Shelley*, p. 116).

experience of individuating suffering. When he joins Raymond in Greece, Adrian finds himself entirely unsuited for martial glories. While Raymond is able to "contemplate the ideal of war," Adrian is "sensible only to its realities" (*The Last Man*, p. 116). He cannot sufficiently "other" his enemies to prevent himself from experiencing an emotional outpouring at their deaths, and so he rejects the solipsistic tendency of soldiers: "The Turks are men; each fibre, each limb is as feeling as our own, and every spasm, be it mental or [bo]dily, is as truly felt in a Turk's heart or brain, as in a Greek's" (p. 116). He finally turns away from a soldier's life and returns to England after an offensive in which the Greek army massacred every citizen of a conquered town; "amidst the shrieks of violated innocence and helpless infancy," Adrian found himself overwhelmed by the accretion of individual suffering, having felt "in every nerve the cry of a fellow being" (p. 116). When he takes over the Lord Protectorship of England, it is with the goal of preserving individuals; he announces to Lionel: "If I can save one of [England's] mighty spirits from the deadly shaft; if I can ward disease from one of her smiling cottages, I shall not have lived in vain" (p. 179). Adrian's power, and the love of his people, springs from his individuating tendencies, as evidenced by his seemingly impossible feat of preventing the English and Irish armies from attacking one another by shifting their goal of "universal massacre" to "hope and fear for the fate of . . . one man" (p. 218). It is when he tries to group people that he causes their demise. His plan "to congregate in masses what remained of the population" results in the decimation of the English, at a time when the previous survivors were managing on their own, often in unharmed family groups (p. 222). Even if people do have to die, as Shelley shows us in her emphasis on the nearly unbounded power of disease and the lack of privilege of the human species, that does not negate the pain experienced on an individual level, or the value of an individual life.

Shelley's emphasis on sympathizing with individuals can be seen as a rejection of Malthus's dispassionate consideration of suffering not only from a competing sphere (i.e., rejecting scientific objectivity from an ethical impulse), but also from within the scientific mode itself. As Susan Bordo has noted, sympathy was a feminine epistemological value that played a significant role

in pre-Cartesian systems of understanding the world, but it was edged out in the seventeenth century by a masculinist "theory of knowledge" valuing detachment.[24] *The Last Man* can be read, then, as a radical call for a return to a feminine mode of understanding in a time that was seeing the first culturally significant consolidation of the scientific enterprise and its first claims to dominance as an epistemological system in England—the first recorded use of the term "scientist" was in 1834, after all, not long after the publication of this novel.[25]

The Last Man is a serious and extended response to Malthus's *Essay on the Principle of Population* that in many places resists Mary Shelley's intellectual inheritance as the daughter of William Godwin, one of the most prominent Romantic-period thinkers. Such a project, nonetheless, aligns Shelley with her parents' "central belief in the duty of engagement in public debate on all pertinent moral, social, and political issues as a means of contributing to the general welfare."[26] Godwin and Wollstonecraft wrote philosophical and political tracts that were widely influential, and Percy Bysshe Shelley produced a number of essays in a similar vein. Godwin's response to Malthus was nonfiction—so why wasn't his daughter's? Why is *The Last Man* a novel, and what influence might that fact have on our understanding of its relationship to Malthus's nonfiction work, which I have been treating as a scientific tract on population dynamics, but which has also been considered a work of philosophy or of political economy?

An easy, albeit speculative, response to the question of why Mary Shelley responded to Malthus's ideas with a novel would

[24] See Susan Bordo, "Selections from *The Flight to Objectivity*," in *The Gender and Science Reader*, ed. Muriel Lederman and Ingrid Bartsch (London and New York: Routledge, 2001), pp. 93, 96.

[25] *The Oxford English Dictionary*, 2d ed., 1989, s.v. "scientist" (*OED Online*, Oxford Univ. Press); accessed 13 April 2010 at <http://dictionary.oed.com/cgi/entry/50215824>.

[26] Pamela Clemit, "*Frankenstein*, *Matilda*, and the Legacies of Godwin and Wollstonecraft," in *The Cambridge Companion to Mary Shelley*, ed. Esther Schor (Cambridge: Cambridge Univ. Press, 2003), p. 28.

be that she learned from her father's missteps. Godwin's tract responding to Malthus was not successful, perhaps because he was taking on an already entrenched cultural paradigm, or perhaps because the reading public was not interested in book-length arguments in the same way that it had been decades before. Perhaps we can read *The Last Man* as a waypoint, a successor to the Jacobin novels of purpose and a precursor to the social problem novels that weighed in on cultural debates throughout the Victorian era. Only ten years separates the publication of *The Last Man* from the composition of Charles Dickens's *Oliver Twist* (1837-38), after all. And we need only to look as far as Shelley's journal for evidence of her opinion of her father's strategies: after she finished reading the *Enquiry Concerning Political Justice* on 19 October 1814, she records her father's refusal on 20 October to speak about Percy Shelley "to any one but an attorney," while simultaneously seeking additional sums from him; her frustration is summed up in the implication that his philosophy was little more than self-justifying, self-serving verbiage: "oh! Philosophy!" (*Journals of Mary Shelley*, I, 37).

Another relatively obvious answer to the question of why Mary Shelley might have chosen fiction over nonfiction in order to respond to Malthus arises from gender and publication dynamics in the early nineteenth century. Wollstonecraft rose to cultural prominence as a so-called female philosopher, but, by the 1820s, fiction was much more lucrative and open to women writers. As John Kucich has noted: "fiction was one of the few cultural domains in which women could legitimately express themselves, which meant that the novel was also a medium in which the impact of ideas on private life, or on non-privileged social groups, could be dramatized."[27] Even those studies of nineteenth-century women in science that argue that women were more involved in science in a greater variety of domains than many people realize still admit the limited nature of the opportunities available for women who wanted to publish on science.[28] Fiction, in contrast,

[27] Kucich, "Intellectual Debate in the Victorian Novel: Religion, Science, and the Professional," in *The Cambridge Companion to the Victorian Novel*, ed. Deirdre David (Cambridge: Cambridge University Press, 2001), p. 212.

[28] See, for example, *Natural Eloquence: Women Reinscribe Science*, ed. Barbara T. Gates and Ann B. Shteir (Madison: Univ. of Wisconsin Press, 1997); Ruth Watts, *Women in*

was widely read and profitable. The reading public had grown from an estimated 1,500,000 in 1780 to 7,000,000 by 1830, and the tastes of the rapidly growing middle classes tended toward fiction.[29] Mary Shelley was trying to support herself and her young son after her husband's death in 1822, and she could have sought to capitalize on her association with the deceased, phenomenally popular Byron.[30] Such an association would have been less helpful in writing a treatise or tract, and such a publication was not likely to be as profitable.

A third, and more complicated, answer to our question about form would have to explore the fiction/nonfiction divide in the early nineteenth century, and a full consideration of this topic would exceed the space limitations at hand. Nonfiction writers often use narrative and fictive elements to persuasive effect. Even science is fictive, creating narratives and tapping into the same preexisting ones that literature partakes of, and Malthus's work is no exception.[31] Most of Malthus's essay is constructed in narrative form, in which, to illustrate a point he is trying to make, he repeatedly invents a character (such as the typical Native American woman, the horse being spurred, or the "Savage" who had never

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Science: A Social and Cultural History (London and New York: Routledge, 2007); and Patricia Phillips, *The Scientific Lady: A Social History of Woman's Scientific Interests, 1520–1918* (London: Weidenfeld and Nicolson, 1990).

[29] See Fiona Robertson, "Novels," in *An Oxford Companion to the Romantic Age: British Culture 1776–1832*, ed. Iain McCalman (New York: Oxford Univ. Press, 1999), p. 287. On the reading trends of various classes in the Romantic period, see Gary Kelly, *English Fiction of the Romantic Period, 1789–1830* (London and New York: Longman, 1989).

[30] In her taxonomy of Romantic novels, Robertson lists Mary Shelley as the sole representative of the philosophical novel tradition in the late Romantic period (see "Novels," p. 294).

[31] Scientific discourse in the nineteenth century was generally engaged in by nonprofessionals (i.e., leisured gentlemen) and could be read with relative ease by the general literate population. On this subject, see John Kucich, "Scientific Ascendancy," in *A Companion to the Victorian Novel*, ed. Patrick Brantlinger and William B. Thesing (Malden, Mass.: Blackwell, 2002), pp. 120–21. Moreover, the nineteenth century was also a period when scientists were not accepted as "the only legitimate source of scientific knowledge," as Suzanne Le-May Sheffield observes in her *Revealing New Worlds: Three Victorian Women Naturalists* (London and New York: Routledge, 2001), p. 4. Perhaps most significant, as Gillian Beer noted nearly thirty years ago in her seminal work *Darwin's Plots* (first published in 1983), a scientific discovery "is at its most fictive" "when it is first advanced," and the nineteenth-century was a time of unprecedented scientific developments (see Beer, *Darwin's Plots: Evolutionary Narrative in Darwin, George Eliot and Nineteenth-Century Fiction, Second Edition* [Cambridge: Cambridge Univ. Press, 2000], p. 1).

seen a watch [*Essay on the Principle of Population*, pp. 27, 77, 80]) or a colorful scenario (as when a man refuses repeatedly to take a glass of wine offered to him [p. 18] or a man thinks to keep his mistress from growing old by never letting her go outside [p. 110]). These narratives are not necessarily logical, despite being argumentative, and, taken from a different perspective, they could lead to very different conclusions. Malthus's evidence is his own viewpoint, and his persuasiveness lies in the force and clarity of his style.[32] Malthus even acknowledges the tenuous nature of his narratives, using terms such as "it may be said, perhaps" (*Essay on the Principle of Population*, p. 101), "now supposing," (p. 100), "I think" (p. 94), "we will suppose" (p. 22), and "probably" (p. 29) to temper his claims and signal the transition from established claims into his own. So to ask why Mary Shelley wrote a novel in response to Malthus's tract is perhaps a misleading question—very little literature is purely fictive, any more than most long-form nonfiction is purely factual.[33]

In both agreeing with and critiquing Malthus's views, Shelley constructs a narrative about limitations: of human potential, of singular perspective, of theoretical frameworks. We as readers are invited to invest both in the importance of multiple, rather than singular, explanatory devices and in an ethics of connectedness and particularity. *The Last Man* is not only Mary Shelley's intellectual endeavor to consider the normative implications of one of the most dominant scientific systems of her day and to situate herself as a serious contributor to the cultural conversation about it, but it is also a personal endeavor that reflects the struggles of a person bereft of idealism but still trying to survive in a seemingly

[32] Malthus claims in his essay that "detail and application . . . can alone prove the truth of any theory" (*Essay on the Principle of Population*, pp. 55–56).

[33] See Emily Martin, "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles," *Signs*, 16 (1991), 485–501, about how cultural values continued to influence seemingly objective scientific writing in the late twentieth century. Recent psychological studies on narrative have shown that narratives are more persuasive the more they transport the readers into the worlds and arguments they construct, regardless of whether the narrative is labeled factual or fictional. See, for example, Melanie C. Green and Timothy C. Brock, "The Role of Transportation in the Persuasiveness of Public Narratives," *Journal of Personality and Social Psychology*, 79 (2000), 701–21. Less empirically, philosopher Anthony Cunningham has argued that argument within narrative is more persuasive than argument alone, especially when dealing with ethical issues (see Cunningham, *The Heart of What Matters: The Role for Literature in Moral Philosophy* [Berkeley and Los Angeles: Univ. of California Press, 2001]).

hostile world. The novel's genre does not detract from the serious and considered response to scientific ideas that it might contain, but rather it makes use of its popularity and overt fictionality to grant the female author more creative and even philosophical license than the typically male form of the polemic pamphlet would allow her, while also being more commercially successful (given fiction's greater appeal) and thus having a greater effect on burgeoning discourse about the intersections of science and culture.

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ABSTRACT

Lauren Cameron, "Mary Shelley's Malthusian Objections in The Last Man" (pp. 177–203)

This essay considers Mary Shelley's *The Last Man* (1826) as intervening in the ongoing debate between Thomas Malthus and William Godwin. Malthus published *An Essay on the Principle of Population* (1798) in large part as a response to Godwin's *Enquiry Concerning Political Justice* (1793) and "Of Avarice and Profusion" (1797); Godwin later wrote an extended refutation of Malthus in *Of Population* (1820). Mary Shelley uses *The Last Man*, a story of the end of the human species, in part as a meditation on the merits of Malthus's philosophical positions in the *Essay on the Principle of Population*, but she seems to disagree with a number of the mechanisms he identifies: in contrast to Malthus, Shelley identifies a blind and random nature rather than any divine plan as controlling population change, and disease rather than food scarcity as the primary cause of population reduction, but insists upon the importance of individuating and empathizing with the suffering.

Keywords: Mary Shelley; *The Last Man*; Thomas Malthus; *An Essay on the Principle of Population*; William Godwin