

Introduction

“The Germ Theory Again”: Disease, Ideology, and the Possibilities of Biotic Life in the World of Antibiotic Purity

Disease in the Community and the Self-at-Risk

In 1877, *Chambers's* magazine published an article wryly titled “The Germ Theory *Again*.”¹ Although the article contains simply an uncontroversial historical summary of the concept, its very title belies the author’s impatience with media saturation on the topic. Yet six years later in 1883, the London-based newspaper *Good Words* still found a demand for the topic, publishing a three-part series on germs titled “Microscopic Fungi” that eloquently reflects on the existential paradox of germs, those tiny “citadels of littleness” that wreak havoc on “person and estate.”² The author empathizes with the presumed common attitude of his audience, agreeing “that it is hard to conceive how such immense capacity for evil gets stowed away in compass so small.”³ The tonal dissonance between these two publications highlights a key moment in history, in which I locate the goals of this project: the period between 1870 and 1900 when germ theory had “gone viral,” so to speak—saturating media discourse and reaching a wide audience of popular science readers who engaged with and understood the concepts it embodied—and yet simultaneously remaining mystifying and rather terrifying to the audience that consumed knowledge of it so readily.

The growth, popularization, and prevalence of germ theory resituated the focus of scientific discourse on the humble microbe, and this conceptual priority in turn gave rise to the field of bacteriology at the end of the century. In a society just a decade beyond Darwin’s famous publica-

tions, the synthesis of these cosmological and methodological frameworks underscored for Victorians an invisible battle waging all around them: the intricate interplay between microbe and mankind. By the 1870s (and after a half-century of seismic scientific paradigm shifts), the unending struggle between these two classes of lifeforms for superiority and survival—even as they often inhabit the same interstitial tissues and cells—was an ever-present reality for the reading Victorian public. Epistemologically founded on Darwinian concepts of survival of the fittest, methodologically bolstered by the microscopic findings of bacteriology, and conceptually familiar since the 1860s because of the widespread publication of theories of germs and contagion, human experience of the Anthropocene was resituated during this period. The human stage itself was now set, in the popular imagination, against a backdrop of other microscopic lifeforms hovering within, between, and amid the human bodies that had only recently seemed to predominate on earth. Thus, indeed, could magazines within the same ten-year period express both exasperation with germ theory as an overdone topic and also fearful wonder at the “unseen mist of organic atoms” and the “ manifold evils they have wrought.”⁴ Certainly, this Darwinian struggle performed the destabilization of the Anthropocene—if not to the naked eye, then at least in printed narrative. Indeed, “Bulk has ever impressed [humans] powerfully . . . but these microscopic specks . . . had not bulk enough to startle him.”⁵ Here, the author expresses the common Victorian wonder at the terror invoked by tiny organisms, which had the power to resituate humankind as only one of a handful of powerful classes of being, rather than its predominant force. The author tracks the development of germ theory with succinct anthropomorphism, noting that humans, “till of late, knowing nothing of their mystery . . . had no dread of them. Now [they are] beginning to Awaken to truth, and with wider knowledge there has come a terror of small things.”⁶ This “terror of small things” must be seen, of course, as not merely a new and unexplored fear of the unseen, but a fear of a ubiquitous and omnipresent unseen. By the 1870s, nineteenth-century scientific cosmologies saw microbial life not as a series of invisible, separate particles, but an inescapable mass of potential contagion—a “mist” as this author calls it—that terrifyingly linked society together in a messy Petri dish of humanity, unheeding of social, class, gender, and sexual boundaries.

For many decades, in fact, this was the main and almost sole purview of germ theory—a new and unheard of realization of the interconnection of all human beings in a very physical sense that then led many Victorians (certainly not at a loss for overthinking) to consider the environmental,

spiritual, social, and ethical networks of which they were inextricably a part. While Victorian awareness of social networks has been a topic of recent critical interest, such networks have thus far been theoretically and historically construed as seen rather positively by Victorians, revealing support and a common sense of welfare toward one another. But as germ theory and bacteriology would not bring about any practical medical cures until well into the twentieth century, Victorians, then, were situated at a very unique historical time in which they grappled with scientific findings that were almost purely conceptual. Certainly microbes could be seen, but what then? Cures were not emergent, and the public was left only with awareness of their universal risk via their very connection to the world and people around them. In this conceptual space, germ theory did very little *except* to highlight human interconnection in its most horrifying configuration.

Germ theory linked each illness to a specific microbe harbored in the human body and its waste, rejecting the older miasma theory's focus on unwholesome environments. Thus, germ theory moved the crosshairs of disease prevention from cleansing diseased *spaces* to cleansing or avoiding diseased *people*. What's more, the very nature of germ theory insisted on the actual, physical connection between bodies. The concept of social connection thus moved out of the realm of the theoretical signification into the realm of the hyperliteral—the very definition of the Kristevan abject. This in and of itself was enough to render germ theory horrifying to Victorians, for the overreal itself is horrifying. As Kristeva has illustrated, “in the presence of *signified* death—a flat encephalograph, for instance—I would understand, react, accept,” but “the corpse . . . it upsets even more violently the one who confronts it as fragile and fallacious chance.”⁷ That this “hyperreal” connection, then, was by definition a connection of porous body to contagious porous body rendered the new conceptual stance nearly incommensurable with existence itself, since the human mind, as Kristeva has noted, “thrust[s] aside” these ideas “in order to live.”⁸ Bichat's early work representing interstitial tissue as an all-encompassing organ that delicately connects all of our seemingly disparate ones, effectively shaping them into the integral whole that we know as the body, could then be newly understood as but a microcosm for the whole of humanity.

Yet in this interstitially connected humanity the connective tissue itself was revealed as noxious, the abject that must be thrust aside (and yet never can be, for it is us) so that life as we know it to can continue, particularly when confronting “fragile and fallacious chance” in these risky encounters. Thus, while germ theory revealed the physicality of humanity's connections

to itself and the world around it, it also simultaneously mutated this concept of connection into that which did not support the whole, but rather deeply threatened individual existence within the social body. That is, the social body could no longer be seen as a foundational critical mass upon which the individual body buoyed itself, but rather a cannibalistic force that threatened its own individual components by the very nature of its connectivity, now revealed as a palpable, physical (that is to say, no longer abstract) force. For Victorians, humanity itself seemed transformed into a cruel, inescapable murmuration in all its contagious and ubiquitous connectivity. Any preexisting notion of social interdependence, connectivity, and network culture was not merely underscored by germ theory, it was rendered literal, corporeal, and visible, if microscopic. Importantly, this connection ceased to connote notions of safety in numbers and supportive assistance and suddenly seemed to represent—in the same mass of people—hazard and risk. Benedict Anderson has argued that his famous notion of imagined communities was a concept “capable of being transplanted, with varying degrees . . . to a great variety of social terrains, to merge and be merged with a correspondingly wide variety of political and ideological constellations.”⁹ In this context, I will argue that community ideologically became an inescapable monster, and that this perception had real political and social consequences—often in the forms of Foucauldian surveillance and control that have become commonplace in Victorian studies, and largely for already marginalized populations. Community no longer signified aid through cooperative endeavors, but competitive organisms fighting each other for survival in a zero-sum battle against bacteria.

Various existential needs were at odds, then. To maintain a psychological sense of life in a world of risk, it suddenly seemed incumbent to avoid community (and risk) altogether in order to preserve bare, physical life (my debt to Agamben and his discussions of the way modernity places “biological life at the center of its calculations” should be here apparent).¹⁰ As Kristeva says, in the face of “a flat encephalograph,” we would give up—relinquish control of an obviously unchangeable fate. But confrontation with “fragile and fallacious chance” has the tendency to bring out human grit, as any and all apocalyptic films demonstrate. This perceived risk—not yet a death, not yet despair, but only an ever-present threat—and its biopolitical fallout in biological and existential life are what I aim to explore in this book, in the brief moment when Victorians grappled with these apparent realities freshly and in a completely unique conceptual space. Free from the complicating factor of practical solutions to these problems, Victorians inhabited a virtual

thought experiment where these needs and values and their biopolitical implications can be isolated and explored.

Amid a scientific milieu that urged a fundamentally altered way of considering disease, then, I demonstrate that a set of late-nineteenth-century authors used the medium of fiction and drama to resist what they saw to be the troubling sociopolitical implications of these new epidemiological understandings. To this end, my project highlights the convergent chronology, but divergent ethical imperatives, of two parallel yet opposed narratives. Germ theory implicitly packaged into its rhetoric an advocacy of personal sanitation through meticulous disinfection and maintenance of asepsis via isolation from other potential disease vectors (i.e., other humans, in many cases), an increasingly authoritative approach. While this ideology often took the physical form of highlighting health and home sanitation, its work was often subtler, as images of isolation and risk aversion pervaded more and more literature of this period, and advertisements promoting products that guaranteed entire microbial sterilization became increasingly prevalent. This broad notion has been addressed in recent microhistories of germ theory, but I argue that we can glean a deeper cultural understanding of the bioethical impacts of such scientific frameworks by excavating the undercurrent of an opposed narrative built into the fiction of late Victorian authors who vehemently denied the positive *social* value of such attitudes and practices, even as its biological implications seemed clearly advantageous.¹¹ Instead, their fiction subverts germ theory specifically and unmitigated scientific authority more generally by defiantly and consistently illustrating intimate relationships as fruitful and meaningful in spite of—and sometimes *because of*—infectious contact. Moreover, many of these texts represent purity (microbial, moral, or otherwise) itself—that exemplar of what is often reductively used as a stand-in for “Victorian”—as exactly that: lifeless. The texts I cover here expose a shockingly modern depiction of purity as unpalatably sterile, devitalized spaces cleansed of life itself. Thus, the microcosmic and microscopic imperative of germ theory—to sanitize, scrub, and so fend off all contaminating influences—was deftly picked up by Victorian authors as a handy means of subverting the dominant paradigm of disease as a thinly veiled palimpsest for moral impurities. The authors who picked up on this means of protest are rarely connected in present-day literary criticism and come from a wide range of backgrounds and geographical areas. Yet, as they are so united in the causes I identify here, I have developed the term Biopolitical Resistance Literature to describe the joint aims of the work I cover in this period.

It is worth pausing in this epistemological history to note that in coining this phrase, I mean to develop a convenient way of describing works that engage in similar modes of rejecting a similar set of medically and scientifically informed ways of engaging in the world. While I certainly think the authors covered here *saw themselves* as resisting very particular behaviors that were informed by emerging science, it is worth clarifying the fact that I do not see these authors as self-aware themselves of a unity between their works or of a collective, identified agenda such as would have existed for New Woman Fiction, for instance. That is, in coining the term Biopolitical Resistance Literature, I aim to group like-minded authors together as a set in this book (and perhaps for other scholars in future work), who were all independently and conscientiously engaged in responding in very particular ways to very particular things. I do not intend to imply that the authors grouped under this term would have seen what they were doing as part of a collective movement at the time, but that these individual projects spontaneously responded to a similar set of criteria and thus wove several insistent, independent argumentative strains into a cultural tapestry of resistance to a set of late-nineteenth-century biopolitical norms. Nor can we assume that these authors would have used anything like a concept of biopolitics in understanding themselves, of course. I certainly will argue that they saw themselves as attacking norms of structuring community and the contemporary standards for ethics of human interaction. In my mind, these concepts, when structured and informed by public health initiatives and contemporary science, are most easily grouped under the element of biopolitics, but I wish to be clear in stating that this is our current term for understanding such dynamics; the Victorians would have seen this under concepts of community, engagement, and individual responsibility to a larger world.

To return to Victorians and germs, then, I argue in this book that by turning an age-old representational schema of purity and contamination on its head, authors of biopolitical resistance literature in this period pushed back against the problematic and literalized impacts of germ theory's tendency to catalyze isolationism, self-interested social Darwinism, and disregard for the common good. These authors saw this tendency for what it was and, realizing its problematic results for social justice and bioethics, turned the tools of this metonym against itself, constructing a countercultural narrative in which *pure* spaces and actions were revealed as not simply antiseptic and without contamination, but—as we now know antibiotic environments to be—incapable of sustaining thriving life. To find life-giving media (to use Petri's microbial term), we must take with it the risk that comes from

other life forms. We must embrace our contaminated connectivity as the inextricably intertwined states that they are, and realize that to reject risk is to reject real connection with others.

Thus, in a world that had become increasingly invested in a search for new moral epistemologies after the findings of Darwin, Lyell, and others like them had chipped away at the authority of the church, authors of biopolitical resistance literature undermined convenient neoliberal ideologies of human value, and in this case held human community and social relationships as the highest good for mankind. Their fiction urges readers to avoid pitching neoliberal values of science as the newest Godhead, arbiter of behavior and purity, and instead to look to themselves and one another as mankind's only possible source of salvation. It may be messy, dirty, and even deadly, these authors suggest, but even potentially fatal interaction with the human community is ultimately more salvific than stagnant isolation unto oneself. There is some dissonance, then, between the few individuals that resisted the growing totalitarian claims of germ theory on modes of behavior, interaction, and purity, and the general cultural zeitgeist that was quickly gaining momentum in unquestioning support of this movement; it is this dissonance—a tension between cosmological polarities—that I explore with the following chapters. That there were those who resisted the claims of germ theory, and that such resistance worked against a general tide of unequivocal cultural acceptance, has been established in historical accounts. In the pages that follow, I aim to add epistemological depth to such accounts by exploring the cultural *effects* of such resistance. Although a fair amount of material is to be found about diseases specifically and sickness generally in the Victorian era, a broad literary history of germ theory grounded in explorations of its impact on the representation of different diseases and its implications for intimate interpersonal relationships has never been written yet, and such a history promises to be both revealing and fruitful.

All these existential reflections, of course, are possible because of the biophysical *realities* of the prevalence of infectious disease in the nineteenth century. As such, nineteenth-century fiction is likewise replete with disease, which became a vehicle through which authors could address the problems of selfhood and the self within a changing society. This vehicle was apt for the Victorians because of scientific developments in their century, but remains meaningful for us to consider today, because disease discourse is not purely scientific data about microbes multiplying or viral agents invading host cells. Disease matters to us because disease affects human bodies, rendering the sea of selves that constitute society suddenly nonfunctional,

or at least less functional than modern normative parameters would like to allow for. Disease discourse is therefore replete with all the sorts of anxieties of independent selfhood and presumed-upon able-bodiedness that disability studies, queer theory, and gender studies have separately set out to critique.¹² My project aims to extend these critiques into the as-yet-unexplored realm of disease and illness. Just as Bruno Latour, Donna Haraway, Simon Schaffer and Steven Shapin, Roy Porter, and others have problematized Cartesian paradigms of universal, independent, natural agency, I argue here that the implications of disease discourse do not end with personal questions of identity maintained and protected in a medico-scientific vacuum—which the following authors vividly demonstrated. As Kristeva has shown, identity *cannot* be substantiated in a vacuum, but is founded first upon notions of who others are. The self in search of subjectivity must necessarily traverse definitions of others in the formation of a self that can only be conceptualized as a sort of negative afterimage. The self without society is itself *antibiotic*. Indeed, the very concept of probiotics was developed in the late Victorian era, presenting real relevance to their own sense that the literal and metaphoric were not distinct subjects in the discussion of life, macroscopic or otherwise. The Victorians were perceptively aware, more than a century before Kristeva and modern-day biopolitics, that what we talk about when we talk about disease is necessarily about the self, but is also just as necessarily about the others that surround the self. In the atmosphere of *contagious* disease, however, these subjectivity-producing boundaries of selfhood and otherness are destabilized. Perceived threat to these boundaries all depends, of course, on how one conceptualizes disease, and in the nineteenth century, this was not always so clear in the face of changing scientific epistemologies.

Building on recent historical analyses delineating contemporary resistance to germ theory's politically motivated "discovery," my project fleshes out the cultural ramifications of these reactions by considering a handful of novelists and dramatists who stubbornly reworked the hegemonic paradigm of purity as a universally recognized good, and instead depicted contagion nestled comfortably within community and camaraderie. These authors quite readily used contagion itself to underscore the importance of community interactions and the vitiating effects of isolationism. Rather than emphasizing aseptic isolation, the practical imperative of germ theory, these authors indicated instead that interaction in the messy amalgam of humanity was the only source of moral progress in an increasingly secular society. Authorial engagement with and understanding of contemporary scientific developments in the Victorian era is well known; germ theory was

widely discussed in a broad range of periodicals, and most literate Victorians knew of contemporary developments in bacteriology. Voracious readers and publishers themselves, Victorian authors in particular often had their fingers closest to this *social* pulse of scientific data, building commentary about the import of such findings into otherwise typical Victorian plots. In light of this, my project argues that a great many late-century authors (often seemingly unrelated ones such as Thomas Hardy, Henrik Ibsen, and Mary Elizabeth Braddon) used their writing to depict the stifling world that a culture of “sanitary” isolation based on germ theory seemed to encourage. Rejecting germ theory’s phenomenological implication that absolute purity is possible or desirable, these authors insistently portray the value of human connection, however contagious, and depict social connection as valuable and necessary in spite of (and often *because* of) contaminating disease, instead of portraying disease as evidence of failed sanitary preemptives.

Each of my chapters focuses on a particular disease—plague, streptococcus, tuberculosis, and syphilis. By focusing on individual maladies, I ground my argument in the specific social conditions surrounding each disease, making palpable the ethical imperatives of authors such as Ellen Wood and Ella Hepworth Dixon. Yet the range of diseases I address—pulmonary, venereal, bacterial—shows how writers’ use of contagion broadly engaged the shifting conceptualizations of disease in this period. To make clear just how specific and incisive these authors’ critiques were, I have moreover grouped each disease with a specific social or legislative concern with which it was discussed in tandem contemporarily, and which the authors at hand draw into their fictional discussions. Generally, each of these sets of diseases and their concomitant social concerns are portrayed in the fictional work through focused authorial attention on one type of human relationship; thus, each chapter is trifocal in nature: microbial, relational, and sociopolitical. By focusing on these three levels of human interaction, I am able to highlight the broad implications the ideological work of germ theory had. More importantly, however, I have chosen these parallel foci in each chapter, because they are the same structural levels I see the authors of biopolitical resistance literature using to make their claims.

By way of introduction, my first chapter looks back to Daniel Defoe’s *A Journal of the Plague Year* (1722) and Mary Shelley’s *The Last Man* (1826) to examine community strictures in times of epidemic, alongside authorial responses to them in a time well before germ theory began to show up as a term in public discourse in the 1840s. By highlighting texts that assessed widespread, apocalyptic contagion even before germ theory, I isolate and

demonstrate the impact of disease discourse on society, especially when science-based legislation is at issue. In addition to looking more broadly at large community relations, I also address contemporary inoculation debates, which were increasingly common at this time.

For Defoe, isolation results in festering and further contamination. In *Journal of the Plague Year*, Defoe repeatedly depicts grotesque, noxious ruptures of contaminated material from sealed structures, bodies, and communities. Conversely, the successful characters and healthy spaces in the text are depicted via osmotic motifs that valorize bodies in continued circulation. Bodies—and for Defoe this includes bodies of trade, corporeal bodies, and international relations simultaneously—are effectively aired and ventilated through controlled flow within and between communities. In the cosmology he develops, this circulation is necessary for the vitality of personal, community, and national bodies. To a similar end, Shelley demonstrates the futility of successful isolation in *The Last Man* as she tracks her protagonists in their (largely) unsuccessful journey to isolate themselves from a London plague. Shelley employs topographical images of isolation such as island geography and mountain ranges to construct her view of isolationism as potentially protective, but generally more likely to result in the horrors of being cornered *with* disease and without resources, or, at best, being safe, alive, and utterly alone.

In discussion of both texts, I excavate authorial engagement with contemporary debates surrounding inoculation—the process of incorporating diseased matter into the body in a controlled manner in order to prevent being completely overcome by this same disease. This *techne* was promoted during the period of Defoe's novel, and increasingly urged in Shelley's time (in the form of Jenner's vaccination) as a universal mode of public health. Inoculation also sets the stage for my introduction of another term critical to this project as a whole—"risk encounters." Throughout the texts I highlight, I note authors promoting various forms of risk encounters that they in fact advocate as necessary for vitalizing individual and community progress. Both Defoe and Shelley, for instance, insist on this vitalizing importance of community, even though it was well known in the eighteenth century that plague, at least, was contagious. Their persistent communalism in the face of known contagious danger sets the stage for my broader consideration of the post-germ theory world, in which nearly *all* diseases, not just the bubonic plague, were understood to be communicated by the friends and family—the community—in which one lived.

After establishing the effects of epidemic on community mentalities—and authorial resistance to social isolationism by promoting risk encounters in their fiction—I turn to the post-germ theory era, when (as indicated by “Vegetable Villains” quoted above) microscopic findings seemed to reveal disease *everywhere*, lurking in every body with whom one interacted. My second chapter, “‘A Speculative Idea’: Childbed Fever, Early Germ Theory Debates, and (En)gendered Speculation in Henry James’s *Washington Square*,” explores the early development of germ theory in a transatlantic context using arguably the most British of American authors in the nineteenth century. By illustrating some of the early transatlantic debates regarding germ theory and the effects of this information upon a particular sociocommercial context, this chapter makes the first foray into elucidating the effects of germ theory upon popular culture and interpersonal relationships. *Washington Square* (1880) is in many ways a typically Jamesian novella—light on plot, heavy on character development, and seemingly anticlimactic in conclusion. Yet the novel’s ending is radically different, I argue, if read in light of the contemporary debates about germ theory and their effect on the father-daughter relationship that makes up most of the novel. This chapter addresses one of the earliest novels I analyze from the late Victorian period, and importantly represents some of the earliest concerns surrounding germ theory. These concerns dealt largely with the potential for the newly emergent professional obstetrician to contaminate patients with a then-deadly strain of streptococcus. Because of its composition at a time when germ theory was widely and indeed feverishly accepted (the 1880s), and its fictional situation in a time before this was so (the 1830s), this novel is valuable as an initial illustration of the trajectory of germ theory’s influence on late-Victorian culture. Moreover, James sketches out his female protagonist’s reaction to the risk-averse culture of the androcentric medical profession that surrounds her and, I argue, ultimately resists an abiotic, risk-averse life.

Having sketched out the broad cultural impact of contagion as well as the history of germ theory’s international development, my next chapters hone in on the Victorian era in Britain, exploring specific contagious illnesses and the social issues surrounding them during the advent of modern germ theory and bacteriology. Chapter 3 moves from the subject of familial relations to consider female homosociality; it compares metaphorical uses of tuberculosis as a vessel for representing the possibilities of female relationships with other women in female-authored texts that span the century,

including Charlotte Brontë's *Jane Eyre* (1847), Ellen Wood's *East Lynne* (1860), Mary Elizabeth Braddon's *John Marchmont's Legacy* (1863), and Ella Hepworth Dixon's *The Story of a Modern Woman* (1894). Thus, this chapter straddles time periods in consideration of the changing and always slippery mythos surrounding disease using perhaps its slipperiest of nineteenth-century embodiments, tuberculosis. In this series of novels, each female protagonist withers away, literally stifled by her isolation from other women. In this set of novels, isolation does not purify, it putrefies, and exposure to risk is depicted as necessary and life-giving. By juxtaposing tubercular deaths across the century, this chapter explores the ways in which germ theory drastically changed not only the symbolic potential of this disease, but also how female authors repurposed this metaphorical energy to address social questions relevant to women. In doing so, I show that these female authors used their fiction to insist against the isolationist imperatives of germ theory—which they demonstrated to be often used to subjugate and harm women—and implicitly highlight the value of social encounters, however risky they may be.

Moving from homosocial relations to heterosexual intercourse, the fourth chapter deals with syphilis and sexuality in literature published and performed around the time of the repeal of the Contagious Disease Acts. This chapter works through juxtaposition, showing the ways in which conceptualization of disease changed not only in response to germ theory alone but also in response to political changes that were catalyzed by these changing scientific understandings of disease. In doing so, this discussion tackles intimate sexual relationships—both marital and otherwise—in the Victorian era. Chapter 4, “Tainted Love: Venereal Disease, Morality, and the Contagious Disease Acts in Ibsen's *Ghosts* and Hardy's *The Woodlanders* and *Jude the Obscure*,” deals with syphilis and sexuality in literature published around the time of the repeal of the Contagious Disease Acts. In 1886, the Contagious Disease Acts were repealed. These laws—which attempted to control the spread of syphilis by allowing for the genital inspection of any woman suspected of being a prostitute (a stipulation that could apply to virtually any unescorted woman found out-of-doors after dark)—had been under attack for nearly two decades by burgeoning feminist organizations as well as periodicals such as *The Shield*, founded for the particular purpose of protesting the laws. Additionally, growing cultural awareness of the evidence of germ theory during this period—evidence that shed light on the specific microbiological agents involved in the spread of disease—was also of prime import in repealing the CDA. Women and doctors alike took to the polit-

ical battlefronts with a veritable artillery of scientific evidence, arguing that women could not be solely responsible for the spread of venereal disease. Their efforts were aimed at protecting not only against forcibly “inspected” women, but also the misguided angels of collective society’s houses who often innocently contracted syphilis from their husbands and passed it onto their children because of the misinformation surrounding the contagious nature of syphilis. Texts such as Sarah Grand’s 1893 *The Heavenly Twins* famously take on this issue of women’s sexual education.

However, this chapter seeks to call attention to the ways in which the changing understanding of epidemiology based on the new evidence of germ theory was also engaged by male authors seeking to upend the status quo through their fiction. To this end, this paper compares Thomas Hardy’s 1887 novel *The Woodlanders* with Henrik Ibsen’s play *Ghosts* (written in 1881 but first performed in England in 1891). Both of these works involve contagious sexual contact (fever contracted through oral contact and congenital syphilis, respectively) and both make striking statements about the implications of such contagion in terms of the standing social order. The representations of illness in both texts are complexly subversive insofar as they each intertwine contemporary medical and bioethical evidence into the tapestry of their stories, and urge readers to engage with risk encounters. In doing so, this chapter demonstrates even further the real political implications of disease conceptualization built into discussion of intimate sexual relationships, as well as returning to familial relationships in a discussion of the interactions of a mother and son.

In addition to opening Hardy’s and Ibsen’s texts up for more fruitful analyses of their progressive cultural work, reading these texts with an eye to germ theory evidence allows the close connections between the work of Hardy and Ibsen to emerge. Although one would be hard-pressed to deny their similarities in terms of tone and thematic purpose, virtually no scholarship exists that compares the two at length, and the striking fact that both men utilized the evidence of germ theory in works published within the same six-year period clearly indicates the utility of exploring the connections between these two authors in greater detail. The chapter concludes with an analysis of Little Father Time as a victim of congenital syphilis, a character who, in his diseased state, represents the haunting return of the repressed in this novel, the “nodal point” that undoes all the action of the plot. Thus, I complete this chapter by assessing a character that once again insists that self-protective isolation is neither fruitful nor possible. That is, Little Father Time’s actions both morally castigate Victorian social norms which have led

to his syphilitic condition (by mandating hidden sexual intercourses) and reject Jude and Sue's misguided attempts to simply eschew society altogether. Even in order to flout toxic social norms, Little Father Time's role seems to suggest, solutions *outside* of society—or, to put it another way, disregarding it—are untenable within the life of the social body.

Chapter 5 begins with this dilemma of attempting social progress outside of society. In Grant Allen's 1895 *The Woman Who Did*, the protagonist, like Jude and Sue before her, sets out to publicly flout Victorian sexual mores by living openly with her lover and by refusing to marry him on principle. However, her husband dies of typhoid fever during travel abroad, and the couple's daughter ends up resenting her mother's forced isolation of her from society and rebels by following the status quo to the letter. This letter, as Hardy notes in the epigraph to *Jude the Obscure*, "killeth." Indeed, Herminia is heartbroken when her plans backfire. She kills herself when her attempt at isolation—righteous though it may have been—end in her total loss of a relationship with her daughter. As mentioned earlier, her husband dies, having contracted his illness during the couple's attempt to physically move away from the space of British social norms by traveling to Italy. In this chapter, then, I cross-reference the previous concerns of the volume, which take up issues of women's social networks and isolationist tendencies in the wake of disease, and apply them to this novel, which features a woman who attempts to isolate herself from what she sees as the *diseased morality* of the available social networks—to no better end than her literary forebears. I connect this reading with another Ibsen play, the one he wrote immediately following *Ghosts* and which, I argue, further develops his notions on the subject. Both *The Woman Who Did* and *An Enemy of the People* incorporate typhoid fever into their work, drawing upon cutting-edge ideas of probiotic sewage breakdown to insist on openness and connection, even when taking on the establishment.

Building from Herminia's failed social experiment, I then present a revisionist reading of Ibsen's *An Enemy of the People*. I view Dr. Stockmann not as he is generally viewed (as an environmental and social advocate dedicated to cleansing the town of cholera), but as a character through whom Ibsen denounces both unmitigated authority and unregenerative purity, moral and microbial. When Dr. Stockmann is run out of the town hall with cries of "Folkefiende! Folkefiende!" echoing behind him, he is traditionally read as a man of high moral aims victimized by the middle-class masses jealously protecting their profit and power even though lives are at risk. Yet Stockmann, who advocates the formation of an oligarchy of scientists to rule

via “objective” knowledge, is perhaps less the play’s hero than its primary hazard. The chapter, and the book, closes with a brief discussion of Hardy’s odd novel about free love, *The Well-Beloved*, which was written before his work on *Jude the Obscure* and then rewritten after it, constituting Hardy’s own development of his resistance to contemporary biological mandates of purity and isolation. Hardy’s surprising insistence on free love in this novel can, I argue, be overlaid against contemporary sewage innovations, as can his insistence on openness and connectivity that was beginning to be discussed in the late century as understanding of probiotics developed.

In focusing on dramatic and fiction-based representations of disease and relationship structures, I hope to focus on the potential of these malleable art forms to explore the limits of human relationships, as well as the boundaries of subjecthood in a diseased world. Because I am less interested in science-making than the cultural effects of science, I have excluded scientific texts from my larger analyses (although they are included as supplements to my readings of fiction). Additionally, while this study covers nineteenth-century British fiction and drama, it also addresses Scandinavian drama. There are a few reasons for this. First, Ibsen’s plays burst onto the British literary scene in the late 1880s—precisely the period covered by my project—greatly influencing British literature and culture at this time.¹³ Secondly, his plays directly influenced Thomas Hardy, whose fiction is in many ways strikingly similar to Ibsen’s drama in terms of its aims and composition dates; in spite of this, almost no work exists connecting the work of these two authors—my fourth and fifth chapters develop this connection. Third, Ibsen expounds upon disease at great length and in many ways much more explicitly than his British counterparts. Finally, the rigidly moralistic society of Norway that Ibsen devoted his work to speaking out against bears many striking resemblances to and illustrates vividly the widespread influence of British Victorian culture, a dynamic that has not been fleshed out in literary studies thus far.¹⁴

“We Drove in a Body to Science”:

The Cultural Tides of Nineteenth-Century Scientific Inquiry

Before embarking upon these chapters in their entirety, it is worth taking a moment to consider the general state of the sciences in the Victorian era both before and during germ theory’s development. To say that scientific understandings progressed in the nineteenth century is an understatement

akin to saying that the invention of the atomic bomb altered warfare. The rapid rate of change across all scientific disciplines, as well as pervasive cultural absorption of these changes, was staggering. From our standpoint in an era when most scientific discoveries are communicated in jargon-laden academic journals accessible neither physically nor intellectually to even a well-educated layman, it is difficult to conceive exactly how staggering these changes were. Nineteenth-century science was indeed explosive, launching into the unknown everything Victorians thought they knew about—the bounds of space, time, the universe itself, and humanity's place in it. Moreover, because scientific studies were less specialized at the time, the average middle- or upper-class reader was well apprised of these developments, which therefore seeped easily into the zeitgeist of the era. The very word *science* is a Victorian invention and did not appear in the OED until 1840.¹⁵ As the findings of William Herschel, Charles Lyell, Charles Darwin, and others like them became widely acknowledged, science, a field that ostensibly aimed to pin down objective knowledge of the world, suddenly seemed to destabilize it, loosing man from his moorings and setting him adrift in the cosmos of destabilized cosmologies.

For example, the overthrow of the biblical timeline of the world's history—made most famous in Charles Lyell's *Principles of Geology*—seemed to stretch the path of history back into an inconceivably long void of prehistory, exposing time as an "abyss"—a looming question mark of unimaginable proportions rather than a comforting and stable presence, populated with known and recognizable characters.¹⁶ In his well-known *Victorian People and Ideas*, Richard Altick describes the schematic adjustment on the collective brains of Victorians as "staggering."¹⁷ His description is apt, as all of the fossils catalogued in Lyell's massive tome, to note one example, seemed not to crystallize a permanent historical narrative, but rather to suggest the impossibility of ever gathering enough specimens to do so and the ultimate unknowability of the bounds of time.¹⁸ Lyell himself lamented the advent of "discoveries which extend indefinitely the bounds of time . . . [and] cause the generations of man to shrink into insignificance and to appear, even when all combined, as ephemeral in duration as the insects which live but from the rising to the setting of the sun."¹⁹ Novelist and scientist alike expressed their existential anxiety in the face of these discoveries—the literal cliffhanger embedded in Thomas Hardy's *A Pair of Blue Eyes* is critically famous today for capturing the layman's response to geological innovation. The protagonist, Henry Knight, a geologist, hangs off the edge of a cliff, holding on for dear life, and yet spends what could be his final living

moments in philosophical contemplation of a trilobite fossil he finds himself face-to-face with on the cliff's edge. As he realizes the essential unity of all creatures throughout history in their joint trajectory toward death and decay, "time closed up like a fan before him. He saw himself at one extremity of the years, face to face with the beginning and all the intermediate centuries simultaneously."²⁰

The radical shifts in Victorian understanding of the universe were compounded by advances in astronomy. If geology expanded Victorian understanding of time to an unimaginable, yawning abyss, astronomy expanded understanding of space to the extent that man seemed not only an insignificant blip in the geologic strata but also an insignificant speck in an infinite cosmic expanse.²¹ In 1831, for instance, Thomas Henderson plotted the distance to the nearest star at 24 trillion miles from the earth.²² This discovery represents just one example of the sort of astronomical developments underway at this time. The advent of the second law of thermodynamics in the 1850s, which proved (among other things) the eventual heat death of the universe, was no less comforting.²³

Advances in chemistry and microscope technology allowed scientists to go past measuring and charting stars to analyzing their physical, chemical components using spectroscopy.²⁴ In fact, it was from this capability that the field of astrophysics began to emerge.²⁵ The return of Halley's Comet in 1758 instilled Victorians with a confidence that cosmic occurrences were not signs of world events or harbingers of doom but rather calculable, predictable events that could be analyzed by mathematical and scientific measurement.²⁶ Importantly, the travel of Venus between the sun and the Earth in 1874 and 1882 (which confident astronomers attempted to map, measure, chart, and photograph—all failed efforts) shook this confidence.²⁷ Thus, the heavenly bodies remained tantalizingly within reach, but often eluded exact scientific comprehension. Moving on from geology, Hardy went on nearly ten years later to explore the existential crises of the casual astronomer. Astronomer Swithin St. Cleeve and his sweetheart Viviette Constantine, protagonists of *Two on a Tower*, spend their evenings in the early part of their romance traversing the starscape together with the telescope Viviette has purchased for Swithin. Hardy describes the simultaneity of the aching beauty and gnawing terror of probing the depths of the heavens too persistently:

They plunged down to that at other times invisible stellar multitude in the back rows of the celestial theatre: remote layers of constellations whose shapes were new and singular; pretty

twinklers which for infinite ages had spent their beams without calling forth from a single earthly poet a single line, or being able to bestow a ray of comfort on a single benighted traveler. . . . Having got closer to immensity than their fellow-creatures, they saw at once its beauty and its frightfulness. They more and more felt the contrast between their own tiny magnitudes and those among which they had recklessly plunged, till they were oppressed with the presence of a vastness they could not cope with even as an idea, and which hung about them like a nightmare.²⁸

“The presence of a vastness”: this is perhaps the most apt way to describe the souvenirs of nineteenth-century scientific fervor. For all their intellectual efforts, busy scientists seem to provide society with the sense of a palpable absence of certainty and a concomitant rendering asunder and snatching away of previous certainties. The only surety left seemed a bleak one indeed: religious discourse seemed consequently but certainly impotent as a means of fully explaining this vast new nature as revealed not by a Messiah, but by science, and science itself provided no new helpful cosmology but merely set society adrift in unnavigable waters, with no compass to point out safe harbors.

Of course, Darwin’s theory of evolution is the most famous culprit targeted for secularizing society, as J. Hillis Miller, Gillian Beer, and George Levine—to cite just the most famous examples—have all explored at length. Miller’s 1963 study, *The Disappearance of God: Five Nineteenth-Century Writers*, which focuses on secularization more than it does Darwin, remains helpful in distinguishing what is meant by a secular culture, or a culture without God, especially given the undeniable fact that many Victorians continued to identify as Christian in spite of this ostensible secularization.²⁹ Although it would be impossible to claim that Victorians were by and large atheists, even for those who continued to adhere to the religion nominally or spiritually, “the lines of connection between [man] and God ha[d] broken down . . . God himself has slipped away from the places where he used to be. He no longer inheres in the world as the force binding together all men and all things.”³⁰ This secularization left humankind, content for centuries to rely upon religion as a guiding social force, in a strangely bewildering place, lost in the desert of uncertainty perversely bequeathed to him by science. Or, as Matthew Arnold most aptly put it (and as Miller in fact quotes to this end), Victorian science seemed to jilt society at the altar,

bringing humanity to the brink of new understanding, and then leaving him alone to sort out the results for himself—leaving him, as it were, “wandering between two worlds, one dead, / The other powerless to be born.”³¹ Victorians, then, found themselves alone in a wilderness created by their own intellectual capacity and faced with “the problem of learning to live with and understand” the world around them even while “the God who was thought to have created all that abundance and variety of differences was being expelled.”³²

Germ Theory and the Pursuit of Purity

George Levine asserts that continued scientific inquiry was, paradoxically, one way Victorians navigated the new world in which they had been left adrift by science itself—one way, that is, that they attempted to “know” this world objectively in a time of constantly shifting cosmologies. As he claims in his discussion of Huxley, “scientific knowledge” seemed to be “beyond prejudice, and claim[ed] the authority lost by religion.”³³ What I would like to suggest here, however, is that germ theory (which associated one microbe with each illness, rather than citing miasmas, or noxious vapors, as disease vectors) in particular offered Victorian society a form of scientific knowledge that seemed somehow more objective and stable than previous fields of inquiry. Geology had rendered asunder the bowels of the earth, astronomy had opened up the black, gaping maw of the heavens in all its terrifying infinity, and even the history revealed by Darwinian evolution had yanked man from his pedestal as a supremely perfected being, and situated him instead alongside the puny trilobite. Following the frenetic embrace of germ theory in popular culture, the simple and palatable idea that one microbe accompanied one illness washed over society like a soothing bath. The notion that the heretofore spiritually and physically murky realm of death and disease could now be easily grasped, and perhaps one day controlled, came to a society more than willing to accept this palliative as a veritable social panacea. The world seemed on the verge of resituating itself along the teleological path to perfection that Darwin so famously destabilized. And the greater part of Victorian society clung to this potential certainty with a vise-grip of tensile strength possible in only the most existentially anxious. The stranglehold of these axioms—cleanse, purify, sanitize—launched a countercultural movement in literature that the following chapters hone in on. However, this stronghold is no longer obvious to us, both because

of our 160-year remove from the cultural tenor of the Victorians, but also because we have simply inherited their attitudes toward germs—as our current struggle with antibiotic-resistant pathogens demonstrates.

Although Pasteur's work with yeast and microbes in France is perhaps the most famous set of early experiments regarding germ theory, similar work was going on throughout Europe, and the findings of all such scientists were published widely. In general, the period of the 1860s and '70s were marked by a decisive move away from a belief in miasma theory to the belief that specific illnesses were caused by unique strains of germs. While variations of germ-based theories of disease had been proposed earlier—indeed, even as early as ancient times—and although groups of people continued to espouse miasma theory into the late nineteenth century, the ten-year period between 1860–1870 marks the main period of experimentation with and popularization of the idea of microbial vectors of disease, after which (in the 1880s and onward) germ theory and bacteriology had decisive hold of popular and scientific culture. In 1861, Ignasz Semmelweis published meticulous treatises on the contagious nature of a specific disease, puerperal fever, and was fired for his writings, but his work contributed generally to the understanding of microbial infection.³⁴ As will be seen in chapter 2, his work was taken up by a number of physicians in America, including notable thinkers such as Oliver Wendell Holmes.³⁵ In England, Joseph Lister, whose name is now immortalized in the antiseptic mouthwash Listerine, experimented with wound infections and the antiseptic and aseptic techniques for combatting them.³⁶ Lister's work, like Semmelweis's, utilized specific examples of infection to promote the idea that microbial agents were involved in infection and could be combatted. A decade or so later, in the 1880s, Robert Koch would rise to fame for his identification of numerous bacterial pathogens, including the vector for the infamous tuberculosis.

After the initial period of experimentation with germ theory in the 1860s and 1870s, the field of bacteriology developed in the 1880s as the source of evidentiary support for the theory. For instance, Pasteur's famous foundational work with yeast and microorganisms in the late 1860s and early 1870s (which proved the existence of organic, growing material in aerobic environments) led to his later work treating rabies and anthrax in the 1880s (after he specifically identified the causative agents associated with these illnesses). More prominent for his bacteriological research specifically, Robert Koch's work with bacteria in the early 1880s led a confident march forward in the scientific profession and the science-consuming public as his experiments bolstered the certainty that all germs could be found, secured