

VICTORIAN FICTION AND THE ORIGINS OF MODERN FEELING

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CURRICULUM VITAE

Rebecca Summerhays was born on February 28, 1975 in Salt Lake City, Utah. She graduated *cum laude* from the University of Utah in 1996 with a major in English and a minor in French. In 1999, she completed an M.A. in British and American Literature, also at the University of Utah. She earned her Ph.D. in English from Brown University in 2011. While at Brown, she received a University Fellowship (2002-03) and a Graduate Student Dissertation Fellowship (2007-08). She taught a range of literature and writing classes at the University of Utah and Brown University. Since 2008, she has taught introductory and intermediate writing courses as a Preceptor in the Harvard College Writing Program. She received certificates of distinction in teaching from Harvard University in Spring 2009, Fall 2009, and Fall 2010. In 2009, she received a Fuerbringer Faculty Grant from Harvard University, which enabled her to conduct research at both the British Library and the Wellcome Library in London. She has spoken on the relationship between nineteenth-century literature and science at a number of conferences and seminars in both the United States and abroad. She is currently working on an article discussing Charles Darwin's concept of the "living fossil" and Thomas Hardy's fiction. She lives in Providence, Rhode Island and continues to teach in the Harvard College Writing Program.

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INTRODUCTION

Victorian Fiction and the Origins of Modern Feeling

This dissertation explores the transpersonal forms of thinking and feeling that became imaginable in the nineteenth century, when Victorian literature and science together defined the human as a principally biological being. For a diverse group of naturalists and scientists writing in the nineteenth century, including William Paley, Sir Charles Bell, and Charles Darwin, the definition of the human body was by no means stable. If the debate for these scientists and naturalists centered upon the question of how to theorize and represent the body's construction, governance, and development, nineteenth-century fiction was particularly adept at recognizing, testing, reconfiguring, and naturalizing the new forms of human feeling and affiliation these emergent accounts of the body made thinkable. The novels I discuss here, including *Frankenstein* (1818), *Jane Eyre* (1847), *Tess of the D'Urbervilles* (1891), and *Dracula* (1897) are especially sensitive to how human feeling and community must change under these new and competing accounts of the body—particularly sympathy, as a social emotion that relied upon the observation and experience that had been associated with the mind. The novels I discuss accordingly explore how individuals think, feel, and connect with one another when they can no longer claim to control their own thoughts and feelings.

These claims challenge two predominant and related assumptions of contemporary literary criticism: the notion that eighteenth-century moral philosophy

(especially as realized in Adam Smith's *Theory of Moral Sentiments*), with its emphasis on reflection, detachment, and experience, informs Victorian representations of human emotional and epistemological states; and the supposition that the new, impulsive body that emerges in the nineteenth century is entirely promiscuous. In testing the new accounts of the body that nineteenth-century science produced, these novels provide sophisticated accounts of both the problems and progressive potential inherent in these new configurations of the body and ask readers to rethink provisionally what it is that makes them human. Beginning with *Frankenstein*, I argue, novels resist the classificatory logic that prioritizes the enlightened processes of observation, reflection, sympathy, and self-regulation over the instinctive impulses. The kind of subject that we find in a nineteenth-century novel like *Jane Eyre*, for example, manages her behavior, not through the process of reflective self-regulation, but by acting upon sensations collected through the body's multiple and contradictory seats of consciousness.

My claims likewise run counter to the related critical assumption that fiction performs an important social role by giving form to the reflective, rational, deeply personal interiority that permits autonomous subjects to cohere as a liberal society. By arguing that the body's impulses, rather than sympathy and tolerance, unite humans to one another, the novels I discuss here preclude the possibility that humanity can cohere as a community of autonomous subjects, or that fiction participates in the production of such a tolerant social arrangement. These novels, I suggest, force us to consider instead what becomes of that human community—and the novel form—once the human becomes continuous with the rest of biological life. They imagine that humans can experience the same kind of physiological compatibility that exists between birds and flowers, or in a

swarm of bees. This way of imagining human affect eliminates the distinction among human subjects and conjoins all in a single “species body.” For these novels, this new, collective form of human being is better adapted to a shifting, diffuse modern world. The shared instincts and nervous impulses that bind the kind of aggregate subject we find in *Jane Eyre* or *Dracula*, for example, permit instantaneous, transpersonal modes of feeling and communication. The knowable universe in these novels therefore expands to include information that can impulsively and instantaneously spread, independent of the mind’s direction. In both the literary and scientific texts I discuss, the body “comprehends” what the mind cannot possibly imagine. Subsequently, in these novels, beings who relate to one another through the circulation of impulse are better suited to navigate a world that hardly resembles the observable, readable world that Locke and Smith had in mind.

Enlightened Subjects

Anatomists and scientists have taken issue with human exceptionalism from time immemorial by stressing the biological life that humans and animals share. They understand human beings as one species among many that participate in what Laurie Shannon calls the “souledness” or “creatureliness” common to all biological life. Shannon picks up this strand of cross-species thinking in Renaissance science. Within the emerging culture of dissection, an anatomist like William Harvey could unapologetically explore the biological structures and functions—particularly the circulation of the blood—common to any number of species, including human beings. Biological knowledge thus depended, Shannon contends, “openly and explicitly on animals, not just as comparisons and as silent substitutions for the human, but as direct evidence of relevant truths about embodiment” (15). Such knowledge of the body did not

distinguish the human as a separate and exceptional creature but, to the contrary, imaginatively embraced the notion of a creatureliness common to all living beings. This view continued to flourish as eighteenth-and nineteenth-century studies of the brain and the nervous system assigned thought and emotion to the competing operations of the body's many biological systems.

In the eighteenth century, writers such as Bernard Mandeville, in *Hypochondriak and Hysterick Passions* (1711) and George Cheney, in *The English Malady* (1733) theorize the physical consequences of different kinds of experience, positing that the experiences available exclusively to the wealthy will produce an unhealthy body. In their models, the brain is the center of all emotional and mental activity, and the nerves are the routes through which the animal spirits flow to the other organs. In his medical treatise, Mandeville argues for the “immediate commerce” between the soul and the body (125), a commerce enabled by the intercession of the animal spirits that course through the nerves between the brain and the stomach. For both Mandeville and Cheney, the brain is the seat of thought and emotion and the same “subtle” spirits govern the processes of both the brain and the stomach, therefore, the expenditure of spirits in one of these areas “robs” spirits away from the other (134). For Mandeville, social conditions create the nervous body. Those of the leisured class who “make themselves easie” are therefore more susceptible to physical disorders because they have the leisure, unlike those with “lower Fortunes,” to expend their spirits on extravagant lust, emotional excess or intellectual pursuits (150). Over twenty years later, Cheyne will argue similarly that the luxurious habits of the wealthy, particularly the consumption of the luxury items available in an expanding empire, are a major contributing cause of nervous disorders

(18, 34); and by the end of the eighteenth century, physicians such as Thomas Beddoes, Thomas Arnold, and Thomas Trotter argue that the increasing wealth of the middle class renders it susceptible to the same dangers.¹

At the same time, the theories of reason and moral sentiment, not to mention the novel itself, took up the individual human subject—rather than family, a class, or a species—as an object of analysis. By so doing, such accounts of humanity overlooked the biological continuity between man and animal and divided humans from the rest of the natural world on the grounds that mankind alone possesses the ability to reason and reflect on himself. This interest in the human mind and intellect did not end scientific interest in the human as a biological specimen, but introduced a cultural division marked by a split between biological and intellectual being. Eighteenth-century science took as its primary object of study any and every body (although such anonymous bodies were usually from the demographic groups who could not very well afford burials). Literature and philosophy, in contrast, took as their object of knowledge the individuated human consciousness. In this way, my project begins at the end of a tradition that both proposed the species were discrete and classifiable in biological terms but also defended, on grounds of reason, spirituality, and emotion, the idea of an exceptional humanity.

The model of the self-enclosed, self-governing individual that John Locke establishes in *An Essay Concerning Human Understanding* (1689) provided a basis for generations of writers and philosophers to build upon. Locke's metaphor of the unfurnished cabinet spatially separated the individual mind from the exterior world, and thereby constructed the mind as interior, personal, and private. According to Locke, the

¹ See Logan, *Nerves and Narratives* (1997), for an extended discussion of the work of these physicians.

individual uses the rational faculties of observation and reflection to furnish this empty cabinet—to transform select sensory impressions into the mind’s personal property. This model permits Locke to produce a self-enclosed individual equipped to manage his own impressions, ideas, emotions, and actions, an individual analogous to the one Locke posits in his *Second Treatise of Civil Government* (1690). In both accounts, the individual produces property—both intellectual and private property—in the same way: By virtue of his own labor. This same self-enclosed, self-regulating individual informs the model of sympathy that Adam Smith proposes in *The Theory of Moral Sentiments* (1759). According to Smith’s model, the sight of another person expressing emotion—the primary sensory experience—triggers the sympathetic response. Yet because the senses alone cannot inform one individual of another’s feelings, the spectator must first, through observation and reflection, ascertain the cause of the displayed feelings and then imagine what he would feel in the other’s position. This imaginative leap permits an individual to bring another person’s emotions “home” to himself and to “adopt” them—to participate in another’s feelings without becoming infected by them.

Critical commonplace has it that these models of individual sympathy and tolerance endured into mainstream nineteenth-century texts and informed nineteenth-century novelistic representations of respectable human being and affiliation. This dissertation, in contrast, brings together a range of rather disparate scientific writers, chosen less for the continuity between their ideas and more for their collective refusal to take Locke’s notions of self-enclosure or self-regulation for granted in theorizing the body and its sensations. For Paley, the human body is a mechanical object; for Bell, it is a conglomeration of competing systems, governed by the nerves, and for Darwin, it is a

“living fossil.” Despite vast differences among them, for these nineteenth-century scientific writers, the world’s organisms are hardly self-enclosed, self-regulating subjects. Instead, these writers collectively imagine that the world’s species, including humans, are adapted to one another in networks—whether based in the body’s mechanical design, its competing systems, or its residual structures and reflexes—that do not end with the boundaries of any one body. The biological species, in each of these accounts, comprise a single organism that includes human being.

The encroachment of biology on the definition of human being brought with it the possibility that biology determines human action and connection, rather than reflection, judgment, and agency. Under this way of thinking, human beings, like the animals, are bound to one another in the kind of unselfconscious, ecstatic relation that Giorgio Agamben, in *The Open* (2004), calls “animal captivation,” where unselfconscious networks between organisms limit and define the world for each. A being becomes human, Agamben claims, when he becomes conscious of the fact that he is closed off from animal existence—when he awakens from his captivated relation to the natural world to identify this “ecstatic” relationship as something that he himself cannot experience. The question of where humans belong in this instinctual landscape, as I will show, is as important to Victorian authors, from Shelley to Stoker, as it to Agamben. Captivation, for Agamben, is something that we “might never find in the relations that bind man to his apparently much richer world” (Agamben 47). I argue instead that nineteenth-century fiction can be characterized by its varied attempts to extend the possibility of animal captivation to human subjects.

Liberal Ideology and Literary Criticism

Contrary to these and countless other textual indications, a large part of literary criticism persists in what Elizabeth A. Wilson (2004) calls a “fierce antibiologism” (13) that separates psychology from biology and privileges the operations of mind over those of the body. Specifically, since the publication of F. R. Leavis’s *The Great Tradition* (1964) and Ian Watt’s *The Rise of the Novel* (1957), literary scholarship has equated nineteenth-century fiction with the achievement of a detached, reflective, and immanently perfectible self. They have done so by constructing the tradition of the English novel upon the basic premise that novels, by definition, take as their primary focus the independent development of private consciousness and the relationship between that consciousness and the human community. Leavis, for example, argues that the few great English novelists—Austen, Eliot, James, and Conrad—share an unparalleled insight into the complexities of the private mind. Novels like *Daniel Deronda* and *The Portrait of a Lady* earn a place in Leavis’s canon through their ability to represent the “creative collaboration” (22)—the nuanced personal exchanges—that relate one private mind to another. By doing so, these novels construct, one relationship at a time, a linguistic civilization that Leavis idealizes: “a humanity capable of communicating by the finest shades of inflection and implication” (16). Watt, in turn, historicizes Leavis’s claims. For Watt, the formal innovations that we attribute to the novel—innovations in plot, characterization, and description—arise entirely from the form’s concern with representing the private experiences of autonomous subjects. Only a very particular kind of society—one “mainly governed by the idea of every individuals’ intrinsic independence both from other individuals and from that multifarious allegiance to past modes of thought and action” (60)—can produce a novel. According to Watt, the novel

therefore finds its most fertile ground in the eighteenth century, as the period coinciding with the rise of modern industrial capitalism and the spread of Protestantism, governed by the premise that all beings, regardless of social status or inheritance, can become self-governing subjects.²

Over time, literary criticism has consolidated an account of nineteenth-century fiction that has not moved far beyond Watt's claims linking the novel form to the production and perfection of the liberal subject. In *The Divided Self* (1969), for example, Misao Miyoshi claims that nineteenth-century fiction takes as its principal focus a "divided self," split between passion and reason, and represses the passionate half of this self to produce a coherent, rational subject. For John Kucich (1987), emotional repression is critical to the production of this self: as an "instrument of individuality," the discourse of repression that we find in many nineteenth-century novels "heightens and vitalizes emotional autonomy, rather than threatening or suppressing it" (3), and grants both the subject and reader of fiction a degree of social authority based upon this sense of emotional depth. This subject relates to the world from a detached, critically distant perspective, and engages in what Amanda Anderson, in *The Powers of Distance* (2001),

² As Watt explains, a novel is produced only by a "whole society mainly governed by the idea of every individuals' intrinsic independence both from other individuals and from that multifarious allegiance to past modes of thought and action denoted by the word 'tradition'—a force that is always social, not individual. The existence of such a society, in turn, obviously depends on a special type of economic and political organization and on an appropriate ideology; more specifically, on an economic and political organization which allows its members a very wide range of choices in their actions, and on an ideology primarily based, not on the tradition of the past, but on the autonomy of the individual, irrespective of his particular social status or personal capacity. It is generally agreed that modern society is uniquely individualist in these respects, and that of the many historical causes for its emergence two are of supreme importance—the rise of modern industrialist capitalism and the spread of Protestantism, especially in its Calvinist or Puritan forms" (60).

describes as “the ennobling practices of reflection” that are critical to modern life. As she explains, the kind of distant, detached reflection that we find in George Eliot’s fiction repairs “the dislocations wrought by nontraditional or defamiliarizing forms of life” (13). For many critics, nineteenth-century fiction performs a crucial social function by reproducing this rational, private, reflective subject. Pam Morris (2004) best articulates this critical position when she describes the role that nineteenth-century fiction performs in forming what she calls a “collectivity of difference” (6)—a new, inclusive form of human relation that emerged in the mid-nineteenth century that carves out a place for human difference within the social body. Novels, she explains, are critical to the construction of a liberal society because they routinely produce “a spacious inwardness or sensibility as an individualized territory distinctively set apart from the embodied crowd” (24). In other words, novels are socially relevant because they represent the kind of interiority that permits readers to create themselves as private, sensitive, unique subjects, separate from the vast, anonymous, “embodied” mass. In *The Burdens of Perfection* (2008), Andrew Miller equates this self-regulating subject with modernity itself, arguing that the desire to improve “has come to seem not merely an essential expression of individualism, though it often has been that, but a defining aspect of modernity” (1). For Rachel Ablow, in *The Marriage of Minds* (2007), a sympathy characterized by harmony and self-regulation persisted into the nineteenth century and remained the principal way that Victorian novels grasped and represented the ideal Victorian marriage.

The critical understanding of the novel form is so deeply entrenched in liberal ideology that even criticism that considers the novel’s treatment of the body routinely concludes that the novel considers the body’s impulses as retrograde. Sally Shuttleworth,

for example, was one of the first to read Victorian novels in conjunction with Victorian physiology. In *Charlotte Brontë and Victorian Psychology* (1996), she recognizes the impossible position that Victorian fiction grants to the human subject, explaining that the individual, in this novel, “is figured both as an autonomous unit, gifted with powers of self-control, and also as a powerless material organism, caught within the operations of a wider field of force” (28). In keeping with the liberal tradition that has informed studies of the novel form, she too concludes that *Jane Eyre* ultimately prioritizes self-control over impulse: in her reading of the novel, “order and structure are imposed on disruptive, inchoate material” (152). Scholars since Shuttleworth likewise conclude that in the mid-nineteenth century, “bodily manifestations became signs of proximity to brutish origins, while bodily refinement was a measure of cultured distance from such debasement” (Morris 27).³ With few exceptions, critics have uniformly suggested, along with Shuttleworth and Morris, that Victorian fiction associates the body and its impulses with the lower classes or with the “savage” and utilizes the discourse of sensation only for nefarious purposes: to limit women’s reading, as Kate Flint has argued, or professional involvement, as Athena Vrettos suggests.

I prefer to follow the lead of recent critics, including Jonathan Crary, Elizabeth Wilson, Alan Richardson, and William A. Cohen, who see nineteenth-century British culture as seizing on both residual strains of thinking and contemporary scientific studies to relocate psychology in biology. Critics like Crary and Wilson have led me to wonder how novels articulate the new kinds of thought and feeling that became imaginable when

³ The impulsive body has become an object of interest to many literary scholars in recent years, including Kate Flint, Athena Vrettos, Peter Logan and Jane Wood, who reach similar conclusions to the one I have described here.

nineteenth-century science entangled these operations with the operations of the eyes, the brain, and the nerves. In their studies of the body and nineteenth-century fiction, both Richardson and Cohen refuse to take for granted the kind of self-regulating, self-enclosed subject that directs so many studies of nineteenth-century humanity and feeling. Cohen, for instance, begins his *Embodied* (2009) with the premise that in the nineteenth century, “embodiment came to be the untranscendable horizon of the human” (xii). In this spirit, I am particularly interested in the way that in nineteenth-century fiction, embodiment became the basis of human feeling and affiliation. In this regard, I agree with Andrew Miller, who suggests that a novel is principally interested in “attempt[ing] to come to terms with, to comprehend, the bare presence of others” (4). Where both he and others, however, presume that novels treat self-regulation and sympathy as the basis of human feeling and companionship—improvement, for Miller, is what allows us to grasp the “bare presence of others”—the novels I study ground human community and natural sympathy in the impulses and instincts that new research in the body made imaginable. In so doing, as I will explain, these novels disfigure the *Bildungsroman*, or novel of education, and destroy the form of domestic fiction, two forms invested, respectively, in developing autonomous individuals and in reproducing the affective relations among these individuals.

Fiction and Feeling

The *Bildungsroman* and the form of domestic fiction simply cannot accommodate the contradictory modes of humanity that emerge at the beginning of the nineteenth century with the production of Shelley’s monster. Simply put, a *Bildungsroman* is a novel of development that narrates and naturalizes two complementary processes: the self-

fashioning of an essentially Lockean subject, and the social integration of that subject into a community of individuals that resemble himself.⁴ As George Levine has explained, the *Bildungsroman* detaches selfhood from social status and inheritance, and reassigns human value to a “deeply personal, private, and highly interiorized individuality” (*Victorian Novel* 81), which a being attains only as he develops his own internal resources and rational faculties. This being matures into a fully coherent, self-regulating individual as he acquires the capacity to think and to act for himself—to reflect privately upon conflicting and even antagonistic external circumstances, and to determine his own course of action in response to those circumstances.⁵ In narrating the gradual self-fashioning of this individual, the *Bildungsroman* shapes its reader as a similarly private, autonomous self and performs what D. A. Miller claims is the novel’s central ideological purpose: to “confirm the novel-reader in his identity as a liberal subject” (*Novel and the Police* x).

⁴ Critical discussions of the *Bildungsroman* are remarkably consistent on this basic definition of the genre. For Michael Beddow, the *Bildungsroman* “requires both the clarification of the individual’s unique personality and the expression of that personality in a mode of life in which the individual is integrated into a community of self-realising persons which shows forth the fullness of human potential” (157). Although he calls the genre a “phantom,” Marc Redfield likewise describes the *Bildungsroman* as the genre we generally believe “narrates the acculturation of a self—the integration of a particular ‘I’ into the general subjectivity of a community and thus, finally, into the universal subjectivity of humanity” (38). Franco Moretti historicizes the genre, explaining that the *Bildungsroman* designates “one of the most harmonious solutions ever offered to a dilemma coterminous with modern bourgeois civilization: the conflict between the ideal of self-determination and the equally imperious demands of socialization.” (15). Most recently, Joseph Slaughter concurs with these basic definitions, explaining that “the idealist *Bildungsroman* has its own double subject; it imagines a relational individualism, a harmonious concordance of the person’s universalist inclination and the interpellative force of social relations, of which the person is a part and an effect” (1410).

⁵ As Levine explains, “it is not rank or inheritance that determines value and success, but ultimately what one does” (*Victorian Novel* 82). The *Bildungsroman* “dramatizes that identity, vocation, and social status are no longer merely inherited, but are rather attainments of aspiring individuality in its encounters with new economic and social realities” (*Victorian Novel* 89).

It might seem contradictory to require this subject voluntarily to restrict his personal agency in exchange for membership in the larger human community, but for Franco Moretti, the *Bildungsroman*'s primary symbolic purpose is to perform precisely this socializing function.⁶ According to Moretti, the modern world requires individuals to think of themselves in contradictory ways: as both autonomous beings, capable of regulating their own behavior and actions, and as social beings, whose human value comes through membership in a network of individuals that resemble themselves. Moretti has famously named the *Bildungsroman* the “‘symbolic form’ of modernity” (5) for its ability to bring into companionship these competing demands.⁷ Domestic fiction is something of a sister genre to the *Bildungsroman* because the marriage plot so readily aligns the interests of the individual with those of the group. Jane Austen's novels, for example, rely upon marriage to represent socialization as a familiar, comforting, and desirable achievement. Her novels insist that individuals achieve full personhood only as they voluntarily relinquish some degree of personal agency and attach themselves to similar individuals in companionate marriages.⁸ Given this concern with producing

⁶ According to Moretti, “self-development and integration are complementary and convergent trajectories, and at their point of encounter and equilibrium is that full and double epiphany of meaning that is maturity” (18-19).

⁷ To be clear, Moretti argues that most novels are not, in fact, *Bildungsromane*. For Moretti, the *Bildungsroman* in England lasts only for a century and concludes with *Middlemarch*—and with what he sees as the disintegration of the individual. As he explains, “...[N]o convention outlives the fall of its foundations. And when the new psychology started to dismantle the unified image of the individual; when the social sciences turned to ‘synchrony’ and ‘classification’, thereby shattering the synthetic perception of history; when youth betrayed itself in its narcissistic desire to last forever; when in ideology after ideology the individual figured simply as a part of the whole—then the century of the *Bildungsroman* was truly at an end” (227-8). I suggest that the disintegration of the individual that Moretti places late in the nineteenth century started much earlier, with *Frankenstein*.

⁸ As D. A. Miller has noted, this achievement is also something of a disappointment because it restricts what he calls “Style”—the potential of the narrator's free-floating consciousness to be virtually anyone. As he explains, “Style, then, gets you the things it fools you into thinking you don't want, but only, finally, by being abandoned for the Person, which makes you *know* you want them. As a theme, or represented

autonomous selves and situating those selves within hospitable families—defending, at the same time, the individual autonomy of all—it is easy to understand why the *Bildungsroman* has been read as an idealistic genre, one that extends the hope of selfhood and social integration to even the most marginal subjects. That hospitable family unit ensures the futurity of the human community by reproducing gendered individuals who, in turn, form new households. As Joseph Slaughter has explained, the *Bildungsroman* is not so much a coherent literary tradition as “the name of a function, the generic label that good reformists repeatedly give to texts that perform a certain kind of incorporative literary social work” (1411).⁹ In this spirit, we might understand the *Bildungsroman* and domestic fiction as utopian forms of writing. Together, they legitimate even disenfranchised beings as autonomous subjects by carving out a place for those beings in ideal households of tolerant, inclusive, and hospitable individuals. In this way, the *Bildungsroman* and the form of domestic fiction naturalize the liberal fantasy that anyone can achieve autonomous subjectivity and occupy a position in a household of individuals, provided that person is sufficiently educated and disciplined. According to this fantasy, an ideal society can be constructed one individual at a time, as those individuals are

practice, in Austen’s work, Style is typically obedient to this dialectic of its eventual dispensability. It wards off the Mr. Collinses or Mr. Eltons only until such time as it has captivated a Mr. Darcy or a Mr. Knightley, when it can and must be dropped to secure him. If, in the first moment of this dialectic, the heroine vanishes into Style, in the second she precipitates out of it, not as the malformed and all but unrepresentable creature that, but for the initial intervention of Style, she should have feared being, but as the Person in glory, the person who is, like Emma in Mr. Knightley’s final vision of her, ‘faultless in spite of all her faults’ (433) and whose faultlessness and faults alike are complemented in the “perfect happiness” of a married union. (The redemption of particularity in Jane Austen: being particular *with another person*)” (*Jane Austen* 53).

⁹ A number of critics agree with Slaughter’s assessment. Most notably, Marianne Hirsch calls the form “the most salient genre for the literature of social outsiders, primarily women or minority groups” (300).

bound to one another in sympathy produced by the subject-making mechanism of the household.

The novels I discuss, from *Frankenstein* to *Dracula*, bring to bear upon these established forms of fiction the new models of human being that gained new currency in the early nineteenth century. By giving literary form to the idea that a human being can be grasped as a machine or as a “living fossil,” for example, rather than as a self-enclosed subject, these novels expose the inadequacies of *Bildungsroman* and the domestic novel, genres whose primarily symbolic function is to naturalize the assumption that all humans are individuals who relate to one another in households and communities. By introducing this “heterogeneous thing” (Brontë 23) into the form of fiction—in the form of Frankenstein’s monster, Jane Eyre, Tess Derbyfield, or Mina Harker, to name just a few notable examples—these novels reconfigure the way that earlier novels understood and represented human interiority. Jane Eyre, and Tess Derbyfield, for example, cannot predict to which stimuli they will respond. By producing a character like Jane, for example, Brontë reconfigures human volition in principally physiological terms and produces a new form of interiority. Brontë’s version of interiority has little to do with the rational faculties and everything to do with the interior of the physical body. For a nineteenth-century subject like Jane, thought, agency, and even memory arise from within the body’s independent systems, most of which have no direct communication with the mind, and from impulses that act directly upon the body from outside of it, bypassing the mind completely. Brontë’s first-person narration permits us to come away from the novel with the sense that Jane is a coherent, self-governing subject, but the

multiple Janes that the narrative presents navigate the biological aggregate by relying on the body's competing impulses and sensations, rather than the rational faculties.

By thus replacing the perfectible, liberal subject with an impulsive one, subject to the body's structures and systems, these novels cast doubt on fiction's socializing function. The traditional novel of individual development, these novels suggest, will not hold up to the body as the nineteenth century understands it. In contrast to characters like Elizabeth Bennett, Anne Elliot, or even Emma Woodhouse, who eventually develop into rational, self-governing individuals fit to join a household of similar subjects, the new subject that this fiction produces does not develop, progress, or improve as an individual. Tess's rational capabilities and judgment, for example, do not change or improve with experience; even the most tolerant, sympathetic household cannot contain her because she is so "improved."

In place of the tolerant household, the novels I discuss, for better or worse, extend the "animal" captivity Agamben describes to the human subject. These novels imagine individuals as part of a single species body bound up in what Paley calls an "excess of spirits" (28), Shelley calls "mechanical impulse," and Brontë calls "natural sympathy." This network defines the perceptual world and sustains the life of the species. When Pip, for example, explains that he "can't help" his attachment to Estella, or when Estella ridicules her suitors as "moths, and all sorts of ugly creatures" (306), whose instincts she likewise cannot help, they both understand attachments between individuals as instinctual, rather than tolerant or sympathetic. Similarly, Victor Frankenstein and his creature, Jane and Rochester, and Mina and Dracula, experience the world much as an animal would experience it. The world, for all of these characters, consists entirely of an

instinctive pull toward the species. The spider and the fly, the hummingbird and the flower, a colony of bees—or, I argue, Jane and Rochester—together comprise one organism endowed with a collective consciousness that is more than the sum of its component parts. These networks that structure nineteenth-century fiction and science anticipate—and even make possible—Deleuze and Guattari’s claim that “each of us was several” (3).

If we see novels formulating the embodied responsiveness that I am arguing for, how can we still read novels within the categories of everyday common sense, as I propose? William Flesch’s *Comeuppance* (2007) argues for reading and writing as evolved activities. Flesch suggests that “an innate capacity for and tendency toward altruistic punishment seems to me the central human psychological phenomenon in one aspect of our interest in narrative: our desire to see the good rewarded and the evil punished, whether they exist or not” (4). Similarly, in *The Physiology of the Novel* (2007), Nicholas Dames argues for the physiological basis of novel reading, explaining that “the novel of the nineteenth century trained a reader able to consume texts at an even faster rate, with a rhythmic alternation of heightened attention and distracted inattention locking onto ever smaller units of comprehension. From the vantage-point of the physiological criticism that engaged it, the Victorian novel was a training ground for industrialized consciousness, not a refuge from it” (7). Both of these readings take for granted the idea that nineteenth-century accounts of the mind and the body will allow us to understand our relationship to fiction. In this dissertation, I read fiction as the more theoretically self-conscious of the two disciplines and suggest, in contrast to these kinds

of readings, that fiction allows us to grasp the implications of the new body that emerged in nineteenth-century scientific writing.

Victorian fiction is especially aware of how the kind of transindividual, “rhizomatic” thinking that we find in Victorian studies of the body challenges the received models of human being and affiliation. The novels I read are particularly sensitive to the problems and contradictions that these scientific models raise. Fiction’s sensitivity to these problems becomes most apparent in a novel like *Dracula*. *Dracula*’s victims enjoy an ecstatic relation to the collective vampire body that, as the novel shows, comes with the risk of losing consciousness of themselves as individual human beings. At the same time, the novel, like the others I discuss here, remains open to the positive and progressive possibilities of these new models that scientists themselves do not articulate, and perhaps do not see. Although the risk of losing consciousness of oneself as an individual constitutes the basis of horror in *Dracula*, this new way of theorizing humanity, the novel understands, is ideologically compatible with the exigencies of city living that someone like Sharon Marcus describes in *Apartment Stories* (1999). Nineteenth-century households and families, as Marcus explains, were no longer self-enclosed in the way they were in the eighteenth-century; what Erving Goffman has called “batch living” is the way of life we see fully articulated in the novels I discuss. To be a nineteenth-century subject, these novels suggest, is to assent to the disintegration of the sympathetic community and to abandon oneself instead to the sea of impulse that unites humanity as one species; these impulses, if contrary to volition, produce unprecedented, instantaneous ways of knowing and feeling that the novel incorporates into its definition of what constitutes a modern subject.

From Paley to Darwin; from *Frankenstein* to *Dracula*

My first chapter places William Paley's *Natural Theology* (1802)—the reigning account of the natural world in the early nineteenth century—in conversation with Mary Shelley's *Frankenstein* (1818) in order to set up the central problem that the rest of the dissertation explores. In both of these dominant narratives of the early nineteenth century, the “natural” is a fiction that is produced by its contiguity with the machine. I read *Natural Theology* for Paley's interest in how the factories, mills, distilleries, and railroads of modern industrial Britain produced a new vocabulary for understanding both human and animal bodies. Paley's account is remarkable in this sense: in seizing upon the language of the factory to theorize the perfect “fit” that links one body to another, Paley narrowed the gap between humans and animals that Enlightenment letters had taken for granted. But by asking his readers imaginatively to step outside the natural world in order to see their own bodies as mechanical objects, his account reaffirms the notions of human exceptionality that his mechanical language challenges. The literary objection to this contradiction becomes especially clear in *Frankenstein*, I suggest, where Shelley forces her readers to straddle the contradiction between intellectual and mechanical being produced by Paley. As I will show, by giving literary form to the tension between these competing ways of theorizing humanity, Shelley's novel disfigures both the *Bildungsroman* and the form of domestic fiction, as literary forms invested in the ideology that understands humans principally as rational, autonomous individuals who cohere in sympathetic communities of subjects like themselves. In so doing, *Frankenstein* raises what I see as the defining questions for nineteenth-century fiction: What does it mean to be a human being when the ability to regulate one's own behavior

gives way to the “mechanical impulses” of the single body that all share in common?

What is the relationship among individuals when the body’s related parts compete with the mind as the seat of intellect, emotion, and life itself?

To show how both literature and science after *Frankenstein* answer these questions, my second chapter places Charlotte Brontë’s (Currer Bell’s) *Jane Eyre* (1847) alongside the anatomical research and popular writings of Sir Charles Bell, one of the most celebrated surgeons in early nineteenth-century Britain. His treatment of the brain and the nerves directly addresses the contradiction between corporeal and intellectual being that Shelley found so detrimental to the novel form. In his lectures to the Royal Society and his publications on the brain and nerves—a collection of texts that prompted Darwin’s later work on the expressions—Bell grasps the body as a conglomeration of independent, highly specialized nervous systems, governed by what he calls “higher powers of agency,” rather than the brain’s direct command. In *Jane Eyre*, Brontë reconfigures Bell’s idea of the body to produce a modern subject like Jane, who is both rational and impulsive, split between the multiple systems of intelligence and feeling that arise from Bell’s model. For Brontë, these competing sensations are more reliable than reason and self-regulation alone in navigating a world where the definition of humanity had shifted onto the biological life of the species.

Since the initial publication of *Tess of the D’Urbervilles* (1892), the portion of the novel set at idyllic Talbothay’s dairy, replete with the language of impulse and sensation, has remained almost as tantalizing for readers as for the characters themselves. In my third chapter, I ask why Hardy indulges in the language of impulse in this section of the novel—language that echoes Brontë’s sense of the connections that bind humanity—only

to abandon it when Tess and Angel leave the dairy on their wedding day. The answer, I suggest, has everything to do with the specifically Darwinian body that Hardy incorporates in his novel. *Tess* is Hardy's attempt to imagine the afterlife of impulse once Darwin reconfigured the human body as a "living fossil." Darwin reserves the term "living fossil" for the *Ganoid* fishes, *Ornithorhynchus*, and *Lepidosiren*—anachronistic beings whose bodies have not evolved along with the rest of the species. I suggest that we might use Darwin's idea of the "living fossil" to grasp both the way he redefined even human bodies in the mid-nineteenth century and the way that Hardy conceptualizes humanity in *Tess*. Once Darwin had defined the human body as a living remainder of a vanished world, I suggest, fiction could not inscribe the body as a bundle of nerves unconnected to past and future, since the biological line, and not the individual specimen, is the operative category in Darwin's system. By situating Tess, herself a "living fossil," in the impulsive space of the dairy farm, Hardy shows the incongruity between the body as Darwin imagined it and the retreat into private impulse that a character like Tess—and earlier novels—idealize. The novel never resolves the conflict between these two opposed modes of feeling but oscillates toward a conclusion, seeking refuge in timeless places of perfect stasis, only to move back into the Darwinian vacillation between degeneration and development. In this way, *Tess* demonstrates the divide between opposed modes of human being and feeling that arise in Darwin's wake: one that prioritizes life, transformation, growth, and sensation, and another that prioritizes death, stasis, and reversion.

In my final chapter, I read Bram Stoker's *Dracula* (1897) as a direct response to the competing versions of selfhood that emerge in Darwin's *Expression of the Emotions*

in Man and Animals (1890)—specifically, to the contradiction that arises between the observant impartiality that Darwin himself assumes relative to his objects of study and the impulsive forms of human being that he describes. In accounting for the origin and development of the expressions, Darwin transforms even himself, as a rational, observant man of science into a strictly evolutionary being, governed by the collective impulse of generations, rather than by the will. His account places the mind and the body in a reciprocal relationship with one another and prioritizes non-rational, non-individuated modes of thought—the collective imagination of the species—as the cognitive function that holds the greatest control over the body and its actions. By opening individual minds and bodies to one another—and by subjecting individual minds and bodies to instincts and impulses that arise from outside of them, his account conjoins subjects and objects alike as part of a single evolutionary species body. Although Darwin sees the oscillation between these two modes of being not only as possible, but also natural, the opposition between these forms of human being, for Stoker, constitutes the basis of horror fiction in the late nineteenth century.

In *Dracula*, I suggest, Stoker grounds these transindividual forms of knowing and feeling in the vampire to jolt a complacently enlightened humanity into the darkness that shapes and directs modern life as represented in the novel. The horror—and the great paradox—of the novel is that to retain their hegemony, Van Helsing and his band of brothers must abandon themselves to the embodied thought process that Stoker grounds in *Dracula* and the network he commands, where minds, bodies, and sensations are fluid and continuous, rather than individual and distinct. The novel, as I will show, finds these somatically mediated forms of feeling, communication, and knowledge more

appropriate—and more “up-to-date”—than individualism for the new managerial class that the novel grounds in Jonathan and Mina Harker. In this way, the novel stages the same conflict between the individual subject and the species body that we find in a novel like *Frankenstein*, with a significant exception: the kind of body that proved so threatening to humanity at the beginning of the nineteenth century is the sole way, for Stoker, to navigate a modern world where knowledge refuses to remain in its place.

CHAPTER ONE

An Assemblage of Beautiful Parts: *Natural Theology*, *Frankenstein* and the Human Machine

During the mid-nineteenth century, literature and science entered into an unwitting conspiracy to naturalize the idea that a human being is a machine—an intricate assemblage of related parts. In turn, these disciplines gave rise to the notion that the very traits that appear to set humans apart from the rest of the natural world—invention, artistry, feeling, and affiliation—have their source in the physical body, not in the operations that the Enlightenment attributed to the “mind.” Over time, the once easy assumption of the incompatibility between human beings and machines—the conviction that the machine could hardly be used as a metaphor, much less an accurate description for the human—has faded from view. To understand exactly how radically texts such as William Paley’s *Natural Theology* (1802) and Mary Shelley’s *Frankenstein* (1818) revised Enlightenment thought in this respect, we should remember that during the late decades of the eighteenth century, machines posed a direct threat to the way that Enlightenment letters understood human beings: as autonomous, self-regulating individuals who cohere sympathetically in families and communities comprised of similar subjects. Those who most ardently opposed mechanized labor thus understandably saw machines as a modern calamity—as monstrous, alien, and, above all,

unnatural.¹ Would machines, and the division of labor they required, transform English artisans and agricultural laborers into automatons, suited only to one particular task? In a completely mechanized world, what would distinguish one individual from another, and what, if not the affective bonds of the mind, would relate those individuals to one another in households and communities? More to the point, if machines replaced human artistry and labor altogether, and if thought and emotion themselves became completely mechanized, what traits would possibly remain uniquely human? The conversation between two vastly different texts—William Paley’s *Natural Theology* and Mary Shelley’s *Frankenstein*—serves to resurrect and clarify the antagonism between human and machine in the early years of the nineteenth century. This struggle between human and machine brought fiction and science into a new relationship during the early nineteenth century, as both disciplines found it virtually impossible to theorize the one without also wrestling with the other.

The term “natural theology” refers to a group of seventeenth and eighteenth-century arguments for the existence of God on the basis of close observation of the

¹ Maxine Berg explains how, as Britain felt the “shocks of a rapid process of mechanization” (21), the “machine question” became an issue of national debate, for machines seemed to promise economic security at the same time that they threatened to “displace[] the very labour which required skill and which might therefore be meaningful” (282). Many, including John Stuart Mill, regarded the machine as a symbol of technological and economic progress, and others, including Andrew Ure, argued for self-regulating machines, unhampered by human error, as a means to bring production under control. At the same time, Tory and radical critiques from authors including Thomas Carlyle, Charlotte Brontë, and Charles Dickens consistently represented mechanization as an alien, monstrous force that would transform the valued artisan classes into a mass of automatons. To give just one example, according to Peter Gaskell, “The term artisan will shortly be a misnomer as applied to the operative; he will no longer be a man proud of his skill and ingenuity, and conscious that he is a valuable member of society; he will have lost all free agency, and will be as much a part of the machines around him as the wheels on cranks which communicate motion” (qtd. in Berg 265). Tories and radical groups alike feared that modes of production that depended upon all-around skilled craftsmen would give way to specialization and the subsequent breakdown of craft, leaving skilled laborers without work, and transforming laborers into machines themselves.

natural world, rather than on revelation.² From John Ray's *The Wisdom of God Manifested in the Works of Creation* (1691) to Paley's *Natural Theology*, the structural complexity of the natural world is interpreted as proof that biological species were designed to fulfill a particular purpose that is legible in the visible features of physical bodies. Situated at the end of this tradition and composed, like Frankenstein's monster, from many outdated sources, Paley's *Natural Theology* is dismissed by critics and scientists alike.³ In suggesting that no part of the natural world was left to chance or accident—and that each part was designed with care and purpose—Paley offered his readers a comforting fiction of creation at the very moment when the fossil record was beginning to suggest a different account of the earth's genesis.⁴ But despite the

² Jonathan R. Topham explains ambiguities surrounding the term "natural theology:" "[T]he theologically exact definition of natural theology referred to the attempt to procure religious truths about God and his relation with humans by the exercise of natural reason, and without recourse to any kind of revelation. By contrast, historians of science have often followed less theologically exact writers of the early nineteenth century in using 'natural theology' to refer more generally to assertions of divine design" (38).

³ The first anonymous reviewer of *Natural Theology*, for example, wrote that "On the subject of Natural Theology no one looks for originality and no one expects to find it." This critical tendency persisted throughout the nineteenth century and into the twentieth, as we see in Leslie Stephen's similar suggestion that "The argument is familiar, and probably has been familiar since the first days when it occurred to anyone to provide a logical basis for theology" (qtd. in Thomson 61). Colin Jager sums up the contemporary critical point of view with his suggestion that "William Paley may not have been the age's most original or inspiring thinker, but he was one of its most ubiquitous and, among the educated classes at least, influential" (103). When Matthew D. Eddy and David Knight suggest, in their introduction to *Natural Theology*, that "Darwin was a great original thinker, whereas Paley was not," (xxviii), they succinctly demonstrate the critical tendency to read Paley in hindsight, and to consequently fault Paley for his failure to recognize the theories of natural selection that Darwin would articulate decades later. To give one of countless examples, Barbara Goff describes Darwin's theory of natural selection as a "triumph of his materialism over the patently ridiculous explanations provided by natural theology" (2). Many critics, including Stephen Jay Gould, place Paley and Darwin alongside one another and, like Goff, conclude that Paley, in contrast to Darwin, is simply "wrongheaded." Neal C. Gillespie stands apart as one critic who has given serious attention to Paley's innovative engagement with the concerns raised by the industrial revolution. Gillespie writes that Paley's argument for the identity between man-made machines and the natural world remains "one of the exceptional novelties to be found in British natural theology prior to its eclipse after the appearance of Darwinism" (214).

⁴ Beginning with Thomas Burnet's *A Sacred Theory of the Origin and General Changes of our Earth* (1681), and continuing through the eighteenth century, natural historians including John Woodward, William Whiston, Robert Hooke, and John Ray wrestled with the vast incongruity between the age of the earth as suggested by the Bible and the age implied by the geological record. By the end of the eighteenth

incongruity between his theories and contemporary scientific accounts of the natural world, *Natural Theology* ran through 20 editions by 1820 and remained in print for over 100 years.⁵ His ideas, however wrongheaded his later critics have found them, were deeply embedded within early nineteenth-century culture, and his claim that biological life can be grasped as a vast machine remained the dominant way of theorizing the natural world before Darwin. Darwin himself studied *Natural Theology* as a student at Cambridge, and acknowledged that it played a significant part in shaping his thinking. As he wrote in his *Autobiography*, his study of Paley's text "was the only part of the Academical Course which, as I then felt and as I still believe, was the most use to me in the education of my mind" (qtd. in Thomson 6). Dismissing this text is a mistake.

Any number of Paley's predecessors had celebrated the mechanical perfection of the natural world. Historical circumstances never required those predecessors, however, to promote such a mechanistic vision for a readership sensitive to the deleterious effect of machinery on traditional British culture. In contrast to biologists and naturalists before him, who compare the human body to simple household tools and objects, Paley requires his readers to imagine their own bodies as miniature versions of the factories, mills, and

century, just before Paley wrote *Natural Theology*, "the great age of the earth had become indisputable" (Thomson 187). Someone like James Hutton, as the beneficiary of over a hundred years of evidence gathered by his predecessors, could argue more convincingly than ever before that the earth has been in a constant state of flux, and that "immense time was needed for the processes that form and reform the earth" (Thomson 184). Hutton's theories, along with those of Charles Lyell, provided the basis for theories of the natural world—including Charles Darwin's—that required large periods of time to explain morphological change.

⁵ I rely upon the statistics Aileen Fyfe offers in her discussion of *Natural Theology*'s long publication history in her article, "Publishing and the Classics: Paley's *Natural Theology* and the Nineteenth-Century Scientific Canon." In her comprehensive account, she explains how *Natural Theology* once occupied the bookshelves of every British clergyman, gentleman, and student and became a "classic" when it spread to a more general audience as publishers revised the text and made available copies at lower prices.

refineries springing up around Britain at an alarming rate.⁶ Such an exercise represented, for Paley, an opportunity to close the gap and ease the actual hostility between the British public and industrial machinery by suggesting that the conceptual difference between the two was simply a matter of degree, rather than kind. His attempts to challenge the distinction between man and animal were no doubt less shocking than his bid to reconcile organic life with the very industrial machinery that seemed to threaten it. But insofar as Paley requires his readers to step outside the natural world in order to study the human body as a mechanical object, he paradoxically splits off intellectual being from the very machinery that so fascinates him to make it the object of his enquiry, thus formally affirming the notions of human exceptionality he sets about to challenge. In literary terms, *Natural Theology* thus brings together what Enlightenment letters had kept apart: the human being as a consciousness, standing outside of the natural world and observing its mechanisms, and the human as an object in that world, disavowing its relation not only to individuated consciousness but also to forms of kinship and relationship that take that consciousness for granted.

The nineteenth-century objection to these moves becomes especially clear in Mary Shelley's 1818 novel, *Frankenstein*. As a scientist obsessed with the relation between the body's component parts, Victor Frankenstein clearly shares much in common with Paley. Convinced of his own exceptionality, Frankenstein fails to understand what he has wrought by making a human being from the body parts of many men. I find it significant that Shelley makes it difficult, if not impossible, for readers to

⁶ James Keill and William Cheselden, for example, Paley's main anatomical sources, compared the parts of the human body to everyday household tools and objects. Keill compares the colon to a bag-pipe, while Cheselden compares the cornea to a set of eyeglasses (Eddy and Knight 307).

align themselves with either the monstrous ego of the scientist or the monstrous life of the composite biological being he has created. By staging scenes alternately eliciting sympathy and antipathy with each, she forces us to straddle the ontological divide between intellectual and mechanical being produced by Paley. In establishing these as the terms of a debate over what makes us human—our intellectual and spiritual difference *from*, or our biological continuity *with* the animal and mechanical worlds—Paley and Shelley set the agenda for the literature and science of the nineteenth century. As I will show, by giving literary form to this tension between these competing ways of theorizing humanity, Shelley's novel disfigures both the *Bildungsroman* and destroys the form of domestic fiction, as literary forms deeply invested in the ideology that understands humans principally as rational, autonomous individuals who cohere in sympathetic communities of subjects like themselves.

By reading Paley's account of the natural world for the contradiction it produces for human beings and for the problem it therefore poses for the novel of individual development, I part ways with critics including George Levine and Gillian Beer, who read natural theologies for their compatibility with the *Bildungsroman*. Although both acknowledge that natural theology is often used as "a perhaps unfairly extreme antithesis to the Darwinian model" (Levine 21), they use natural theologies as a "control" or "standard against which to measure the distance nineteenth-century fiction traveled...when it absorbed Darwinian notions" (Levine 21-2). Levine describes natural theology as "an effort of containment" (41) characterized by "repetition, resemblance, regularity, predictability" (53), which produces, in fiction, characters like Elizabeth Bennett, who are "defined not by their pasts, but by their places in the present system"

(53). Gillian Beer reads Paley's *Natural Theology* for its "insistence that transformation and divergence are stages in a journey whose goal is replication. Coming to be like the parent form is in both senses the end of life." In this regard, *Natural Theology* is perfectly compatible with the *Bildungsroman*, where the "growing ego learns to accommodate itself to, and internalize, the patterns of its society" (122).

My claims also part with the longstanding critical tendency to read *Frankenstein* as a defense of rational humanity, particularly with the longstanding notion that the novel defends the forms of individual subjectivity and community that the Enlightenment recognized as uniquely human.⁷ While feminist readings of the novel, following Levine, did much to legitimate *Frankenstein* as a serious work of nineteenth century fiction, these readings did not dislodge the basic understanding of the novel as a defense of Enlightenment ideology; such readings, as Gayatri Spivak has observed, simply transformed the novel into a "battleground of male and female individualism" (263).⁸ Criticism of the novel has a longstanding fascination with Shelley's interest in early

⁷ See, for example, Levine, "*Frankenstein* and the Tradition of Realism." David Ketterer, writing after Levine, similarly argues that we should understand the novel in the context of Enlightenment ideology. As he suggests, "*Frankenstein* makes most sense if it is interpreted not just in relation to Locke but in relation to that entire body of philosophy to which Locke gives rise" (92). Ketterer reads the novel as a response to the challenge the Enlightenment produced for the nineteenth century to define reality and the individual mind's relation to that reality.

⁸ For example, Sandra Gilbert and Susan Gubar, like many feminist critics of the 1980s, rely on Mary Shelley's biographical circumstances to read the novel as an argument for female authority and selfhood. They read the novel specifically as a revision of *Paradise Lost*. As they explain, "It is as a female fantasy of sex and reading, then, a gothic psychodrama reflecting Mary Shelley's own sense of what we might call bibliogenesis, that *Frankenstein* is a version of the misogynistic story implicit in *Paradise Lost*" (228). Barbara Johnson likewise reads *Frankenstein* autobiographically, as an argument about Mary Shelley's "struggle for feminine authorship" (242). Mary Poovey is perhaps the most overtly Lockean critic of the group, concluding that the novel ultimately promotes maturation and self-regulation through the structure of the household. As Poovey explains, Shelley "sees imagination as an appetite that can and must be regulated—specifically, by the give-and-take of domestic relationships. If it is aroused but is not controlled by human society, it will project itself into the natural world, becoming voracious in its search for objects to conquer and consume" (253).

nineteenth-century radical science—an interest that Shelley herself records in her introduction to the 1831 edition of the novel and in her detailed journal of her personal study.⁹ Following Shelley’s lead, many readers have accordingly situated *Frankenstein* alongside the work of Erasmus Darwin, Luigi Galvani, John Abernethy, William Lawrence, Humphrey Davy and their collective interest in the biological basis of human life itself. Such readings place the novel among the most radical theories of human being available to Shelley and read it as a reproach to radical science for destabilizing the notions of human individuality, emotion, and community that liberal ideology made natural.¹⁰ Such readings, I find, obscure the novel’s engagement with what was the

⁹Criticism has made much of the brief background Shelley provides in her preface to the 1831 edition of *Frankenstein* by exploring the connections between Shelley’s ideas and the leads she offers in this short introduction. There, she writes that “Many and long were the conversations between Lord Byron and Shelley, to which I was a devout but nearly silent listener. During one of these, various philosophical doctrines were discussed, and among others the nature of the principle of life, and whether there was any probability of its ever being discovered and communicated. They talked of the experiments of Dr. Darwin, (I speak not of what the Doctor really did, or said that he did, but, as more to my purpose, of what was then spoken of as having been done by him,) who preserved a piece of vermicelli in a glass case, till by some extraordinary means it began to move with voluntary motion. Not thus, after all, would life be given. Perhaps a corpse would be re-animated; galvanism had given token of such things: perhaps the component parts of a creature might be manufactured, brought together, and endued with vital warmth” (“Introduction” 172). Desmond King-Hele has long since exposed this story about Darwin’s experiment as a “fraud” or “monstrous mutant of Shelley’s interest in Darwin;” Darwin, he explains, never wrote of such an experiment. King-Hele nonetheless acknowledges that “we can say that Darwin captured Shelley’s attention with his discussion of spontaneous vitality, and that without Darwin there would probably have been no *Frankenstein*” (260). In 1816, the year that she started working on *Frankenstein*, Shelley records reading the “Introduction to Davy’s Chemistry,” by which she must mean Davy’s *Elements of Chemical Philosophy*, published in 1812 (*Journals* 96). Many critics interested in the science of *Frankenstein* follow the lead Marilyn Butler establishes in her essay “*Frankenstein* and Radical Science,” or in her “Introduction” to the Oxford edition of *Frankenstein*. In these essays, Butler claims that Percy Shelley’s personal scientific interests and the couple’s acquaintance with William Lawrence influenced Mary Shelley’s decision to tackle the vitalist controversy in her novel.

¹⁰ Anne Mellor, for example, places Shelley in dialogue with Davy, Darwin, and Galvani, arguing that Shelley promotes the “good” science practiced by Darwin and calls into question the “bad” science practiced by Davy and Galvani. As she explains, Shelley “distinguishes between that scientific research which attempts to describe accurately the functionings of the physical universe and that which attempts to control or change the universe through human intervention. Implicitly she celebrates the former, which she associates most closely with the work of Erasmus Darwin, while she calls attention to the dangers inherent in the latter, found in the work of Davy and Galvani” (108). Alan Rauch argues, similarly, that *Frankenstein*’s knowledge is a problem because that knowledge comes at the expense of his participation in a family and community. As Rauch explains, “the solitude and seclusion that *Frankenstein* seems to

dominant account of the natural world and its refusal to defend liberal subjectivity.¹¹ By placing the novel in conversation with *Natural Theology*—perhaps the least radical, but probably the most familiar account of nature to Shelley’s audience in 1818—we can discover their shared obsession with and divergent solutions to the relation between the human and the machine.¹² As Paley and Shelley bring intellectual and mechanical life into a new relationship, these texts shift the very definition of human being onto the biological life of the species. In so doing, Paley and Shelley produce radically new, corporate modes of human relation that nineteenth-century literature and science will test, debate, and eventually naturalize in turn. These disciplines together transform the novel form—once concerned primarily with the development of the individual subject and the integration of that subject into a household—into a form that can accommodate the

require for his work can result only in knowledge that can have neither context nor value. For Mary Shelley, this is, as I hope to show, the most frightening aspect of her novel” (98).

¹¹ A handful of contemporary critics have recognized this trend and consequently attempt to move criticism of the novel beyond these basic assumptions. In their introduction to *Frankenstein’s Science*, for example, Christa Knellwolf and Jane Goodall argue that “Mary Shelley’s *Frankenstein* is often read as a work that stands at the beginning of such dark vision about the barbarities resulting from a science that is used in the service of megalomaniacs wishing to control the world than as a tool for the spread of Enlightenment ideas and values. It is time to reengage with the novel as a work that is filled with the energies of scientific aspiration, as well as misgivings about human failure to realize it” (13-14). Martin Willis likewise aims to move beyond earlier reactionary readings of the novel. In writing about Frankenstein’s connection to Galvani’s theories of electricity, Willis acknowledges that Frankenstein is often read as a “cautionary tale of scientific hubris.” He argues instead “neither materialist theories of electricity as a natural yet unremarkable force nor Romantic belief in the life-giving properties of electrical fluid are given primacy in the text. Such a balancing act reflects, and indeed takes part in, the popular ruminations on the potential of electricity that were ongoing at the time of the novel’s publication” (64). Alan Richardson does not shy away from the anti-Enlightenment implications that arise from reading Shelley alongside early nineteenth-century radical science. Yet even Richardson, who places *Frankenstein* in conversation with contemporary science of the brain, reaffirms as the novel’s main concern and focuses on the development of individual subjectivity, albeit a radically new form of subjectivity, based in the body. As he writes, a novel like *Frankenstein*, in testing the corporeal basis of the mind and the “innate, instinctive determinants of character...can help elicit neglected aspects of characterization and subject-formation in the novel of the time” (38).

¹² A number of critics, including Small, Ketterer, Richardson, Knellwolf and Goodall have noted *Frankenstein’s* interest in the relation between humans and machines, citing Albert Magnus, Etienne Bonnot de Condillac, and Jullien Offray de La Mettrie—notably, not Paley—among Shelley’s sources.

instinctive, corporate modes of human relation and affiliation that came into being when, as Paley argues, that the natural world, including humans, was understood as a vast network of machinery.

“An Animal is a Machine”

Paley navigated the conflict between nature and machine—ingeniously—by conceptualizing bodies as miniature versions of the factories that many saw as a blight on the landscape; bodies, for Paley, are complex assemblages of related parts. In *Natural Theology*, he uses the vocabulary of the modern factory to transform the bodies of all living beings into intricate systems of related ducts, pipes, spikes, knobs, tubes, joints and conduits. The digestive system becomes a cider mill; the birds’ gullet becomes a corn mill; the spine becomes an iron bridge. By means of such analogies, Paley nudges his readers toward the proposition, in his words,

that an animal is a machine. . . . [T]hat there is mechanism in animals; that this mechanism is as properly such, as it is in machines made by art . . . that whenever it is intelligible and certain, it demonstrates intention and contrivance, as well in the works of nature as in those of art. (49)

As this passage shows, Paley is not interested in convincing his readers that machines simply mimic nature. Instead, he reverses this logic and argues, to the contrary, that the “works of nature” resemble “machines made by art:” both, as mechanically complex objects, display the artistry and labor that designed and produced them. According to Paley’s logic, if his reader will assent to the claim that the natural world is structurally identical to the mechanical world, it follows that bodies, like machines, are necessarily planned by an intelligent mind. We can trace God’s hand through the natural world because the works of nature, in their intricate construction, resemble the mechanical wonders all around them—the distilleries, mills, and factories—that humans design and

assemble every day. “The hinges in the wings of an earwig, and the joints of its antennae,” because they display such mechanical perfection, clearly manifest the labor that must have created them: they are “as highly wrought, as if the Creator had had nothing else to finish” (280).

As efficient alternatives to human labor, the industrial machines to which Paley frequently refers could not be more antithetical to the human craft, skill, and artistry that had previously defined British production. For his analogies between the biological and industrial machinery to hold up, Paley must neutralize the threat that factories appeared to pose to human ingenuity and labor. For this reason, Paley emphasizes at every turn the relation between mechanical and human forms of production, insisting that large-scale industrial machinery exists only through the “hand and thought and skill” (43) of an original designer. Mills and distilleries, according to Paley, are works of “art,” built by human “intention and contrivance.” With such claims, Paley drives home the critical point that industrial machinery does not threaten human artistry, but rather makes that artistry visible. To defend this claim, Paley must promote a particular theory of design that assumes that form always follows function. The design of any machine, that is, always satisfies a purpose predetermined by its designer. The inverse theory—that function could arise from form, independently from a designer’s intention—would jeopardize Paley’s claim that only artistry and intention can produce a mechanically complex object.¹³ Just as the “pipe or outlet” of a “dye-house or a distillery” was

¹³ When applied to the natural world, such a theory comes dangerously close to validating the proto-evolutionary theories that challenged Paley’s idea of nature as a world designed and constructed by one omniscient craftsman. Although Paley takes great care not to attack any one naturalist directly, he refutes the idea of morphological change that both Erasmus Darwin and Buffon articulate in their respective accounts of the natural world. Paley is particularly wary of Darwin’s notion of the “filament.” As Eddy and Knight explain, Erasmus Darwin “promoted the idea that the morphology of organisms could change

designed specifically “for carrying off the waste liquor” (24), an omniscient artisan, according to Paley, designed each component part of every living body for a predetermined purpose, down to the ducts which remove tears from the eyes. With these analogies, Paley makes it virtually impossible for his readers to think about either man-made factories or living bodies without also concluding that skilled, if unseen, artists must have produced both for particular purposes. By emphasizing the artistry and intention that must govern the production of both factories and bodies, Paley’s rhetorical sleight of hand serves two purposes. His rhetoric keeps a creator in his account of the natural world, and simultaneously restores to British production the human skill, craft, and intention that many feared had been lost in the rapid process of industrialization.

Relation

As his primary evidence for these claims, Paley evokes what he calls “relation:” the countless relays and networks between beings, whose bodies are so perfectly suited to their particular environments, tasks, and companions, that, like the cogs of a machine, they appear to have been designed and crafted with the others in mind.¹⁴ Paley’s relentless fascination with mechanical intention and fit thus produces a natural world where “one part answers to another part, and every part to the final result” (142). According to Paley’s account, each being is made for and bound to another in relays that Deleuze and Guattari would describe as an “assemblage.” Together, that is, the

over a series of generations if given enough time to do so. His theory revolved around the concept of a filament...a piece of matter, similar to the eighteenth-century conception of a seed or germ, that guided the process along” (325).

¹⁴ This vision of a world of beings whose bodies perfectly correspond to others continues to fascinate contemporary audiences. Olivia Judson, for example, regularly writes about these relations, which she calls “mutualisms,” in her articles for *The New York Times*, including her April 2008 article, “A Mutual Affair.”

hummingbird and the flower, or a colony of bees forms a single organism, bound instinctually, that is more than the sum of its of its component parts. Instinctual behaviors bring about what Paley sees as the most complex form of relation. Instilled in each creature, instincts articulate disparate parts of the natural world to one another. They lead a calf to its mother, keep a mother bird on her nest, and propel the crab's yearly journey to the seashore to ensure, in each case, the well-being and perpetuation of the species. Such instances of perfect fit are not unique to *Natural Theology*, but Paley was the one to transform the whole of biological life into a mysterious network of corresponding parts that only a creator could fully comprehend.¹⁵

These ecstatic relays between creatures and their tasks produce pain as often as they produce a gratifying relation, as Paley discovers. Despite his best efforts to combine the organic and mechanistic through the artistic perfection they share in common, instances of imperfection seep into Paley's narrative, nowhere so starkly as in his description of a mother bird sitting on her nest:

Neither ought it, under this head, to be forgotten, how much the instinct *costs* the animal which feels it; how much a bird, gives up, by sitting upon her nest; how repugnant it is to her organization, her habits, and her pleasures. An animal, formed for liberty, submits to confinement, and in the very season when every thing invites her abroad: what is more; an animal delighting in motion, made for motion, all whose motions are so easy and so free, hardly a moment, at other times, at rest, is, for many hours of many days together, fixed to her nest, as close as if her limbs

¹⁵ His predecessors assigned these relations only to the "lowest" forms of life. Oliver Goldsmith, for example, one of Paley's major sources, suggests that only the "meaner" animals correspond to and depend upon their immediate environment. As Goldsmith writes,

[T]he meaner the animal, the more local it is found to be, and the more it is influenced by the varieties of the soil where it resides. Many of the more humble reptile kinds are not only confined to one country, but also to a plant; nay, even to a leaf. Upon that they subsist, increase with its vegetation, and seem to decay as it declines. They are merely the circumscribed inhabitants of a single vegetable: take them from that, and they instantly die; being entirely assimilated to the plant they feed on, assuming its colour, and even its medicinal properties. (352-3)

were tied down by pins and wires. . . . But the loss of liberty is not the whole of what that procreant bird suffers. Harvey tells us, that he has often found the female wasted to skin and bone by sitting upon her eggs. (169)

Like most creatures, Paley's mother bird lives without self-concern or the power to act independent of her natural function. She accordingly "waste[s]" upon her nest," as if transfixed there by "pins and wires;" the mechanistic workings of her own body remain a "secret she is not let into" (163).

Paley undoubtedly means to demonstrate the astonishing power of instinctual relations with this example of unselfconscious labor, yet his mother bird suggests—contrary to Paley's ultimate intention—that nature is far from the benevolent, perfectly integrated, mutually beneficial, and utterly economical system for which he argues.¹⁶ Paley insists that each being was created for a purpose which the creator hard-wired into individual bodies. It is only in occasional passages such as this, however, that he must confront the horrific side of this principle. The bird's "purpose" entirely consumes the body that houses it. The instinct, he admits, "*costs* the animal which feels it."¹⁷ We might also read the mother bird as a dramatic example of the consequences of the specialized model of production Paley embraces. Throughout *Natural Theology*, Paley marvels at the *intellectual* labor of the creator that bodies and machines allow us to see, while barely acknowledging that large-scale mechanical works require extensive *physical* labor. Just as the bird's body constitutes a mystery she cannot fathom, the engineering

¹⁶ David Hume seizes upon this main point—that nature is an inherently inefficient system—to argue against natural theologies in his *Dialogues Concerning Natural Religion* (1779).

¹⁷ Multiple writers, like Paley, stumble upon similar scenarios as they try to articulate the dangerously unselfconscious intensity of an animal's instincts. Joseph Addison, one of Paley's main sources on instinct, cites the example of a mother dog who was dissected alive: "'A person who was well skilled in dissections opened a bitch, and as she lay in the most exquisite tortures, offered her one of her young puppies, which she immediately fell a licking; and for the time seemed insensible of her own pain'" (219).

behind the factory system is presumably beyond the grasp of workers fixed to a single task or position. In exposing the fact of nature's brutality, the example of the mother bird also implies that mechanized labor operates at a significant cost to those incorporated in the larger machine to perform a specific function "for many hours of many days together."

This is perhaps why Paley immediately turns away from his specific example and assumes instead an omniscient vision that conceives of the natural world as one coherent, well-oiled machine rather than a conglomeration of individual specimens. As he writes, "For my part, I never see a bird in that situation, but I recognize an invisible hand, detaining the contented prisoner from her fields and groves, for a purpose, as the event proves, the most worthy of the sacrifice, the most important, the most beneficial." By evoking the concept of the "invisible hand" that operates as the mysterious figure of economic agency in Adam Smith's *The Wealth of Nations* (1776), Paley finds a way to render the mother bird's wasting body practically inconsequential, in comparison to the "most beneficial" purpose she serves. Just as Smith's economic man, in struggling to preserve his own economic interests, unwittingly serves those of the group,¹⁸ this bird serves a "worthy," "beneficial," and "important" purpose larger than herself: her "sacrifice" ensures the survival of her species. By shifting his focus away from a single

¹⁸ As Smith suggests, writing of his economic man:

By preferring the support of domestic to that of foreign industry, he intends only his own security; and by directing that industry in such a manner as its produce may be of the greatest value, he intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end which was no part of his intention. Nor is it always the worse for the society that it was no part of it. By pursuing his own interest he frequently promotes that of the society more effectually than when he really intends to promote it. (484-5)

body transfixed and wasted by machinery to an “invisible hand” that directs the bird to serve the general interest, Paley’s utilitarian vision rhetorically transforms both birds and workers into “contented prisoner[s]” (169).

Paley thus shuttles between two radically opposed points of view in order to hold together his precarious vision of a natural world where each being, like the component parts of a machine, corresponds perfectly to its environment, task, and companions. The bulk of *Natural Theology* reads like an inventory, as Paley exhaustively catalogues the details of biological life that offer evidence of care and craftsmanship. Paley, however, carefully steps back from those same details and embraces a more comprehensive vision whenever nature threatens to reveal itself as the negative, human-consuming form of machine he steadfastly works to transform into God’s beneficent design. Whenever he switches to this distanced vision, he trades the wonder inspired by particular instances of mechanical perfection for a big-picture perspective on nature. In taking up the question of joints that do not work properly, for example, he exchanges his close-up view the joint’s mechanism for a panoramic view that ponders the state of all animal joints. “At any given moment of time,” he contends, “there are millions of animal joints in complete repair and use, for one that is dislocated” (65). When compared to the sum total of collective happiness that Paley claims to be the rule, the mechanically imperfect joint and the ailing mother bird vanish altogether. This utilitarian perspective ensures that the sum total of health and happiness in the world absorbs and renders inconsequential any accident or aberration. From this perspective, God is always a benevolent creator, machines remain works of art, and readers can conclude, even in the face of immense suffering, that the natural world “is a happy world after all” (238).

Human Exceptionalism

Like many natural theologians, Paley insists that human beings possess a unique ability to reason and to remember. Humanity alone can adopt the kind of omniscient, utilitarian view of the natural world that keeps intact Paley's account of nature's benevolence. Yet in his eyes, these intellectual differences do not automatically elevate humans above the other species. Paradoxically enough, humans come to occupy a position above their animal existence only as they contemplate the many mechanical similarities they share with the animals and machines around them. In his words:

We prize but little what we share only in common with the rest, or with the generality of our species. . . . The common benefits of our nature entirely escape us. Yet these are the great things. . . . It is in those things which are so common as to be no distinction, that the amplitude of the Divine benignity is perceived. (33)

According to Paley, humans are exceptional to the rest of the animal world because humans alone possess the ability to appreciate the mechanical wonders of their own bodies and to recognize the many analogies between those bodies and so many others. Paley thus chips away at the barrier between man and animal, as well as the conceptual boundaries separating biological life from the urban industrial landscape. As his readers contemplate the biological life common to all beings, the presumed differences between human, animal, and *mechanical* bodies falls away, and the industrial and natural worlds begin to merge into one continuous mechanical system.

But if the mechanical perfection of the human body places the human within the animal world as one of many miniature machines, on a continuum with the rest of the natural world, Paley's reluctance to abandon the human to animal instinct simultaneously places humanity at the periphery of the natural world. For Paley, human intelligence

stands outside of the instinctual animal world, much as the creator stands in relation to his creation. The very gesture of situating humanity within nature as one of its interrelated parts situates Paley himself outside the great machine he depicts. To see how nature's component parts fit together, Paley must observe the natural world from its periphery. Moreover, in so distancing himself imaginatively from the machine, Paley also situates himself outside his own body, in the relation of subject to object. He considers the creatures populating the natural and mechanical worlds as so many materials from which to select examples that support his theological argument, just as any craftsman might choose from a range of available parts in order to assemble a machine. As the author of *Natural Theology*, the position Paley adopts relative to the natural world he observes is analogous to God's omniscient relation to creation itself, which includes human beings. Thus, it is fair to say, where in terms of biology he insists on the interrelation of all parts and species—including humans—in terms of creative intelligence, Paley reestablishes a hierarchy of being and situates himself near the top of that hierarchy. As he invites readers to “imbibe[] its influence,” it becomes apparent that Paley conceives of *Natural Theology* as a machine in its own right, designed to put his readers in a position of superiority over the material world he describes. Paley invites those readers to see the natural world as one filled with mechanical objects whose constituent parts fit together with wonderful precision. By fostering such a “feel” for design, Paley invites his readers to assume a position of superiority close to the one he reserves for himself. As long as Paley's readers can imagine themselves as the detached spectators at the periphery of a rich and various animal world, Paley's account of the universe will appear both commonsensical and respectful of God.

The minute we try, as Paley urges, to imagine our bodies as mechanical objects that are ultimately of a piece with all others in one vast machine, we immediately run up against the question linking *Natural Theology* to *Frankenstein*: How can human beings share Paley's detached, objectifying perspective relative to the natural world and simultaneously own up to a creatureliness common to all biological beings? In proposing a continuous landscape where differences fall away not only between animals and humans but also between biological and mechanical beings, Paley has created an untenable position for the individual he ultimately places outside the grand design of biological life. To put it another way, when Paley requires his readers to become self-conscious of their bodies as mechanical assemblages and objects of study, he paradoxically detaches them from the natural world, where such creatures as Agamben's bee experience only an unselfconscious relation to their bodies and the biological imperatives that serve the species. Paley's readers, neither fully animal nor entirely independent of their bodies, occupy the marginal position of the "unmechanical looker-on" who

stands by a stocking-loom, a corn-mill, a carding machine, or a threshing-machine at work, the fabric and mechanism of which, as well as all that passes within, is hidden from his sight by the outside case; or, if seen, would be too complicated for his uninformed, uninstructed understanding to comprehend. (52)

The reader, of course, will never occupy the position of the omniscient creator, who knows intimately all of his creation—nor even the position of Paley's narrator who knows his material inside and out. Paley cannot, however, imagine those of instructed understanding as indistinguishable members of a species. By introducing the possibility that humans are continuous with the machines around them, but then backing away from

this possibility, Paley leaves the reader, like the machine-watcher, suspended in an undefined space between animal and rational life. In this respect, he ushers in the problematic that defines the nineteenth century. As both individuated consciousnesses and biological species, human beings incorporated an impossible contradiction.

Paley's Paradox and Literary Form

In *Frankenstein*, Mary Shelley calls into question the central contradiction that arises in Paley's vision of nature and the human as a machine: the idea that a human being is nothing more than a mechanical object, continuous with the rest of nature's machines, yet simultaneously exists as an autonomous, individuated consciousness. Shelley sees that one cannot conceptualize the human body as a machine and also claim that what separates the human from the rest of the natural world—specifically, human intelligence and emotion—arises from a source other than the mechanical design all living beings share in common. Such a claim, for Shelley, splits humanity between fundamentally incompatible modes of being and leaves one straddling the divide between individuated consciousness and aggregate biological life.

In situating within Frankenstein and his creature, respectively, both the individual and corporate modes of being at work in Paley's model, Shelley gives form to the destructive potential this human contradiction poses to the cosmopolitan human community. By definition, the cosmopolitan families that Shelley assembles are more inclusive than the micro-communities that we find in the earlier novels of Richardson, Fielding, or Austen. The Frankenstein and De Lacy families operate according to a universal tolerance that permits them to expand to include individuals, like Elizabeth and Saphie, from diverse cultures and communities. Yet as Shelley shows, even the most

tolerant households cannot incorporate the principle that the monster embodies: the idea that all living beings are integral parts of a single mechanical body. In this case, tolerance is inadequate because the challenge that the creature's mechanical body represents is not simply a matter of incorporating an individual or an entire culture. Shelley's creature shifts the basic definition of human being from culture to biology—from the individual intellectual consciousness that the eighteenth century believed to be the condition of humanity, to the biological aggregate that the nineteenth century knows man to be. In the opposition between Frankenstein and the creature he creates, Shelley gives form to the fundamental contradiction between culture and biology that the early nineteenth century produced for itself in imagining human being as both an individual and corporate condition. By so doing, she defines the central contradiction that governs nineteenth-century fiction after *Frankenstein* and renders its households virtually uninhabitable: Are humans individuated consciousnesses, relating to one another in households and communities? Or are humans creaturely, as the early nineteenth century claims, continuous with the rest of the natural world and bound by the common portion all share in a compound mechanical body?

By writing a novel that gives form to Paley's contradiction, Shelley disfigures the *Bildungsroman*, or novel of education, and destroys the form of domestic fiction, two forms invested, respectively, in developing autonomous individuals and in reproducing the affective relations between these individuals. Literary criticism continues to grant these forms a central place in the nineteenth-century canon as normative modes of nineteenth-century fiction. By so doing, criticism persuades us to overlook the radical incompatibility between these established literary genres and the alternative

understandings of being human that seized prominence in the early nineteenth century. Liberal ideology splits human consciousness from the species body and grants the intellect priority over the biological life that sustains it. Shelley's novel, in contrast, exposes the biological origin and machine-like design that every being shares with what Frankenstein calls the "herd," redefining humanity as a biological condition that one enters by birth, rather than by will or merit. When biology becomes the basis of human thought, feeling, creativity, and spirituality—as it did in the early years of the nineteenth century—the form of fiction changes to give expression to the new forms of human being that arise as a result.

Critics such as F. R. Leavis and Ian Watt have guaranteed a central place in nineteenth-century literary studies for these novel forms and the liberal ideology that equates nineteenth-century fiction with the achievement of a detached, reflective, and immanently perfectible self. According to Watt, the novel emerged as a form designed specifically to "give truth to individual experience" (13). What Watt has famously designated as the "rise of the novel" depended upon a very specific set of philosophical and political conditions that converged in the eighteenth century: the philosophical proposition, originally articulated by Locke, that "truth can be discovered by the individual through his senses" (12), and the emergence of a society that prioritizes, above all, the independence and autonomy of its individual members. In reproducing these definitions of the novel form, literary criticism has perpetuated the belief that eighteenth-century moral philosophy, with its emphasis on individual autonomy and agency, persisted into the nineteenth century as the main way of defining how individuals understood themselves and interacted with one another.

By overemphasizing the role that these models of human being played in defining early nineteenth-century humanity—and the form of nineteenth-century fiction—liberal ideology, which includes most literary criticism, excludes the alternative models of human being and affiliation that had already encroached upon the liberal models of humanity which we still take for granted. Shelley's novel demonstrates that other models of human being had indeed permeated early nineteenth century thought and the form of fiction comprising the "great tradition." To expose the inadequacies of the assumption that all humans are individuals who relate to one another in households and communities, Shelley attacks both the *Bildungsroman* and the domestic novel, genres whose primarily symbolic function is to naturalize this liberal ideology. *Frankenstein* incorporates within the frame of these established forms of fiction the notion of man as a biological machine that was gaining new currency in the early nineteenth century. In so doing, she casts doubt on the novel's socializing function by showing that the traditional novel of individual development, guaranteeing the individual autonomy of its reader and affirming the hospitality of the human community, will not hold up. *Frankenstein* forces us to consider instead what becomes of that human community—and the novel form—once the human becomes a walking contradiction, at once a mind and a machine.

Kant on Trial

Shelley's novel appropriates the form of the domestic novel, the story of a family that is remodeled along the lines of gender and generation to reproduce an ideal community of autonomous subjects. She inaugurates her novel around the premise that Victor's marriage to Elizabeth will guarantee the perpetuation of the household, an event that the family anticipates in no uncertain terms. In this way, Shelley's novel promises to

follow the same narrative trajectory that we find in an Austen novel, which invariably begins with emergent individuals and incomplete families, and anticipates the companionate marriages that will ensure the economic and social stability of its members. Despite the expectations that Shelley mobilizes by invoking the domestic novel, however, she revises the form to challenge the ideology that supports it. In reorienting this form, she shows that the communities idealized by domestic fiction are nothing but ideal, once we see humanity as a giant biological machine. Under these circumstances, humanity can no longer imagine itself as a body of self-regulating subjects, constructed one individual at a time. Shelley's novel, in confronting the tolerant family with Paley's compound mechanical body, redefines humanity as a biological species, bound together by the bare life its members share in common—not by the sympathy that allows this family to cohere as a group of autonomous subjects.

To accomplish this purpose, Shelley begins her novel with a family unit that seems much more inclusive than the communities we find in an Austen novel. The Frankenstein family is not an organic unit related by blood; it expands to take in such individuals as Elizabeth Lavenza, a cousin from Italy, and Henry Clerval, a friend whom Victor Frankenstein regards as a brother. This family is thus a flexible, overtly cosmopolitan unit, composed of already-autonomous subjects who find an idyllic “harmony” in their individual “dissimilitude” (20). This is not an arbitrary choice of social conditions on Shelley's part. By beginning her novel with a family that imagines kinship as fluid and arbitrary, rather than dependent upon blood relation, Shelley has devised a structure that allows her to experiment with human affiliation under the most inclusive of circumstances. Within this cosmopolitan structure, Shelley sets out to see if

individuals who are not related to one another can indeed combine in communities without compromising their personal autonomy. Such an inclusive structure allows Shelley to expose the absolute limit to what the household of individuals—and by extension, the novel form—can contain and validate as human. In this respect, she is putting Immanuel Kant’s cosmopolitan community on trial.

In his essay, “Perpetual Peace: A Philosophical Sketch” (1795), Kant takes up the problem of cosmopolitan dispersal, a problem that arises as such enlightened individuals move from one territory to another, authorized by the right all share in common to inhabit the earth’s surface. For Kant, peaceful coexistence depends on the capacity to tolerate human difference as individuals circulate around the world. Communities must extend to one another what Kant calls the “right of a stranger:” the right to arrive in a given territory and “not to be treated with hostility” (386). Even as it attempts to accommodate difference in this way, Kant’s model of tolerance assumes that all human beings are fundamentally the same kind of individuals that Locke and Smith described. People from very different cultures, according to Kant, can share the same humanity because all human beings—despite differences in tradition, custom, or language—are uniformly self-enclosed, self-regulating subjects, capable of understanding and abiding by the law. Universal hospitality, as imagined by Kant, depends upon the basic assumption that human difference resides within the individual. An individual who observes this model can traverse the earth’s territories and “attempt to enter into relations” with others because as a self-enclosed subject, capable of regulating his own behavior, he changes neither himself nor the communities he enters (387). This cosmopolitan community has

the potential to expand infinitely, assuming that all beings observe the same autonomous structure, rooted in this inviolable relation of mind to body.

In arguing that any human community can expand to include virtually anyone from outside of that community, Kant's notion of universal tolerance illuminates the rules of hospitality that permit the Frankenstein family to incorporate Elizabeth and Clerval—and the truly cosmopolitan De Lacy family to expand to include Saphie—without curtailing the individual intellectual identity of the other family members. Because Elizabeth, Clerval, and Saphie are each autonomous, self-regulating subjects, they pose no direct threat to the individual personalities and identities of the other members of the group. In joining together, all retain their individual differences. These individuals cohere emotionally through sympathy, an imaginative exchange based in the mind, which does not spread beyond the physical boundaries that separate one private mind from another. In *The Theory of Moral Sentiments*, Adam Smith explains how sympathy operates as the basis of fellow feeling and ethical behavior for a humanity that imagines itself in terms of communities of individuals: "As we have no immediate experience of what other men feel, we can form no idea of the manner in which they are affected, but by conceiving what we ourselves should feel in the like situation" (3). Sympathy produces an affective community whose individual members can participate in and become emotionally affected by the circumstances of another's feelings without becoming personally infected with those emotions. To observe this model, one must consider anything that we cannot imagine ourselves being as less than human and, as such, outside the affective human community. If those exceptions remain part of that

household, they alter the structure of the family unit—and the novel form—beyond repair.

Humanity Redefined

Given the idyllic circumstances that Shelley has fashioned for the Frankenstein family, why has this household, despite its tolerance and flexibility, so entirely collapsed by the novel's conclusion? The answer to this question has everything to do with the failure of Victor Frankenstein's narrative of education to produce the kind of autonomous, self-regulating subject that the cosmopolitan human community requires. By beginning her story with an intellectually curious youth who leaves his family home in the provinces to receive an education in the city, Shelley sets up what appears to be a classic *Bildungsroman*, focused around the individual development of the young Victor Frankenstein. We might expect the novel, which promises to track Frankenstein's growth into social and intellectual maturity, to unfold much like an eighteenth-century *Bildungsroman*. According to the developmental logic that governs this narrative form, in leaving his family to receive an education, Frankenstein should develop into a rational, self-regulating subject and eventually return to the family to become head of household.

But Frankenstein does not become the kind of autonomous subject that the cosmopolitan household requires, because Shelley denies him the kind of education that would affirm his identity as a coherent, self-regulating individual. The *Bildungsroman* tradition depends upon the assumption that the self-enclosed mind is the sole seat of human consciousness. The individual mind controls the body, distinguishing that body from the mass of biological life. Shelley initially grounds in Frankenstein this tendency to sever consciousness from the body and to designate as uniquely human the intellectual

faculties over the biological life that sustains them. As the product of a tolerant household, Frankenstein prizes the intellect as the defining feature of his own humanity, and he routinely neglects his own body while feeding his intellectual obsessions. Shelley exposes what is wrong with this hierarchical relation between mind and body by assaulting the *Bildungsroman* form.

She provides the would-be *Bildungsroman* hero with a specifically modern education, based upon the premise that a human being is principally a mechanical object whose construction can be studied and mastered from an almost god-like vantage. At school, Frankenstein is mesmerized by Waldman's lecture on contemporary natural philosophy that promotes precisely this omniscient relation to the natural world, including the human body. In his lecture, Waldman insists upon the power of natural philosophers to "penetrate into the recesses of nature, and shew how she works in her hiding places. They ascent into the heavens; they have discovered how the blood circulates, and the nature of the air we breathe. They have acquired new and almost unlimited powers; they can command the thunders of heaven, mimic the earthquake, and even mock the invisible world with its own shadows" (28). In this passage, Shelley links Paley's methods, undeniably interested in "penetrat[ing] into the recesses of nature," to the work of such scientists as William Harvey and Robert Boyle.¹⁹ The education that Frankenstein receives, presumably based upon the research of Harvey and Boyle as well as a natural philosopher like Paley, redefines human being by insisting that humanity is a biological condition that one enters by birth, rather than a cultural condition that one

¹⁹ William Harvey discovered the circulation of the blood in 1628; Robert Boyle, the author of *The Sceptical Chymist* (1661), performed experiments on the nature of air in the later part of the seventeenth century (Hunter 28n).

achieves through membership in a family of individuals. Under these circumstances, the inclination to separate consciousness from the physical body—even while enclosing it within that body—gives way to a new fascination for the body as a knowable, mechanical object. The body, in turn, claims a larger part than ever before in defining human being and competes with the mind as the seat of human consciousness.²⁰ By thus pitting the mind against the body that sustains it, Shelley leaves both her protagonist and her reader oscillating between fundamentally opposed versions of humanity. This contradiction becomes the rule, not the exception, to early nineteenth-century humanity.

In the apparent opposition between Frankenstein and his creature, Shelley brings to life an exaggerated version of this contradiction and gives novelistic form to the problem that early nineteenth-century humanity, in producing such a radical contradiction, creates for itself. Laboring under the proposition that a human body is nothing more than a mechanical assemblage that can be studied, dismantled, and reassembled—a proposition made practically commonplace by *Natural Theology*—Frankenstein famously usurps the role of creator. He neglects the consciousness that he believes defines his own humanity and manufactures a body, one piece at a time, just as one would assemble any other mechanical object. But the monster's voice, when severed from the physical apparatus that sustains it, gives form to what appears to be the kind of individuated consciousness that resembles Frankenstein's—the kind of consciousness that both the tolerant human community and the novel form might recognize as human.

The monster is always persuasive to those who hear his voice. The blind De Lacy father,

²⁰ Jonathan Crary explains how the nineteenth century revised Enlightenment thought in this regard by rejecting Locke's idea of the individual as a "passive receiver of sensation," proposing instead "a subject who was both the site and producer of sensation" (75). Once the nineteenth century defined the body as an "apparatus of predictable reflex activity" (76), perception—and ultimately human interiority—became a biological function, "one that is not uniform in all men or women" (84).

for example, who cannot see the monster's body, explains to the creature that there is "something in your words which persuades me that you are sincere" (91). Victor Frankenstein himself, upon hearing the monster's story, "compassionated" the creature, and even "felt a wish to console him" (99). Despite the depth of his feelings and the complexity of his thoughts, however, it is a mistake to believe that such a creature is capable of giving and receiving sympathy as an autonomous, self-regulating subject. He does not possess an individuated mind that is merely enclosed within an individual body. To the contrary, the monster's personality arises directly from a composite body that crosses the divide between humans and animals.²¹ As Victor rightly notes, the monster is a "filthy mass that moved and talked" (99), a machine made of many human and animal bodies assembled according to scientific laws. As such, he is far beyond the sympathy that his words initially evoke in both De Lacy and Victor, and cannot be folded within a human community of autonomous subjects, however tolerant and inclusive that community might be. His body, cobbled together from the detritus of past lives, reveals the lack of autonomy of human beings and suggests instead the physical continuity of all humanity. As modes of relation that presume the individual autonomy of all human subjects, tolerance and sympathy cannot unite the new version of humanity that the monster's body calls into existence. This body transforms humanity into a single machine where the physical structures that all share in common—rather than tolerance and sympathy—articulate one being to another.

By embedding human consciousness in the aggregate body, Shelley decimates the hierarchical relation of mind to body that liberal ideology takes for granted. In its place,

²¹ Alan Richardson makes this point about the creature's body, noting that Frankenstein raids both burial grounds and "charnel houses" for his materials.

Shelley produces new, impulsive forms of consciousness that are entirely antithetical to those that govern the households and communities of earlier novels. As a conglomeration of separate and competing systems, the body, as Shelley imagines it, possesses multiple seats of sensation. These disparate parts produce impulsive forms of thinking and feeling that compete with and even threaten the operations of the rational mind, completely bypassing the operations of observation, reflection and experience so vital to the *Bildungsroman* and to the tolerant human community. In contrast to a heroine from Austen's fiction—Emma Woodhouse, for example—who eventually acquires the ability to regulate her own behavior by reflecting upon past experience, Shelley insists that a nineteenth-century individual like Victor Frankenstein, continuous with the mechanical assemblage he has produced, can no longer choose or predict to which stimuli he will respond. Split between the demands of the rational mind and the aggregate body, his capacity for self-government—essential to participation in the cosmopolitan household—succumbs to the unpredictability of his physical sensations. His will and agency as an autonomous subject are entirely swallowed up by the human machine of which he is a part. The more someone like Frankenstein overvalues the intellect as the seat of his own humanity, treating his own body as a machine separated from consciousness, the more that body takes on a mind of its own, telling him that it depends upon the same things other forms of biological life depend on for sustenance. Beginning on the night he animates his assemblage, Frankenstein's body draws ever more attention to itself and eventually overrides the intellect, judgment, and emotional depth Frankenstein believed separated him from the species. As his pulse begins to “beat so quickly and hardly, that [he] felt the palpitation of every artery” (35), the line separating

him from any other animal or mechanical being beings to blur. In assembling his monster, Frankenstein is driven by a “frantic impulse” and “unnatural stimulus” (32) entirely contrary to his ability to govern his own behavior. Thus split between rational and mechanical being, early nineteenth-century humanity leads what the novel calls a “double existence” (76), well beyond the tolerance and sympathy that underwrite both the cosmopolitan humanity and the novel form, both of which depend upon self-governance as the basis of human action and relation.

Humanity, for someone like Paley, can be distinguished from the rest of the natural world by the unique ability to recognize, yet never experience, the ecstatic relations that bind together the rest of creation. In opening the gulf between man as individuated consciousness and man as a compound mechanical body, Shelley’s novel breaks new ground in opening to humanity the instinctual relations that Paley restricts to the animal world. She transforms the tolerant community of individuals into a mass of biological life, subject to the same unselfconscious fascination that keeps Paley’s mother bird at her nest and Agamben’s bee at his pot of honey, even as their bodies waste away. Like such creatures, a captivated human being lives without knowledge of himself and without the ability to act independently of the biological necessity that comprises his world. We see precisely this kind of unmediated relation in the fascination that binds Frankenstein to his creature and gradually renders him insensible to anything outside of that relation. As Frankenstein becomes captivated by the creature he assembled with his own body in mind, he relinquishes all claims to the autonomy that would have qualified him to lead the household. Instead, he becomes little more than a pulsating object led not by the “ardent desire of [his] soul”—the hallmark of liberal subjectivity—but by an

unselfconscious “mechanical impulse” that arises from this captivation to the machine (142). Although the tolerant family attempts to reclaim Victor as one of their own—and thus as a self-governing individual—the kind of fascination that Shelley opens to humanity places an individual like Victor outside that family of individuals, on the same terrain with the monster, conjoined to the compound life that Shelley, for better or worse, has introduced into the house of fiction.

When the bare life of the body thus moves from the status of an object of study and acquires the position formerly occupied by the mind as the sole source of subjectivity, even the most inclusive household cannot be sustained. Kant’s model of tolerance develops the Enlightenment model of individuality to accommodate the stress put upon that model by cosmopolitanism. His account of human affiliation, however, did not anticipate the drastic paradigm shift that redefines humanity as a biological condition. Despite its inclusive, flexible structure, the tolerance and sympathy that permit the Frankenstein family to include individuals like Elizabeth and Clerval prove inadequate to produce kinship in this novel. If tolerance and sympathy are based upon the idea that a human is a self-enclosed, self-regulating being, it follows that tolerance and sympathy were simply not designed to accommodate the truth that Frankenstein encounters in his education: humanity’s imbrication in the continuation of life. This alternative mode of being human calls into question the relation between the mind and the body on which the tolerant, sympathetic household is founded. That household consequently loses its symbolic power, as the mechanism ensuring the perpetuity of the relations that comprise the ideal community.

What are the consequences for the novel form when humanity becomes a walking contradiction, enjoying the autonomous subjectivity that Kantian tolerance takes for granted, while inhabiting the boundless biological machine that gained new currency with a text like *Natural Theology*? Placing Shelley's novel at the start of the nineteenth-century canon recasts the standard definition of nineteenth-century fiction as a tradition dominated by Enlightenment models of understanding and the literary forms that naturalize that ideology. No doubt because so many novels see this developmental structure as their generic legacy from the eighteenth-century *Bildungsroman* and domestic novel, criticism tends to assume that the form of fiction remained more or less constant throughout the nineteenth century. Despite the tolerant nature of these established literary forms, they cannot contain what the human had become by the early nineteenth century, or the internal conflicts that increasingly plagued humanity in the century leading up to Freud. By assuming that eighteenth-century accounts of humanity persisted to the end of the nineteenth century, criticism tends to overlook the way that novels like *Jane Eyre* or *Great Expectations* might be read as part of an alternative tradition of nineteenth century fiction that begins with the contradiction that Shelley places at the heart of *Frankenstein*. In assembling this body, Shelley destroys the notion that humanity can be represented as it was in earlier novels: as a community of self-enclosed, self-regulating subjects, united by tolerance and sympathy. *Frankenstein* negates any utopian promises of coherent selfhood, integration, and incorporation that modern fiction purportedly extends to its reader. Rather than confirming the reader's identity as a coherent liberal subject, *Frankenstein* leaves to the nineteenth century a most inhospitable problem: When the body's competing systems challenge the mind as the seat

of life—and as the human becomes a walking contradiction in this conflict—how do human beings relate to one another, if not in households and communities of individuals? How will nineteenth-century fiction navigate the new forms of thinking and feeling that subsequently arise?

Shelley offers a tentative answer to this problem by means of a narrator, Captain Walton, who models the kind of humanity that Shelley's fiction calls into existence. Frankenstein's narrative, when coupled with the sight of the monster's body, dramatizes for Walton—as for Shelley's readers—the problem that eighteenth-century letters produced when it overvalued human intellect at the expense of the biological life Walton shares with even the most “rugged” member of his crew. Through Walton, whose ambition to reach the North Pole risks the lives of his entire crew, Shelley proposes an alternative to the binary of creator and creation. To preserve the common body comprising the shipboard community, Walton turns his ship around, and, in doing so, turns Paley's contradiction inside out. However begrudging, Walton's sense of his own inextricable relation to the sea of biological life is, in Shelley's view, the only basis for human superiority at a time when both science and literature were coming to view humanity as first and foremost a biological condition, far too variegated to be linked simply by the limited powers of the mind. In contrast to the novel's households, which prove to be inadequate to the new modes of human being that had taken hold, Walton's ship, as a shifting, temporary domicile, accommodates a mass human population and protects, if without sentiment, the corporate life of the humanity it houses. In turning his ship around, Walton subordinates his individual intellectual ambition to the needs of the body he shares in common with that crew. Through Walton, Shelley thus proposes a new

way of conceptualizing human relation for the nineteenth century that values the life of the body, rather than the mind alone, as the seat of human consciousness, sensation, and life. *Jane Eyre* will take up this model for itself.

CHAPTER TWO

Jane Eyre, Charles Bell, and a New System of Natural Sympathy

Contemporary literary criticism generally understands Charlotte Brontë's *Jane Eyre* (1847) as an exemplary representative of the nineteenth-century novel, precisely because it appears so entrenched in the kind of work that has become synonymous with nineteenth-century fiction: the production of a self-regulating, morally reflective individual, whose value does not depend upon bloodline or inheritance, and who ultimately proves capable of managing and reproducing a household of similar subjects. It is not difficult to understand how readers have reached such a conclusion. In creating Jane, Brontë has produced a verbally aggressive heroine, who repeatedly asserts the independence of both her mind and her body. By narrating the novel's events through Jane's first-person perspective, Brontë has constructed what appears to be a deeply reflective, coherent subject; the novel's plot and form seem to insist that Jane's value as a human being depends upon her ability to express herself, regulate her own behavior, and affirm her independence when that independence is everywhere threatened. To embrace this reading, however, we must overlook the novel's intense interest in the relation between the mind and the body and the significant threat that relationship poses to the formula many associate with nineteenth-century fiction. In this chapter, I am especially interested in the way that the novel tests the kinds of knowledge and relationships that are

available only through the body's ungovernable impulses and instincts, rather than through the faculties necessary for self-reflection and self-government. The impulsive body, the novel suggests, is capable of producing unprecedented kinds of knowledge and human intimacy, binding individuals to one another in networks that do not end with the boundaries of any one body. Thus, when Rochester explains that a "cord of communion" (283) runs from his ribs and connects him to Jane, and when Jane claims that Rochester suits her "to the finest fibre of [her] nature" (494), they do not simply describe private, psychological longings. They speak, I suggest, in the idiom naturalized and legitimated by nineteenth-century biology and literature. Such language imagines that even respectable human beings are subject to the body's impulses, instincts, and sensations. For Brontë, to be human is to be split between the conscious reflections of the mind and the impulses of the body, and to therefore crave physical, instinctual—not merely psychological—connections with others.

By taking into account the novel's preoccupation with the relationship between the body and the mind, I read *Jane Eyre*, not as a novel that reproduces a liberal subject and a household of individuals, but as a novel that addresses the contradiction that Mary Shelley produces in *Frankenstein*. By splitting humanity between intellectual and mechanical life, Shelley made it virtually impossible for fiction to represent humanity as it had in the past—as a sympathetic community of tolerant, self-regulating subjects. In writing *Frankenstein*, Shelley produced what I see as the defining questions, not only for a novel like *Jane Eyre*, but for nineteenth-century fiction: What does it mean to be human when the ability to regulate one's own thoughts, feelings, behavior gives way to the impulses of the physical body that all share in common? What is the relationship among

individuals when the body's related parts compete with the mind as the seat of intellect, emotion, and life itself? To explore these questions, I will read *Jane Eyre* alongside the anatomical research and popular writings of the ironically named Sir Charles Bell, one of the most celebrated surgeons in early nineteenth-century Britain. His treatment of the brain and the nerves directly addresses the contradiction between corporeal and intellectual being that Shelley found so detrimental to the novel form. Together, I argue, Bell and Brontë challenge reason and self-regulation as the sole markers of humanity, and by so doing, expand the definition of the human to include models skeptical of the liberal model. Placing Brontë's treatment of emotion alongside Bell's theories of individuality, emotion, and the body provides a new sense of the novel as an arena that tests, contests, and ultimately naturalizes radically new ways of being human, rather than a form that simply reproduces liberal subjectivity.

In his unassuming, privately printed *Idea of A New Anatomy of the Brain* (1811), Bell offered the first clear explanation of the physiology of the nervous system and the specialized functions of its component parts. In this chapter, I will examine Bell's account of the nervous system as he describes it in that volume and in his subsequent works, including his revised edition of William Paley's *Natural Theology* (1836), his many lectures to the Royal Society, his publications on the nerves (1836), and his work on human expression (1824). These texts, which appeared in multiple editions throughout Bell's life, imagine the body as a conglomeration of independent systems. For Bell, the will—which he houses in the cerebrum—directs a small portion of the body's activities, but by and large, the conscious mind possesses minimal authority over the body. Instead, the body's specialized nerves regulate most of the body's activities

and connect one part to another, producing what Bell calls “higher powers of agency” that bypass the conscious faculties altogether (“Chest” 27). In this way, Bell challenges the mind’s dominion over the body, along with its unity and autonomy, and transforms the hierarchical model of the body that his predecessors since Galen took for granted, one that assumed the brain was the center of all emotional, mental, and physical activity, and imagined the nerves as merely tubes, identical in structure and function, through which the animal spirits flow between the brain and the other organs. Bell inverts this hierarchical structure and instead explores the “extensive influence of the corporeal on the intellectual part of man” (*Expression* 83). In transforming the body into a collection of autonomous systems that act upon the mind—rather than receive and deliver the mind’s instruction—Bell reconfigures human consciousness to include impulse, a category of consciousness that does not require the mind’s attention and a new form of agency that calls the body into action, independent of the will. In doing so, he establishes the foundation for both nineteenth-century science and literature to ground human consciousness, emotion, affiliation, and even human agency in the body’s systems. For Bell, the idea that a human is at once a mind and a machine is therefore far from the monstrosity that someone like Shelley imagined. His new anatomy of the body as a set of competing systems suggests that such a proposition is only natural.

I read *Jane Eyre* as a novel that tests, modifies, and naturalizes the same kind of body that Charles Bell reconfigured by featuring very different versions of Jane, each of which enacts the implicitly contradictory forms of cognition and feeling this body makes possible. Criticism has long argued that the novel upholds reason, self-regulation, and moral perfectibility as attributes of respectable personhood. I hope to draw critical

attention to the many ways that the novel tests the involuntary, instinctive, unreflective modes of being that became thinkable only when the body and its component parts became a legitimate object of scientific study by someone like Bell. In the novel, unselfconscious connections, based in the brain and the nerves, connect humanity to the external world and produce unprecedented forms of intimacy, knowledge, emotion, and communication that do not end with the boundaries of any one body. These ecstatic networks—the bonds, for example, that connect Jane to Helen Burns or to Rochester—engender a new kind of sympathy based in the body, rather than the mind. By testing these competing modes of thinking and feeling, Brontë’s novel breaks up the narrative of development, which presupposes a single integrated consciousness. But in contrast to a novel like *Frankenstein*, which narrates the destruction of the household in this split between multiple forms of being, Brontë allows us to come away with a sense of Jane as a coherent, unified character—one capable of marrying and managing a household. She does so by filtering Jane’s competing impulses through a single narrative consciousness that eludes both Shelley’s scientist and Paley’s natural theologian. In *Jane Eyre*, Brontë thus depicts even respectable humanity as split between the contradictory impulses of the mind and the body.

Neo-liberal criticism of the Victorian novel, in moralizing “detachment” as a desirable form of human interaction, assumes that Smithian sympathy persisted into the nineteenth century and determined the way that individuals understood and interacted with the world around them.¹ The emotional exchanges that F. R. Leavis, in *The Great*

¹ Amanda Anderson, Bruce Robbins, and Monica Cohen, for example, all promote various forms of detachment (both personal and professional) as modern modes of interpersonal relationships.

Tradition (1964), describes as “intense,” “vivid,” “intoxicating,” “absorbing,” “electric,” “spasmodic,” “immediate” and “primitive” have remained either “embarrassing,” for criticism or illegible, reinforcing the notion that the body’s impulses and instincts threaten the coherent selfhood of the Victorian middle class. For those critics who have lately theorized the nervous nineteenth-century body, fiction displaces this promiscuous body onto the lower classes in an effort to organize and discipline the social body, as Pam Morris has claimed, or to critique the social order, as Peter Logan has argued. Both readings reaffirm the supposition that civilized humans engage the world around them via the rational faculties. For them, Victorian fiction always situates the impulsive body in opposition to respectable middle-class sociability.²

I argue, to the contrary, that we can more accurately understand the models of emotion that organize nineteenth-century fiction after *Frankenstein* by seeing the ways that a novelist like Brontë legitimates the nervous body and the involuntary absorption this body produces. *Jane Eyre* is one of many Victorian novels that resist the classificatory logic that prioritizes reason and self-regulation over impulse. A novel like *Jane Eyre* refuses to register the impulsive body as strictly promiscuous. Instead, the novel explores how this body gives rise to new, ecstatic modes of sympathy and sensation that permit immediate, transpersonal modes of feeling and communication.

² Pam Morris describes the way that evolutionary biology underwrites and authorizes a social transformation that relies upon the emotional excesses of the “low” and the emotional restraint of the “elite” to separate the “popular” from the culturally “distinct.” Peter Logan similarly narrates a rise of concern about the extremely impressionable body of the urban working class. Jane Wood treats sensation as a threat to coherent selfhood; for her, nervous symptoms “signal the social, moral, sexual, economic displacement of those who suffer them” (5). Kate Flint and Athena Vrettos approach the question from a feminist point of view; both describe how the discourse of the nervous body was used to contain women. As Vrettos writes, “the body provided a means of controlling potentially disturbing cultural issues by relocating them in questions of physiology” (3).

Jane manages her behavior, not solely through the process of reflective self-regulation, but by acting upon sensations collected through the body's multiple seats of consciousness. Because this new human subject no longer depends upon disinterested observation and reflective experience to furnish the mind, the knowable universe in a novel such as *Jane Eyre* expands to include information that can be impulsively and instantaneously collected, independent of the mind's direction. The emotional networks in which Jane and Rochester find themselves entangled produce a new kind of sympathy that arises from the separate, competing operations of the physical body, and not from the mind. The ecstatic relationship that Jane and Rochester share, far from relegating individuals or groups to a "savage" or even inhuman state—as both Darwin and literary critics would later claim—produces unprecedented forms of intimacies, knowledge, and emotional networks that the novel form aligns with humanity itself.

The Body Before Bell

Bell's new model of the body developed in tension with two prominent intellectual traditions, each of which conceptualized the human body as a single, coherent organism governed by a central authority. Bell developed the physiological model of the brain and the nerves that he describes in his 1811 *Idea* to correct the errors he found in the work of a long tradition of philosophers and physicians ranging from Galen, in the second century, to Vesalius in the sixteenth century and Thomas Willis in the seventeenth. They imagined the human body as a coherent, hierarchical system. The brain, according to this model, governs the body by secreting "animal spirits," which the nerves then circulate throughout the body and return to the brain. By embracing this idea of the body, Bell's predecessors subordinated all of the body's operations to the brain's

command and assumed that the nerves were identical in function and purpose, as nothing more than the tubes through which the animal spirits flowed between the brain and the rest of the body.³ It is not difficult to grasp why this centralized model of the body persisted into the early nineteenth century: this way of thinking imagines the body as a single, self-contained organism that feels and acts only in accordance with the brain's command. It therefore complements the strand of thinking that imagines all human beings are self-contained subjects and envisions all human action and emotion as subordinate to the operations of the rational mind and the will. This model of the body, dependent upon the brain's direct action, leaves little room for the unwilled acts or competing impulses that would disrupt a neat understanding of the human as a rational, self-regulating being, capable of joining a sympathetic community of similar subjects.

Despite its great ideological appeal, however, this way of theorizing the brain and the nerves could not hold up once human dissection became an increasingly acceptable, if controversial, mode of studying the body, as it did in the early nineteenth century.⁴ In the discrepancy between the conventional understanding of the body and his own observations—collected through his experience as a war surgeon and his own dissections and experiments—Bell achieved an intimate knowledge of the brain and the nervous system, and formulated the questions that defined his research: If the nerves are identical in structure and in purpose, as his predecessors proposed—if one nerve, that is, performs

³ As Bell describes it, his predecessors in the study of human anatomy incorrectly assumed that “the brain presides over the body through the spinal marrow and the nerves....that a fluid was secreted from the brain, and transmitted through the nerves; that these nerves were tubes; and that this fluid was universally distributed to the moving and sensible parts of the frame; and that through its agency all the phenomena of life were carried on” (*Nervous System* 3).

⁴ See Helen MacDonald's *Human Remains* for a discussion of the debates surrounding human dissection in Great Britain in the nineteenth century.

exactly the same function as the next—why are some organs, like the lungs and the heart, connected to multiple nerves? If a single nerve performs the double function of allowing the body to move and to feel, how is it possible that any given part of the body might lose one of these properties and retain the other? That is, how can a given part of the body retain sensation, yet lose the ability to move—or conversely, retain mobility, yet lose the capacity to feel?

By raising these questions, Bell aligned himself with a group of early nineteenth-century researchers and anatomists who, by grounding the mind in the body, radically destabilized reigning ideas about the relationship between the human mind and body. Because their collective theories threatened the idea that the human body is separate from the mind, professional and public audiences alike dismissed most members of this group.⁵ Bell stands apart as one of the few whose work on the brain and the nerves was not immediately dismissed. To the contrary, Bell's work was vital to the way that the nineteenth century understood the brain, the nerves, and the expression of emotion. Bell counted Queen Charlotte and the Pre-Raphaelite artists among his readers; Charles Darwin responded directly to Bell's theories of expression in *The Expression of the Emotions in Man and Animals* (1873).⁶ Alan Richardson speculates that Bell owes his

⁵ As Alan Richardson has explained, this group included the Austrian F. J. Gall, Pierre-Jean-George Cabanis in France, and Erasmus Darwin and Charles Bell in England, as well as a number of popularizers of these new theories (5). "All," Richardson explains, "develop anti-dualistic accounts of the brain-mind, though Bell does so in his own pious fashion, and all but Bell were attacked as 'materialists,' though only Lawrence willingly accepted the charge—until forced to recant" (6).

⁶ In *The Birth of the Modern*, Paul Johnson explains that Bell's "sumptuous quarto volume, *Essays on the Anatomy of Expression in Painting*, first published in 1806, then greatly enlarged and improved in later editions, was illustrated by his own drawings...It was a landmark in the exploration of the human nervous system, and Charles Darwin, who used the third edition of 1844, found it invaluable in preparing his *Origin of Species*. But artists, amateur and professional alike, thought it a godsend. The delight of Queen Charlotte, a skillful watercolorist, was reported back to Bell, who ungraciously exclaimed: 'Oh! Happiness in the extreme that I should ever write anything fit to be dirtied by her snuffy fingers!'" John Flaxman,

success and popularity to his imbrication in the tradition of natural theology, which seemed to assure his professional and public audiences alike that he did not intend to overthrow the concept of the soul, as many feared Bell's contemporaries would do.⁷ According to William Paley's immensely popular *Natural Theology* (1802), the countless instances of perfect "fit" that articulate the disparate parts of the natural world to one another offer evidence that the natural world must have been created by a single omniscient designer. By exhaustively comparing the pieces of the natural world to the cogs, ducts, pipes, and pumps that comprise a modern factory, Paley imagined the natural world as a single, massive assemblage of related parts. Paley's account of the natural world remained popular well into the nineteenth century, in part because it adapted nature to a machine-based economy.

It is certainly true that Bell uses the rhetoric of natural theology throughout his work,⁸ but whatever social benefit he accrued through his association with natural theology, we should not assume that Bell's relation to this tradition is entirely consistent. To the contrary, in the extensive editorial notes and appendices to his 1835 edition of Paley's *Natural Theology*, Bell stridently objects to what had become the dominant tendency to theorize humanity in strictly mechanical terms. Bell's main criticism of this

R.A., the Royal Academy's Professor of Sculpture, said the book "had done more for the Arts" than anyone else in the age" (585).

⁷ As Richardson explains, when Bell claims, in his 1811 *Idea* that he is not searching for the seat of the soul, "Thanks to Bell's high standing in the medical community and his unassailable religious views, for once such a disclaimer was taken at face value. For Bell, reductionism could be avoided without resort to a unified, conscious, transcendent subject; the soul could be preserved without minimizing the claims of the body" (31).

⁸ Bell wrote one of the most famous of the *Bridgewater Treatises*, "The Hand," arguing that the complex construction of the human hand is itself proof of design. His 1835 edition of Paley's *Natural Theology* updated Paley's text to include Bell's understanding of the nervous system and on the natural world. As Aileen Fyfe has suggested, Bell's edition of Paley's text helped to ensure the relevance of natural theology as a popular conceptual model thought the late nineteenth century.

mechanical model resembles the criticism that Shelley brings to life in *Frankenstein*: in focusing exclusively on the mechanical structure of the human body, Paley's conceptual model cannot adequately explain what animates and sustains a body, or what allows that body to feel emotion. By imagining the human body as an assemblage of parts, Paley's model divests those component parts of any energy or purpose of their own, just as the pieces of a dismantled watch are "nothing singly" without the other pieces (*Natural Theology* 385). As Bell explains, "take away one of these wheels, or levers, there is no property or power in it; take a part of the body, and it has life" (368). In assuming that the pieces of nature's machine are created for a single purpose, written into the design of the body, Paley's model likewise cannot explain how one part of the body—the tongue, for example—serves multiple functions and acts in concert with multiple parts. Where Paley remains captivated—"for the twentieth time," Bell writes (85)—by the instances of perfect mechanical engineering we find in the wing of a bird, Bell consistently requires his reader to "not be contented with admiring the structure of the feather, or the adaptation of the bones of the wing to their office." Bell instead urges his reader "deeper into the inquiry," insisting that "it is a subject which will reward us" (*Natural Theology* 248).

"Deeper into the Inquiry"

Bell plunges "deeper into the inquiry" by thinking beyond the mechanical structure of the human body and considering, in contrast to a natural theologian like Paley, the means through which that body moves and feels. In doing so, Bell reconfigures the body as earlier generations of anatomists and natural theologians had understood it. Bell revises both earlier anatomical and natural theological accounts of the

human body by proposing that a human being is neither a coherent organism governed by a brain, nor an assemblage of dependent parts, but a conglomeration of independent, highly specialized systems. In Bell's hands, the body resembles a machine of a very different sort than the one Paley had in mind. Paley envisioned the natural world as a single machine, whose parts were nothing without the others; Bell's body, in contrast, more closely resembles a modern, systematized factory, where each part performs a highly specialized function, independent of all others. In what follows, I will explain what I find most significant about Bell new version of the body, and suggest how, by renovating the body as his predecessors understood it, Bell produced a new way of theorizing humanity.

Beginning with the earliest description of his research—his 1811 *Idea of a New Anatomy of the Brain*—Bell proposes a “new character” for the brain and the nerves (“On the Nerves” 3).⁹ In this text, Bell splits the brain itself into two independent parts—the cerebrum and the cerebellum—and argues for the autonomy and independence of each. The cerebrum and the cerebellum do not communicate with one another; each possesses its own blood supply, and will not succumb to infection or disease in the other part.¹⁰

⁹ Bell gives an overview of this “new character” in his 1811 *Idea*. As he explains there, “I have to offer reasons for believing, That the cerebrum and cerebellum are different in function as in form; That the parts of the cerebrum have different functions; and that the nerves which we trace in the body are not single nerves possessing various powers, but bundles of different nerves whose filaments are united for the convenience of distribution, but which are as distinct in office, as they are in origin from the brain; That the external organs of the senses have the matter of the nerves adapted to receive certain impressions, while the corresponding organs of the brain are put in activity by the external excitement” (5).

¹⁰ As he explains: “I have found evidence that the vascular system of the cerebellum may be affected independently of the vessels of the cerebrum. I have seen the whole surface of the cerebellum studded with pots of extravasated blood as small as pin heads, so as to be quite red, while no mark of disease was upon the surface of the cerebrum. The action of vessels it is needless to say is under the influence of the parts to which they go; and in this we have a proof of a distinct state of activity in the cerebrum and cerebellum” (*Idea* 19).

Bell devotes little attention to the cerebellum, and instead finds the cerebrum far more important, as the part of the brain entangled in the operations of feeling and voluntary movement. He subdivides the cerebrum and assigns its separate parts autonomous functions, housing the mind—including the will—in the non-sensitive surface of the cerebrum, and assigning sensation to the more sensitive tissue at its core. With these basic, preliminary claims, Bell significantly revises older ways of theorizing the human. In splitting the brain into separate, specialized parts, Bell strips the body of the single, centralized authority that his predecessors believed controlled all movement and feeling. Even more astonishing, Bell's new anatomy divests these independent parts of the brain of their direct influence over the body. In *The Nervous System of the Human Body*, for example, Bell contemplates why injuries to one side of the brain result in paralysis of the opposite side of the body. The answer to this puzzle, he concludes, must rest upon the fact that “the brain does not operate directly on the frame of the body, but through the intervention of a system of nerves whose proper roots are in the spinal marrow” (226). With such statements, which appear frequently in his work, Bell severs the body from the brain's direct command and displaces the governing authority in the body onto the nervous system. Under Bell's new conceptual model, the brain is no longer the center of the body and the seat of life. The brain is instead one organ of many that depends upon the direct action of the nerves; the body as he imagines it has no single governing authority.

Bell splits the nerves into four autonomous systems—the majority of which have no communication with the brain—and proposes highly specialized functions for each system. Older models of the body presumed that the nerves were identical in structure

and in function, and that the body resembled something like a closed circuit: each nerve, subordinate to the brain, performed the same double function of delivering the will from the brain to the body and carrying sensation from the body back to the brain. The body as Bell imagines it is, in contrast, not a coherent whole, ruled by the brain and the will, but a conglomeration of independent systems that have virtually nothing to do with one another. The will plays a smaller part than ever before in governing this body: only one of these four classes of nerves—the motor nerves—delivers the brain’s will to the rest of the body and permits the various parts of the body to move. A second class of nerves—the nerves of sensation—receives sensory impressions and communicates those impressions to the brain. A third class of nerves, which Bell calls the “respiratory” system of nerves, seems to interest Bell the most. This system of nerves unites the organs of the abdomen, chest, and face in the act of respiration. A final system, which Bell seats in the stomach, regulates the automatic functions of the body, including the beating of the heart and digestion. Like the separate parts of the brain, these independent systems do not communicate with one another, or “partake of each other’s influence” (“Exposition” 8); they do not originate from one center in the body, as many previously supposed, and they do not have the same structure. By dividing the regulation of the body between these independent systems, Bell’s new anatomy resolves many of the problems he identified in his predecessors’ work. This model of the body offers the first adequate explanation for how a given part of the body can lose sensation and retain mobility, and vice versa: because sensation and motion are governed by independent networks of nerves that originate at entirely different points along the spinal cord, injury to one of

these networks will not affect the others.¹¹ Bell's new anatomy likewise allows him to explain why multiple nerves lay claim to the same organ, and what allows an organ to perform different functions: each nerve provides the organ with a distinct property—the ability to move, for example, or to feel—or unites it to other organs and muscles in the relations necessary to perpetuate life.

In explaining physical phenomena that had puzzled his predecessors, Bell's model of the body produced new problems for the definition of humanity. When he split the governance of the body between distinct systems of nerves, Bell restricted the influence of the will over the body, and opened the body to the different forms of sensation and consciousness that each distinct system produces. Bell grants the will a very limited degree of authority over the body's actions through the motor nervous system. In the operations of the motor nerves, which facilitate voluntary movement, Bell keeps intact the chain of authority that his predecessors imagined: a command originates in the brain, and the nerves deliver that command to the body. But this hierarchical relationship between the mind and the body applies only to the motor nervous system. Bell reverses this hierarchical relationship of mind to body by arguing that impressions from outside the body bypass the brain to work directly on the sensory nerves. He writes, "the ideas of sense, as light, sound, or taste, are generated by the organs of the senses, and not by anything received and conveyed by them to the sensorium" (*Expression* 85). In this way, Bell called into question the basic principle of individual autonomy. Under these

¹¹ In his 1811 *Idea*, Bell was the first to propose that what appear to be single nerves, branching directly off of the spinal cord, are instead two independent, specialized nerves bound together in the same sheath. These nerves, upon close examination, originate on different sides of the spinal cord. Through his many experiments on animal bodies, Bell discovered that the nerve that originates at the anterior side of the spinal cord controls motion, while the nerve that originates at the posterior side controls sensation. François Magendie, a French surgeon, made the same discovery at roughly the same time. Paul F. Craneffeld narrates the details of the ensuing controversy in *The Way In and the Way Out*.

circumstances, the human is more object than agent, open—and vulnerable—to the impulses that act directly upon the body from outside of it, independent of the mind's regulation. While Bell's predecessors imagine the body as one coherent system, closed off to all others, Bell renders the boundaries of that body permeable to the stimuli that Bell describes as "external excitement" ("Idea" 5). These impulses are vital to the operations of the body; they act directly upon the nerves, and through those nerves, call the mind into action. By opening the body to impulse, Bell's new anatomy suggests that to be human is to be caught between the will, carried from the brain to the body through the motor nerves, and the stimuli that excite the body into action from outside of it.

Bell invokes a residual model of sympathy that dates back to Galen to describe the regulatory power that resides in the body, separate from both volition and sensation.¹² The respiratory nervous system, exercising what Bell calls "higher powers of agency," unites the body's muscles and organs in a sympathetic network that includes the stomach, the heart, the lungs, and the muscles of both the torso and the face. These nerves originate from the center of the spinal column, which leads directly to the medulla oblongata, rather than the brain. The respiratory nerves therefore connect these muscles and organs to one another by means of a power that is separate from both the brain's

¹² As Edwin Clarke and L. S. Jacyna explain, "'Sympathy,' or its Latin equivalent 'consensus,' was a rapport thought to exist between parts of the body, especially the organs, that were not anatomically connected...As Galen had originally pointed out, this involuntary interrelationship of sympathetic harmony in the body was effected by way of nerves or blood vessels" (102). Elizabeth Wilson elaborates on this history: "Sympathy was usually deployed clinically to explain strange affinities in disease states (e.g., the kinship of nasal symptoms with uterine diseases). Distant organs were thought to respond sympathetically to another organ's anguish, thus generating puzzling organic alliances. The sympathetic nature of these symptoms was later revealed to be due to reflex actions...Rather than liberating biology from this eccentric notion of interorgan alliances, modern physiology has condensed sympathy into the structure and function of the autonomic nervous system. The vestigial terminology of 'sympathetic' and 'parasympathetic' registers the long established character of nervous substrate" a reflexive affinity for other organs and bodies" (73-4).

influence and the conscious will. When the eyes involuntarily blink when the body sneezes, for example, or the muscles of the chest automatically move with “every little motion of the nostrils” (“Chest” 13), it is not through the direct action of the will, but through the “sympathetic” relation the respiratory nerves establish among these remote parts. Although Bell accords the mind a limited degree of control over the respiratory system through the motor nerves—as we find when we voluntarily inhale, for example—he insists that the will actually produces a “disturbance” when it competes with the sympathetic relations that join the organs to one another networks (*The Nervous System* 11-12). The sympathy relating organs protects the body more reliably than the will: in bypassing the conscious mind, the respiratory nerves call distant, related parts of the body—like the lungs and the eyes—into immediate action, independent of the mind’s direction. Because the respiratory nerves “have a center and source of power different from that of voluntary nerves,” the sympathetic relations they create remain functional long after the brain has died and relinquished its communication with the rest of the body (“Chest” 19). In this context, we understand why Bell is so fascinated by the fact that birds remain alive, if briefly, without their heads: this phenomenon affirms his implicit argument that the brain exercises limited control over the body, and the corollary argument that volition is simply one of several powers that ensure the life of the body. For Bell, the agency that binds the body’s organs and the muscles in sympathetic networks is much more instantaneous, and therefore much more consistent than the conscious will alone.

If, as I have suggested, natural theology created a problem for the Enlightenment understanding of the individual by transforming humanity into a single mechanical body,

Bell's model of the body produces the opposite problem: he internally divides the individual between multiple nervous systems and opens the human to the competition between them. Under his new conceptual model, to be human is to be split between autonomous systems that together do not form a coherent whole, divided between the multiple forms of feeling and agency that operate independent of the will, and open to the impulses that act directly upon the body, independent of the mind's regulatory influence. The many case histories that Bell includes in his lectures and publications bring this new humanity to life for his audience. In his lecture to the Royal Society on "The Nerves of the Chest," Bell describes asking one patient, paralyzed on one side of his body, to voluntarily raise his paralyzed shoulder. When the patient made the conscious effort to move his shoulder, it predictably remained inert, but when Bell asked his patient to breathe deeply, he found that "both shoulders were elevated at the same time that both the nostrils were in motion" (13). Although an injury had severed this patient's shoulders from the brain's influence—and therefore from the will—his shoulders moved involuntarily in the act of breathing, called into action by the sympathetic relation uniting the shoulders to the lungs. In amassing hundreds of examples like this one, Bell redefines the human body, one patient at a time. Although a human being appears to be a single, self-contained, self-regulating subject, that being is multiple—comprised of independent nervous networks and subject to the very different forms of agency and sensation that arise from those networks. The autonomy of each nervous system—and the potential incoherence of the assemblage called the body—becomes most visible when one of those systems breaks down, resulting in the kind of patient that fascinates Bell. His case studies make visible the fact that the brain's power over the body is neither

absolute nor wholly necessary. When the body loses the ability to regulate aspects of itself through conscious means, the body's other systems continue working as if nothing had happened.

“The Softest Breathing of Sympathy”

In *The Anatomy and Philosophy of Expression*, originally published in 1824 and revised multiple times during the nineteenth century—a text that prompted Darwin's later work on the expression of emotion—Bell takes up the central question that links his work to Brontë's: how does this new human being, comprised of multiple nervous systems and subject to their competing forms of agency and sensation, enter into emotional relationships with other human beings? Fifty years before Bell initially proposed his new anatomy of the body, Adam Smith, in his *Theory of Moral Sentiments* (1759), argued that humans share emotion through an imaginative process based in consciousness and compatible with rationality mind. Smith assumes that human beings are naturally gregarious, and he wishes to account for how individuals connect with one another in sympathetic communities. The visual aspects of emotion—or what might be called the spectacle of suffering—are critical for Smith, as the visual signs that permit one individual to imagine and identify with the emotions of another. Like Smith, Bell begins with the basic premise that humans are inherently benevolent beings who naturally crave companionship and sympathy. As he explains, “Man is gregarious; he looks for sympathy: it is not good for him to be alone” (53). Facial expressions are as critical for Bell as for Smith in producing a sympathetic human community, as the machinery that makes visible the mental and emotional states that would otherwise remain private. The flushing of the cheeks in shame, or the subtle twitching of the mouth in sorrow need no

interpretation; the expressions, for Bell, constitute a universal language that all humans understand—regardless of background or cultural difference—because it is “deeply laid in our nature” (90). Although Darwin will later challenge his claims, for Bell, the ability to experience and communicate emotion sets humanity apart from the animal species and affirms the intellectual superiority of humanity. This universal language naturally unites those who see and experience it, producing the kind of sympathy that Bell describes as “the bond of the human family,” one individual at a time (145).

Bell shares Smith’s desire to view human beings as sympathetically united, and like Smith, he values the expressions as the primary way sympathy between individuals is produced. Bell’s new anatomy, however, far outpaced the way that the Enlightenment understood human intimacy, and the multiple, systematized body that Bell produces clashes with the self-enclosed body that Smith takes for granted. Smith’s version of sympathy is based upon the premise that a human being is a self-enclosed subject, whose detachment from all other individuals permits him clearly to perceive and reflect upon the world around him from an “impartial” point of view. By the time that Bell proposed his new anatomy, this idea of the individual was already under considerable pressure, as the body, in works including Paley’s *Natural Theology* and Mary Shelley’s *Frankenstein*, encroached upon the rational mind that the Enlightenment took for granted as the sole marker of human being. By transforming the body into a conglomeration of independent systems, which function independent of the mind, and opening that body to multiple, ungovernable impulses, Bell rendered more tenuous than ever the ideal of a community of self-regulating individuals united sympathetically. In theorizing the emotions, Smith assumes that the mind works directly upon the body and that the individual can therefore

control and restrict the expression of emotion in order to make himself a suitable object of sympathy. The emotions, according to this way of thinking, are interior, personal, and private; facial expressions are subject to the control of the will and are important only insofar as they make those interior states publically visible.

In his account of the expressions, Bell finds this relationship of mind to body inadequate; as he suggests, “there are characters expressed, and changes of features produced, which it is impossible to explain on the notion of a direct operation of the mind upon the features” (*Anatomy* 82). He argues for the “extensive influence of the corporeal on the intellectual part of man” (83). By so doing, Bell redefines interiority as the play of the organs and competing nervous systems, rather than the reflections of a contained, rational mind. Emotion, under these circumstances is no longer a function of consciousness but a condition of the body, which might more accurately be called “affect.”

These contradictory accounts of expression collide with one another in Bell’s account of facial expression, as the mind’s will and the body’s impulses compete with one another. Bell is not entirely willing to abandon the will in his account of the expressions, since the face is served by a network of motor nerves that deliver the mind’s will to body. His suggestion that the muscles of the face are subject to control—and his claim that we most easily sympathize with the individual who successfully “subdues the passions which directly refer to himself” (*Expression* 200)—links his account of the expressions directly to Smith’s and leaves room for the direct action of the brain over the muscles of the face. But Bell also constructs a rich, new theory of emotion based entirely in the respiratory nervous system, which competes with the will for control of the face.

In Bell's unromantic configuration of expression, the lungs and heart are what he calls the "instruments of expression." Without these organs, working together, "we should walk the earth coldly indifferent to all emotions which may be said in an especial manner to animate us, and give interest and grace to human thoughts and actions" (*Expression* 84). The passions and emotions, for Bell, work directly on the heart, prompting the heart to beat more quickly. The nervous network that sympathetically links the heart to the lungs and the face subsequently calls these disparate parts of the body into spontaneous action. The flushing of the cheeks, or quivering of the mouth in rage or grief are therefore well beyond the reach of the will, produced by a nervous network that operates directly on the body, independent of the brain. The mind cannot control these expressions, but according to Bell, these expressions have enormous power to influence the mind. As he explains, "the operation or play of the instrument of expression precedes the mental emotions with which they are to be joined, accompanies them in their first dawn, strengthens them, and directs them" (*Expression* 87). Simply put, the impulses and expressions of the body, beginning in the heart and spreading to the face, excite the feelings of the mind, and not vice versa.

In drastically diminishing the mind's influence over the body, Bell's theory of the emotion requires a new theory of human relation—Smith's vision of sympathy shared between self-contained, self-governing individuals is insufficient to unite human beings as Bell imagined them. Bell assumes that the sight of another's expression binds those who see and experience it in what he calls the "softest breathing of sympathy;" this feeling is "excited by expression, so deeply laid in our nature, as to have influence, without being obvious to reason" (*Expression* 90). His decision to describe sympathy in

respiratory terms—as the “softest breathing of sympathy”—is not simply figurative. The sight of another’s emotions, as his language suggests, bypasses the conscious mind and acts directly upon the respiratory system of another, creating between them a sympathetic network based in heart, lungs, and the face. To sympathize with another person is not to imaginatively bring their emotions “home.” Sympathy, in Bell’s account, is contagious, something that can be caught by simply inhaling.

Charles Bell and Currer Bell

In writing *Jane Eyre*, Brontë takes up the problem for fiction that arose in the early nineteenth century, when humanity began to imagine itself in principally biological, rather than social or cultural terms. In this way, Brontë’s novel shares a common preoccupation with a novel like *Frankenstein*, which imagines this shift from culture to biology as entirely hostile to the dominant form of fiction. For Shelley, the compound mechanical life of the human species, which she grounds in her monster, is completely antithetical to the process by which earlier fiction produced autonomous, self-regulating subjects and reconciled those subjects to the larger human community. Fiction like Austen’s, for example, produces this version of humanity by educating and individuating its members, one at a time, and by housing those individuals in sympathetic, tolerant households of similar subjects. The households and small communities that we find in an Austen novel are simply not designed to accommodate the massive assemblage of related parts that had become the dominant way of theorizing human life by the time Shelley wrote *Frankenstein*. In conjoining all in one compound body, this new conceptual model dissolves the boundaries between human beings, and by so doing, obliterates the sense of detachment between humans that allowed autonomous subjects to sympathize with and

tolerate one another. In giving novelistic form to the conflict between these two radically opposed ways of theorizing humanity, Shelley leaves humanity at an apparent impasse, oscillating between the defunct household, where sympathy and tolerance have lost their ability to produce and unite individuals, and the human machine, which dissolved the distinction between one human and the next. Under these circumstances, how do human beings bond with one another, if not in households and communities of individuals? How must fiction change to accommodate this shift from culture to biology?

Brontë directly addresses these questions in *Jane Eyre* by appropriating the nervous body as Charles Bell imagined it and the new modes of human affect that his new anatomy made possible. By incorporating this body and its forms of expression into her fiction, Brontë provides an unprecedented alternative to the hostile forms of human being—the intellectual and the mechanistic—that collide in a novel like *Frankenstein*. In figuring Bell's new model of the body in a character like Jane, Brontë produces a very different kind of human being for nineteenth-century fiction, one who is split between the multiple forms of consciousness, sensation, and sympathy that arise from the body's independent systems. For Brontë, the nervous impulses that compel this new subject to act, independent of the will, ultimately prove more reliable than reason and self-regulation alone in navigating a world where the definition of humanity had shifted onto the biological life of the species. The diverse forms of expression and sympathy available to this subject, based in the body, rather than the mind, provide a new alternative to the rigidly opposed modes of human connection that Shelley brings into conflict in her novel. As Brontë imagines human feeling, the impulses of one body act directly upon another, uniting those bodies in a new version of sympathy that does not

depend upon bloodline, inheritance, class, or even reason. This kind of kinship, in uniting characters like Jane Eyre and Helen Burns—or Jane and Rochester—selectively assimilates what the novel calls “naturally sympathetic” bodies, excluding all others. For Brontë, humanity is thus comprised of impulsive bodies bound in small, intimate groups and pairs—rather than the household of individuals or the mechanical mass that clashed so violently in *Frankenstein*.

By proposing this new human subject and this alternative mode of human feeling, Brontë makes the novel into a form that can navigate the impasse between culture and biology that Shelley found so detrimental to fiction. To do so, Brontë must depart from the conventional novel forms, including the *Bildungsroman* and the domestic novel, and the plotline of individual development that those forms took for granted. Jane’s character does not develop into a coherent, self-regulating *Bildungsroman* heroine, and the novel does not reproduce a household of individuals. In place of the rational faculties, Jane relies upon the multiple forms of impulse and consciousness that arise from both her body’s independent systems and from the “natural sympathy” that she shares with a select few. That sympathy does not respect the boundaries of autonomous minds and bodies. To the contrary, the sympathy and kinship that Jane and Rochester share assimilates them physically and mentally as one being who share even organs and nerves. By parting with the traditional forms of fiction in these ways, Brontë produces a novel that acknowledges the biological life of humanity, which claimed a greater part than ever before in defining human being. In imagining that this natural sympathy unites only those beings who share a natural, physiological affinity for one another, Brontë’s model of human connection ingeniously avoids the problem that Shelley brought to life in

Frankenstein: she acknowledges the biological basis of human life without abandoning humanity to the mass.

“A Pilgrimage Toward Selfhood”

Over time, *Jane Eyre* has become synonymous with the *Bildungsroman* tradition, a literary form that narrates the development of an autonomous individual and reconciles that individual, usually through marriage, to the larger social body. The idea that *Jane Eyre* can be grasped as a narrative of individual development has been particularly useful to feminist critics invested in reading the novel as a defense of a specifically female selfhood; feminist criticism has therefore played a central role in aligning *Jane Eyre* with the *Bildungsroman* tradition. Sandra Gilbert, to give just one of many notable examples, claims that the novel is a “distinctively female *Bildungsroman*” that enacts the struggles that “Everywoman in a patriarchal society must meet and overcome” (Gilbert 483).¹³ Even as more recent discussions of *Jane Eyre* have eclipsed these feminist readings, the residual claim that *Jane Eyre* narrates a “pilgrimage toward selfhood” (Gilbert 489) continues to inform critical discussions. Jane is routinely touted in criticism as one of Victorian fiction’s most independent, deeply reflective characters. George Levine epitomizes this pervasive critical tendency when he explains that a character like Jane is “insistently herself” and “refuses to defer to anyone beyond the required limits,” (94); for Levine, the primary purpose of nineteenth-century fiction is to “celebrate[] the selfhood” of someone like Jane (96).

¹³ Lisa Sternlieb picks up where Gilbert leaves off, explaining that “Brontë has written what is arguably the first important female *Bildungsroman* in English literature, and it is crucial to her novel of education that the heroine learn to lie” (504). Adrienne Rich argues that Jane does not develop, but rather begins the novel as a coherent self. As she explains, “Charlotte Brontë is writing—not a *Bildungsroman*—but the life story of a woman who is *incapable* of saying *I am Heathcliff* (as the heroine of Emily’s novel does) because she feels so unalterably herself” (470).

In what follows, I aim to draw attention to the ways that in *Jane Eyre*, Brontë acknowledges the biological basis of human life and defines humanity as both rational *and* impulsive, split between the diverse systems that permit conscious thought and self-governance, and those which call the body into action, independent of the mind's direction. Jane's conscious decision to advertise, for example, or her refusal to become Rochester's mistress certainly reinforce the critical tendency to understand Jane as the classic example of the kind of highly independent, self-governing subject that nineteenth-century fiction purportedly reproduces as a matter of course. In emphasizing these particular moments, however, criticism has obscured the many ways that Brontë disarticulates the liberal subject and disrupts the narrative of development by prioritizing the body's impulses over the rational faculties. By producing a subject like Jane, and by testing the impulsive relationships available to this new subject, Brontë produces a new kind of novel that can accommodate the encroachment of biological life.

“A Heterogeneous Thing”

In writing *Jane Eyre*, Brontë opens the body to sensations that arise from outside of it and legitimates the impulses that arise from both those sensations and from the body's disparate parts. A nineteenth-century subject like Jane is thus not a single, coherent being. She is instead multiple—a “heterogeneous thing” (23), as she calls herself—in the sense that she, like Bell's patient, is a conglomeration of systems that together do not comprise one coherent self. These multiple systems operate independently of one another and of the conscious will. They are open to impulses and sensations that arise from outside of the body. For Brontë, as for Bell, the rational mind certainly exercises a degree of control over the human subject, but the rational, reflective

mind so critical to earlier fiction is simply one of multiple means of intelligence and self-governance; that thinking mind exists in tension with the diverse sensations, impulses, and even selves that arise from both within the body's independent systems and from the world external to that body.

These competing systems become most visible when Jane describes the means through which she speaks and remembers. Her many declarations of selfhood—those most celebrated by feminist criticism—originate not from the conscious mind, but from a responsive body, which comprehends and speaks by virtue of the nervous sympathy that governs the body's systems and excites the disparate parts of the body into action. The impulses that Jane experiences constitute a legitimate form of agency and intelligence, based in the body's organs and nerves, rather than the mind. Unlike the forms of interiority that we find in an Austen novel, this intelligence is unhampered by the processes of observation, reflection, and experience. Under this more efficient system of governance, the body's disparate systems call the body into immediate action, without the mind's direction. The young Jane finds, for example, that in fighting with Aunt Reed, the intelligence of her body, rather than her mind, directly calls her tongue into action. Her responses to Aunt Reed are “scarcely voluntary;” her body consistently “pronounce[s] words without [her] will consenting to their utterance” (36). Brontë houses human feeling and memory within the same systems that call her tongue into action, as we discover when Jane's “nerves”—rather than her mind—fear John Reed and bear the memory of the Red Room. As she explains, “every nerve I had feared him, and every morsel of flesh on my bones shrank when he came near” (16). When we consider the novel's many such moments, where Jane's nervous impulses claim priority over the will,

alongside Jane's many declarations of autonomy, they together show the way that Brontë, in producing Jane, restructures the relationship between the mind and the body in the very terms that Bell's work provides. To be a self, in this novel, is to be subject to both the conscious and unconscious forms of "intelligence," "judgment," and "feeling" that arise from the body's competing systems—to the forms of intelligence and feeling that allow Jane, at one moment, to govern her own behavior and narrate her own story, and those which, at another moment, stimulate her body into immediate, involuntary action. By preserving a place for the rational faculties alongside the impulsive forms of feeling and affect this body made possible, this new model of the human body allows Brontë to legitimate the body's impulses without granting those impulses unchecked dominance.

The Household and the Institution

Upon proposing this new human being, more conglomeration than coherent self, Brontë runs directly into the central motivating problem of the novel: What is the basis of human relationships when human beings are no longer entirely self-enclosed, nor entirely self-regulating? Can the same households and communities that we find in earlier fiction sufficiently accommodate these new, impulsive human subjects? The small communities that we find in Austen's fiction, for example, and the households that her novels typically reproduce operate according to the basic premise that Kant articulates in his description of "perpetual peace." According to Kant, any given community can expand to include members from outside of it, under the assumption that all beings, by virtue of a common humanity that all share, are capable of regulating their own behavior and abiding by the law. In Austen's fiction, the assumption that all beings are self-enclosed, self-regulating

subjects permits families—like the Woodhouses—to expand to include members who are not related by blood or marriage.

To test whether the household can sufficiently connect humanity as both she and Charles Bell imagine it, Brontë begins *Jane Eyre* by requiring the Reed household to include Jane, the embodiment of Bell's competing nervous systems. Jane initially assumes that the Reed household operates under a similar set of rules as the households we find in Austen: self-regulation, to her mind, should be the means through which she can make herself tolerable to others, and a worthy object of sympathy and affection. As Jane reports, much to her own confusion, "I dared commit no fault: I strove to fulfil every duty; and I was termed naughty and tiresome, sullen and sneaking, from morning to noon, and from noon to night" (22). Despite her best efforts at self-regulation, Jane, of course, cannot entirely control herself, as a being split between multiple systems of agency. Because the household is only designed to accommodate autonomous, self-regulating subjects, it must reject Jane as a being who is not capable of managing her own behavior.

These are not, however, the only grounds upon which household must reject Jane. This household cannot accept her because the basis for human community as Brontë imagines it no longer depends upon self-regulation, but upon a biological affinity that Jane certainly does not share with the Reeds—and that the Reeds do not even share with one another. In constructing the Reed household, Brontë has not assembled a tolerant community that extends universal hospitality to those who are capable of governing themselves. She has instead assembled a disfigured household—one of many in Victorian fiction—that cannot produce sympathy, tolerance, or even the slightest

affection between its inhabitants, regardless of how well those inhabitants govern themselves. The vehemence with which this household rejects Jane depends only partially upon her ability or her failure to regulate her own behavior; her expulsion from the household has more to do with the fact that the household is simply too narrow to accommodate what humanity had become in the nineteenth century. When Brontë describes Jane as an “interloper,” or an “uncongenital alien” in the Reed household (24), she makes the critical point that humanity should be understood as a heterogeneous species, composed of competing systems and variations that are, like the members of the Reed family, naturally “opposed . . . in temperament, in capacity, in propensities,” and pitted against one another by virtue of a natural antipathy based within the body’s systems (23).¹⁴ Even if Jane could perfectly regulate her own behavior (which she cannot do), the household as a mode of human affect simply cannot produce concord between naturally antipathetic beings. As Helen astutely remarks, Aunt Reed does not dislike Jane as an individual; it is Jane’s “cast of character” which repels her (69).

If the household is far too limited to accommodate the impulsive forms of life it takes in, Brontë dramatizes the opposite problem—the central problem that arises from Bell’s account of the human body—in her description of life at Lowood School. Bodies, for Bell, are open to impulses that arise from outside of them; the lungs, nerves, and the heart are particularly vulnerable to feelings and expressions that pass contagiously from one body to the next. In imagining, in Lowood School, a form of human life that can

¹⁴ In moments like this one, Brontë relies upon polygenetic accounts of human origin and development in order to explain human difference. Polygenesis—the theory that different groups of humans descended from different sets of parents—is usually considered inherently reactionary and retrograde because it can so easily be appropriated for racist purposes. This is no doubt why criticism has so staunchly refused to see its positive and progressive side. In the novel, as I will suggest, Brontë uses this account human development to conceptualize human difference not hierarchically, but as equivalence. For discussions of polygenesis, see George Stocking, *Victorian Anthropology* and Nancy Armstrong, *How Novels Think*.

expand to include anyone, regardless of class or pedigree, Brontë constructs a way to test the consequences for such openness. The sociality that Brontë brings to life in Lowood School more closely resembles the life of a beehive than anything else, from its architecture to the systematized forms of life inside. On her first night, Jane follows Miss Temple “from compartment to compartment, from passage to passage, of a large and irregular building” towards the “the hum of many voices.” The hum, she finds, arises from a body of students whose “number to me appeared countless;” it is the “combined result of their whispered repetitions” (53). As if one insect body, the girls pass cake among themselves, “shared into fragments,” drink from the mug “common to all” (54), sleep together in beds “filled with two occupants” (54), and possess no distinguishing physical features that set them apart from the others. As they sit together, “motionless and erect,” they comprise a “quaint assemblage” (56) that moves in mechanical concert “as if moved by a common spring” (57). The school, as Jane thus finds on her first night, is not a collection of self-regulating subjects; it is a beehive that houses a body of schoolgirls, resonating with the sounds of both knowledge and illness passing from body to body and mind to mind—that is, with the “low, vague hum of numbers” (55) mingling with the “sound of a hollow cough” (58). It is impossible to survive as an individual in this context, where difference is a punishable offense—as Julia Severn finds, whose natural curls must be cut off to preserve uniformity among the student body. It is likewise impossible to survive by surrendering to the collective life of the school, as does Helen Burns; to so willingly relinquish one’s claim to individuality, in this novel, is to succumb to the competing illnesses and infections that unite all in the group death that eventually claims Helen.

In setting up her novel with the opposed forms of sociality we find in the household and the school, Brontë shows the inadequacy of both as a means of connecting the new version of humanity that she introduced into fiction. The household cannot accommodate the competing forms of impulse and physiology that Brontë borrows from Bell and grounds in Jane, but the contagion that governs Lowood School—the contagion built into Bell’s model—threatens to obliterate the differences between all subjects, in conjoining all in one open, compound body. In staging this impasse between sympathy as a function of consciousness and the affective life of the body, Brontë raises a the larger question: how can fiction recognize and legitimate the impulsive basis of humanity without entirely abandoning the individual marked by consciousness and endowed with the power of self-government?

A New Exceptionalism

In testing the forms of human relationship available to Jane—more a conglomeration of systems than a coherent self—Brontë imagines an alternative way of establishing relationships, when self-regulation, sympathy, and tolerance have lost the ability to unify humanity in families. Brontë depends upon the body’s competing systems and impulses to conjoin human beings in companionships that do not depend upon aristocratic bloodline or individual reason. “Natural sympathy” supplants the defunct household as a model of intimacy and sidesteps the more urgent problem of contagion that Brontë discloses in her representation of Lowood School. We see this new form of natural sympathy most clearly in the novel when Jane, standing before her peers at Lowood School, receives sustenance from nothing more than a look from her schoolmate Helen Burns:

What my sensations were, no language can describe; but just as they all rose, stifling my breath and constricting my throat, a girl came up and passed me: in passing, she lifted her eyes. What a strange light inspired them! What an extraordinary sensation that ray sent through me! How the new feeling bore me up! It was as if a martyr, a hero, had passed a slave or victim, and imparted strength in the transit. I mastered the rising hysteria, lifted up my head, and took a firm stand on the stool. (79)

The “extraordinary” sensations that Jane experiences in this passage—sensations that she also shares with Rochester—are the product of the life and common body she shares with other human beings. This natural sympathy bypasses the processes of observation, reflection, experience, and judgment built into Smith’s account of human sympathy. Brontë argues instead that the impulses of one human being work directly on the body of another, producing a form of intelligence in that body. As we see in the moment between Helen and Jane, the expression in Helen’s eyes—the “strange light” that she herself cannot control—produces a form of sympathy that resembles the model that Bell had in mind. The sight of Helen’s face works directly upon Jane’s body to produce a form of sensation that Jane can barely describe. These sensations assimilate Jane and Helen as one being whose very organs and sensations correspond and communicate by means of a natural sympathy that allows Jane elsewhere in the novel to feel Helen’s punishment in her own fingertips.¹⁵ Far from producing disorder in that common body, as we might assume, this natural sympathy between bodies produces a new form of self-governance that does not depend upon the mind. To the contrary, the direct action of impulse from outside of the body generates intelligence within the body that, in turn, calls the mind to order and the body stands proudly rather than cringing in humiliation. Helen’s

¹⁵ Miss Scatcherd punishes Helen for failing to clean her nails by giving her a “dozen strokes” on the neck with a “bunch of twigs.” Jane reports that “Not a tear rose to Burns’s eye; and, while I paused from my sewing, because my fingers quivered at this spectacle with a sentiment of unavailing and impotent anger, not a feature of her pensive face altered its ordinary expression” (65).

expression of feeling instantly soothes Jane, allowing her to “master[] the rising hysteria,” and to stand firmly before the crowd. The intimacy that Jane shares with Helen sustains Jane within the crowd that, in turn, remains “blind to the full brightness of the orb” that only Jane can see (79).

The problem, for Brontë, is in the question of how to legitimate impulse as the primary means through which fiction binds together humanity, without abandoning humanity to the infectious body that she brings to life in Lowood School. To circumvent this problem, Brontë significantly adjusts Bell’s theory of how human beings share feeling.¹⁶ For Bell, emotions are virtually contagious, liable to pass indiscriminately from the facial expressions of one person to the heart and lungs of another, uniting even perfect strangers in the “softest breathing of sympathy.” Brontë revises Bell’s account by closing off the impulsive human subject to all but a select few. For Brontë, any given human subject is receptive to only a handful of other human beings in the way that Jane is bound to Helen and Rochester. Natural sympathy does not depend upon bloodline or natural kinship and conjoins only those beings whose systems coincidentally share a natural affinity or correspondence. Jane’s Uncle Reed, for example, favored Jane above his own children; by the same natural sympathy, Jane experiences immediate kinship with the Rivers sisters. Jane is impulsively bound to Rochester—her “brain and heart, in [her] blood and nerves . . . assimilates [her] mentally to him” (199)—in an intimacy that produces the sense of kinship that the Reed household could never offer her. As she

¹⁶ John Locke solved the same problem, in his *Essay Concerning Human Understanding*, by conceptualizing the mind as an empty cabinet, and by installing reason as its sole proprietor of this cabinet, endowed with the power to determine which ideas may remain lodged within the mind and which may not. This model permits Locke to produce a self-enclosed individual equipped to manage his own impressions, ideas, emotions, and actions, who is not at risk of being overrun by sensations that enter the body from outside of it.

reports, she felt “at times, as if he were [her] relation” (166); together, they comprise a single living entity, like the split tree of Jane’s dream—the “cloven halves” whose “community of vitality was destroyed” (309). Natural antipathy is equally as important to Brontë’s reconfiguration of Bell’s account of human intimacy. Jane remains unmoved by the greater part of humanity, and the greater part of humanity likewise remains unmoved by her, closed off by a natural antipathy equally as strong as the sympathy that unites Jane to both her friends and to Rochester. Jane describes this natural antipathy when she explains why she would find very handsome men repellent, lacking “sympathy with anything in me,” to be shunned as “one would fire, lightning, or anything else that is bright but antipathetic” (130). The same natural antipathy renders Bertha Mason repellent to Rochester. As he explains to Jane, “it is not because [Bertha] is mad that I hate her” (339), but the fact that she possesses a “nature wholly alien to mine” (344).

By thus shifting the basis of human feeling from the mental act of imagination to physical impulse—and by opening only naturally predisposed bodies to one another—Brontë legitimates the biological basis of human feeling without abandoning humanity to the status of the animal. While Brontë cannot deliver humanity from the biological life that all share in common, she can imaginatively alter the relation that a subject like Jane experiences as a member of the human species. For Brontë, the impulses that draw one body into companionship with one another body—rather than emotional depth or judgment—set that pair apart from the crowd. The intimacy that Jane shares with Rochester, for example, renders them exceptional, if only to one another. By thus using the body’s systems as Bell imagined them to make one very ordinary human being absolutely vital to the biological life of another, Brontë imagines humanity in biological,

rather than cultural terms, while maintaining the idea that each human being has individual value. By uniting each being to just a few to whom they are naturally drawn, Brontë permits humanity to survive and even thrive as a species, when each would perish as an individual in the mass.

The Affective Community

St John's presence in this novel is something of a puzzle for many critics, but reading the novel in the context of Bell's new anatomy sheds some light on his function: he stands in for the kind of subject that has no place in the kind of affective human community that Brontë assembles as her novel concludes. The novel describes St John as more statue than man, dwelling upon his cold eyes and even colder touch. His body, however, is precisely the kind of body that Bell had in mind. Like Jane, St John is a "heterogeneous thing" in that his body is a collection of independent systems that both compete with and complement one another. The competition between those systems becomes most visible in a strange, easily overlooked scene, when St John permits himself, in Jane's presence, to reflect upon Rosamond Oliver, the object of his affection, for exactly fifteen minutes. St John routinely boasts that he takes "Reason, and not Feeling," for his guide (419), yet during this fifteen minutes, he permits his rational faculties to "yield[] and melt[]" and opens his body to impulse. His mind is "deluged with a nectarous flood" and his "senses are entranced" at the very thought of Rosamond. His thoughts directly influence his respiratory nerves, as Bell would anticipate: according to Jane, "he breathed fast and low" (417). Although St John thus possesses the same kind of body as Jane, split between reason and sensation, one difference separates them and serves as the chief reason the novel must exclude him. Unlike Jane and Rochester,

he prioritizes reason and the will over the natural sympathies that arise, unwilled, from his body, and regards those sympathies as strictly retrograde. As he explains to Jane, when he blushes or trembles in Rosamond's presence—behaviors that certainly arise from the systems that do not communicate with the conscious mind—he “scorn[s] the weakness.” He regards the body's non-rational, non-willed behavior as “ignoble; a mere fever of the flesh” (418) to be overcome by the will. In prioritizing reason, which Bell restricts to just one of the body's systems, over the impulses that originate from the systems regulating the nerves, lungs, and heart, St John stands in as an antiquated form of human being that Brontë deliberately excludes from the novel. The novel finds this single-minded dependence upon the rational faculties at the expense of the body's sensations to be antithetical to the natural sympathy that the novel idealizes from the start. For that reason, the novel concludes by banishing St John from England and anticipating his immanent death, which is the death of the obstinately rational subject.

As it banishes the rational subject, the novel embraces the humanity that most fascinated Bell, whose dependence upon the will and the faculties is tenuous, at best. Bell's casebook patient, whose shoulders move but only involuntarily, illuminates the kind of subject that Brontë produces in Rochester. By depriving Rochester of both sight and touch, the senses most critical to the rational subject's grasp over the world, the novel blunts his dependence upon the will and transforms him into a being whose entire existence is defined by the body's sensations. As he explains to Jane, in the time that she has been away from him, he has busied himself with “Doing nothing, expecting nothing; merging night in day; feeling but the sensation of cold when I let the fire go out, of hunger when I forgot to eat, and, at times, a delirium of desire to behold my Jane again”

(486). Like Bell's patient, Rochester cannot depend upon the will to govern his own actions—he can “do[] nothing” and “expect[] nothing”—and must abandon himself to the body's sensations. In so doing, Rochester opens himself to forms of feeling and agency that both Bell's patient and the novel find more reliable than the will alone. In opening himself to impulse—to the “delirium of desire” he describes in this passage—Rochester famously cries out to Jane, many miles away, who hears him and responds, neither through the rational channels that St John cultivates and disciplines, nor the five senses, but in the systems and sensations their bodies share. At the moment that Rochester cries out for her, Jane describes a feeling that runs through her body, “not like an electric shock, but . . . quite as sharp, as strange, as startling: it acted on [her] senses” (466). By reading this phenomenon alongside Bell's account of the body's competing systems and the sympathies that arise from those systems, we can take the Jane at her word, understanding this communication as the novel insists it should be understood: as the “work of nature” (467).

The “household” that Brontë produces at the conclusion of *Jane Eyre* is therefore neither a household of autonomous subjects, nor a liberal society in miniature. By deliberately excluding rational humanity, and by granting such priority to impulse and sensation, Brontë reconfigures human sociality, suggesting that humanity is comprised of small, intimate companionships held together by a physiological connection based in the body rather than households and communities that cohere sympathetically. Brontë makes Rivers sisters part of this new affective community, while excluding their brother. Even before Jane meets them, as she gazes at them through the window at Moor House, she knows impulsively that they are “[her] kind” (376); she is united to these sisters in a

sympathy that resides in the body—particularly the respiratory system. As Diana cares for Jane, for example, Jane “felt sympathy in her hurried breathing” (377). The retreat to Ferndean at the conclusion of *Jane Eyre* is a retreat into the fascination that both opens Jane and Rochester to one another and closes them off from everything else. As Jane reports, “No woman was ever nearer to her mate than I am: ever more absolutely bone of his bone, and flesh of his flesh. I know no weariness of my Edward’s society: he knows none of mine, any more than we each do of the pulsation of the heart that beats in our separate bosoms” (500). Together, Jane and Rochester instead comprise one compound subject, conjoined through the natural sympathy and nervous impulses that fuse their bodies and draw their very organs into communication with one another. Like Agamben’s bee, unselfconsciously sucking at the honey that defines its world, Jane and Rochester succumb to the sensations that bind them to one another—to the “pulsation of the heart that beats in [their] separate bosoms”—without regard for the larger human community, or even for the passage of time (500). If the novel performs an important social function for its audience, it has everything to do with its ability to value humanity as a biological species, and to embrace the vision that Bell articulates: within the body’s independent systems exists the means, as Jane suggests, to a “perfect concord” between human beings (500).

CHAPTER THREE

Darwin's "Living Fossils," *Tess of the D'Urbervilles*, and the Afterlife of Impulse

A reader who considers Thomas Hardy's *Tess of the D'Urbervilles* (1891) alongside Charlotte Brontë's *Jane Eyre* (1847) might easily assume that Hardy understands human feeling in precisely the same way as Brontë: as the product of the impulses that arise from the body's competing nervous systems and conjoin individuals like Jane and Rochester, whose nerves and organs share a natural affinity for one another. George Levine, for example, cites Hardy's interest in nerves as evidence of an "enchantment," or "deep feeling for life," that links Hardy's work to Darwin's. Levine argues that we might understand Hardy's novels as an "expression of and homage to what the 'nerves' reveal, almost, as it were, to the 'nerves' themselves" ("Enchanting Hardy" 43). What Levine calls Hardy's "homage" to the nerves—and, I suggest, the most obvious resemblance between Hardy's work and Brontë's novel—is perhaps most pronounced when Hardy describes the ecstatic sensations that overwhelm Angel Clare and draw him toward Tess Durbeyfield independent of his will. The very sight of Tess's face works directly on Angel's body, as her lips "confront" him and send "an *aura* over his flesh, a cold breeze through his nerves, which produced, by some mysterious physiological process, a prosaic sneeze" (151). When we read this passage in light of the empathetic connection between Jane and Rochester, the process that Hardy's narrator describes here—including Angel's sneeze—becomes much less "mysterious" than it

would appear. Because of their biological connection, the mere sight of Tess provokes Angel's flesh, nerves, lungs, and face into immediate action, producing a sneeze that neurologist Charles Bell would also understand as a matter of course.

Given the fascination that propels Angel toward Tess with "every heave of his pulse" and opens his body to the impulses that arise from hers (155), it comes as something of a surprise that the novel abandons this language when Tess and Angel leave the dairy on their wedding day. In the idyllic space of the dairy farm, where family lineage has little bearing on the way that human beings interact, Hardy permits Tess and Angel to live as strictly impulsive beings, bound to one another by the nervous processes that call their bodies into action. Outside of the dairy farm, however, Angel and Tess become something rather different: their bodies are subject to history and time. As the couple takes up temporary residence in Tess's ancestral home, where the portraits of her forbearers stare down upon her, she whispers her reproductive history to her new husband, while covered in his family's heirlooms. Hardy's narrator rightly insists this moment changes "the essence of things" (227). In this moment, I suggest, Hardy shifts the way that nineteenth-century fiction understands human feeling, as he brings biological inheritance—embodied in the ancestral trappings that surround Angel and Tess—to bear on Brontë's basic assumptions about how human feeling works. What Levine reads as "homage to the nerves" articulates a version of human feeling that the rest of Hardy's novel complicates, a model that does not take into account the part of biological inheritance in determining human emotion.

A human body, for Brontë, is a boundless, radiant object, governed by the impulses that arise from the body's independent systems, rather than the mind. Impulse,

as Brontë imagines it, can spread from one body to the next, uniting individuals in an affective bond that does not respect the boundaries of any one body, and cares little for the differences between those bodies. It simply does not matter that Jane is a young governess with no “experience” (as Rochester routinely reminds her), sexual or otherwise, or that Rochester is her wealthy employer, roughly twice her age, with all the experience Jane lacks. These differences in age, background, and experience matter little in comparison to the affinity their bodies naturally share and the nervous communication that binds them to one another. The retreat to Ferndean at the conclusion of *Jane Eyre* is a retreat into the impulses that both opens Jane and Rochester to one another and closes them off from everything else, including the large human community, the past, and the passage of time.

We might say that the retreat to Talbothay’s dairy farm constitutes a version of Ferndean within Hardy’s novel. By pushing his narrative beyond that retreat, however, Hardy conducts an experiment in whether impulse as Brontë imagines it is compatible with the new kind of body that any novel laying claim to realism had to engage in the wake of Charles Darwin’s major works. I read Hardy’s novel alongside the claims that arise from Darwin’s three major works—*Voyage of the Beagle* (1839), *On the Origin of Species* (1859), and *The Descent of Man* (1871)¹—to suggest how Hardy’s treatment of feeling has everything to do with the Darwinian body he incorporates into his fiction. *Tess of the D’Urbervilles* is Hardy’s effort to imagine the afterlife of impulse once Darwin, purposefully or not, reconfigures the human body as a “living fossil.” Darwin is important to my argument not only for his now commonplace claims regarding

¹ I address *The Expression of the Emotions in Man and Animals* (1872) separately, in my fourth chapter.

competition, struggle, chance, and survival, but also for the specifically genealogical lens that he uses to conceptualize the earth's variegated species as a single family, one that extends both backwards in time to "one or two original progenitors" and infinitely forward to an indefinite future. By exchanging a descriptive understanding of the body for a genealogical one—exchanging, in short, a synchronic for a diachronic model—Darwin redefined what it meant to be located within and view the world from a human body.

To make a single family out of the earth's many species, Darwin deemphasizes the traits that earlier theorists believed set human beings apart from the other animal species—specifically, humankind's advanced powers of reasoning, sympathy, spirituality, and creativity—and focuses instead on the aberrant, rudimentary, and vestigial characteristics that allow him to trace the biological continuity among species. Under these circumstances, the rare appearance of a double uterus in a human being, the embryological resemblance between a human and a dog, or even the direction that the hair grows on the arms of a human being are more useful to Darwin than the superior reasoning powers that constituted for Paley the basis of human exceptionalism. These residual traits—what Darwin famously calls "the indelible stamp" of humanity's "lowly origin" (*Descent* 689)—provide the means of reconstructing lines of inheritance and descent between all biological species. The human body therefore exists in relation to countless other bodies, both human and non-human, that stretch indefinitely backwards in time and into the future. As the product of incalculable generations of selection, the human body is a "living fossil" in the sense that it bears the visible markers of its inherited animal history. As an agent of reproduction, the human body is likewise the

means through which that history is passed forward in time. Because every body bears the residual, calcified traces of earlier developmental stages, it remains ever possible, according to Darwin, to revert to those stages. Cannon Schmitt argues that, where human beings are concerned, the possibility of the “slow yielding . . . of acquired tastes to primeval instincts, of the civilized man to the barbarian” (70) is a possibility that Darwin desperately wanted to forget. Contrary to Schmitt, I see these residual, recalcitrant traits—the ancient traces of the ancestry that every living thing shares in common—as a source of fascination to Darwin, because they allow him to “claim kin” with all living things.

My understanding of Hardy’s relation to Darwin both depends upon and departs from the conventional literary critical view. Both Gillian Beer’s *Darwin’s Plots* (1983), and George Levine’s *Darwin and the Novelists* (1988), two groundbreaking studies of how Darwin’s work and nineteenth-century fiction mutually shaped one another, remain as germane today as they were when originally published. Both Beer and Levine read Darwin for the “various, democratic, multitudinous, constantly transforming, intricately entangled” language in his work, which may be read as a “forceful attack on what we have learned to call ‘logocentrism’” (Levine 86). Both read with a particularly sensitivity to the metaphors we find in Darwin’s work that lead “into profusion and extension” (Beer 7) and find moments like Darwin’s famous description of the “tree of life” or his “entangled bank” most readable for literary criticism: such moments suggest Darwin’s part in “imagin[ing] a system in which disorder, dysteleology, and mindlessness are constitutive, and, indeed, the source of all value” (Levine 94). These readings continue to underwrite the way that literary criticism reads Darwin, emphasizing the moments in his

work that appear to disrupt narrative coherence and continuity. Tina Young Choi, to give one recent example (2009), begins her own discussion of Darwin and Victorian subjectivity by taking for granted the that the “disordered, open-ended” (277) modes of thinking we find in Darwin’s work belong to a nineteenth-century self capable of “imagin[ing] a future alive with a multiplicity of potential narratives” (279).

By emphasizing these particular features of Darwin’s work, we overlook what is perhaps most fascinating about Darwin’s claims: a fundamental recalcitrance at the very heart of what we still take to be the quintessential Victorian narrative of disorder, proliferation and change. These narratives of change, I suggest, rely upon narratives of reversion and regression that Darwin pieces together by searching for the most permanent, unyielding features that persist in every living body. To make the critical point that bodies are subject to change over time, Darwin relies upon the physical structures and species that prove most stubbornly persistent from generation to generation as the rest of nature gradually yields to time, circumstance, and chance. These features are persistent, typically redundant, and out of accord with the rest of the body, but they allow Darwin to reconstruct that body’s earlier developmental stages in the narrative of descent. To make this argument, I am primarily interested in moments in Darwin’s work that have been overlooked by literary scholars—Darwin’s interest in the species that persist, unchanged, in isolated habitats, as well as his dependence upon the most redundant, recalcitrant and thus permanent structures of each body. By reading for permanence and recalcitrance, rather than for discontinuity and dysteleology, one can see the surprisingly retrospective modes of thinking that constitute the backbone of Darwin’s theory and underwrite his understanding of how bodies evolve.

By bringing this account of Darwin to bear on Hardy's novel, I want to show how Darwin's dependence upon what he calls the "residuum of change" transforms, for Hardy, what it means to have a human body and to feel (*Origin* 83). To do so, I will argue against the notion that Hardy's pastoralism in *Tess* expresses his nostalgia for a pre-Darwinian view of nature, and that the novel is consequently a "biological tragedy" that laments the plight of human beings trapped in a Darwinian world that is naturally hostile to individual subjectivity.² I will also contest the notion of *Tess* as a "hermeneutic tragedy"³ that holds Angel, Alec, or even the narrator accountable for violating Tess's selfhood, by assaulting her with her "decrepit" family line and her inauspicious descent.⁴ Despite the differences between these two ways of reading the novel, both assume that Darwin's account of evolution is hostile to the form of fiction. Darwin's account, according to these readings, curtails the individual autonomy and agency that have become synonymous with the novel form whether by redefining biology, or by producing

² Patricia Ingham, for example, reads *Tess* as a victim of her biological heritage, questioning whether the "cruellest joke of all in a world full of cruel jokes is that Tess, despite her determination to take a moral course and despite all her painful struggles, is in the end only able to act a part predetermined by the genetic line that she belongs to?" (175).

³ Laura Otis uses the terms "biological tragedy" and "hermeneutic tragedy" to claim that "*Tess* is in part a biological tragedy, because the heroine has inherited unsuitable personality traits and can do nothing about it... At the same time, it is a hermeneutic tragedy, a tragedy of misreading" (162). Sally Shuttleworth likewise reads the novel as both a biological and a hermeneutic tragedy when she explains that "In *Tess*, Hardy left it open to question whether heredity itself, or merely the idea of heredity, functioned as a determining cause" (136).

⁴ Otis reads *Tess* in this way when she claims that "Tess herself is the signifier to which society attaches whatever meaning it desires" (170); or that "Tess is a palimpsest, a body onto which a variety of texts have been inscribed, none of which do justice to the woman bearing them" (172). Earlier critics to read the novel as a "hermeneutic" tragedy include Penny Broumelha, who argues that Hardy is sympathetic to Tess's "entrapment... within the primary narrative" (91), and Tess O'Toole, who likewise reads Tess as the "subject of and victim of narrative" (89). Linda Shires likewise focuses on the novel's interest in representation, but concludes more optimistically that novel "knowingly mocks the novel tradition, as well as its own particular enterprise of representation. Tess resists being held and appropriated" (156). Peter Widdowson accounts for this critical tendency to "think about how 'meaning' (and hence ideology) is constructed within discourse, and precisely therefore, how representation becomes misrepresentation" by suggesting that "What is happening to Hardy, as a reflex of his new critical reproduction in the 1980s and 1990s, is that he is in the process of being postmodernized" (122).

a new biological standard that one individual uses to value another. It is only recently that criticism has begun to see Hardy's interest in impulse and sensation as quite compatible with Darwin's account of the natural world. According to this way of thinking, if Tess is a victim at all, it is because she inhabits a modern world that refuses her "true, truly Darwinian, affinities with Nature" (Johnson 271).⁵

All of these readings assume, with surprising consistency, that Hardy's novel is an individual tragedy—a denial of Tess's personal agency and autonomy, whether at the hands of biology, interpretation, or modernity. My own sense of the novel is that *Tess* is not a personal tragedy, but a demonstration of the divide between opposed modes of human being: one that prioritizes life, transformation, growth, and sensation, and another that prioritizes death, stasis, and reversion. By imagining a version of England where every tree, animal, face, object, and household bears the visible, "indelible stamp" of its origins—and therefore carries with it the potential to revert as well as to reproduce—Hardy gives literary form to the idea of nature that arises from Darwin's work. He brings Darwin's concept of the living fossil to bear on the novel form, specifically on the impulses that bound Jane to Rochester in *Jane Eyre* and Tess to Angel in their time at the idyllic Talbothay's Dairy. Once Darwin had defined the human body as a living remainder of a vanished world, narrative fiction found it difficult to imagine the body as a bundle of nerves unconnected to past and future. Darwin's body is at once a living, evolving thing and a fundamentally ancient artifact, mired in the family line from which it came, liable to revert—or, in the language of Hardy's novel, to "go back" (60)—to

⁵ George Levine, for example, asks his readers to read Hardy's as "more in love with life – and in Darwinian ways – than most typical Darwinian readings suggest" ("Enchanting Hardy" 37). He finds Hardy at his most Darwinian in his "astonishing attention to the widest possible range of life... This sweeping range, from macroscopic to microscopic vision, is centrally Darwinian" (42).

earlier developmental stages, and equally as liable to pass those residual traits forward in time through reproduction. Hardy's novel tests the ways of feeling and the forms of fiction that become possible when we understand that body as the new basis for human feeling.

From Paley to Darwin

Most accounts of Darwin's intellectual debt to William Paley focus on the many ways that Darwin rejected Paley's major claims, rather than what they share—particularly a fascination for the instances of perfect adaptation that conjoin one creature to another and unite the earth's species as a coherent whole. On the day that John Murray, Darwin's publisher, sold the first edition of the *Origin of Species*, Darwin wrote to John Lubbock, "I do not think I ever admired a book more than Paley's *Natural Theology*: I could almost have recited it by heart" (qtd. in Beer, "Introduction" xxxi-ii). Darwin never evokes the mechanical language that Paley uses to theorize the connections that bind one part of nature to another—his "model is the tree, not the machine"—but he does figure nature as a system that works mechanistically (Levine, *Darwin* 50). His work, like Paley's, may be understood as an attempt to explain how the earth's species "acquire[d] that perfection of structure and co-adaptation which most justly excites our admiration" (*Origin* 6) and to grasp the "nature of the relationship, by which all living and extinct beings are united by complex, radiating, and circuitous lines of affinities into one grand system" (*Origin* 335-6). Darwin's language most closely resembles Paley's when, in the *Origin*, he celebrates the physical complexity of life, overcome by the intricate physical structure of every living being. As he writes, "the most humble organism is something much higher than the inorganic dust under our feet; and no one

with an unbiased mind can study any living creature, however humble, without being struck with enthusiasm at its marvelous structure and properties” (*Descent* 193).

Darwin’s enthusiasm for the “marvelous structure and properties” of nature recalls Paley’s, as Darwin finds himself “tempted” to accumulate examples that will convince his readers of the “web of complex relations” that links the earth’s species in one system (*Origin* 58). To give one of many examples, Darwin succumbs to this same temptation as he describes the complex web that binds the heartsease, red clover, humble-bees, mice, and cats to one another in an interdependent system where the slightest change to the feline population, by affecting first the mouse and then the bee population, directly affects the flowers in the same geographical area.

The most significant difference between Darwin and Paley rests on the answers they provide to the central question that motivates both projects. As Darwin considers the same “co-adaptations” that Paley finds so fascinating, he asks: “[h]ow have all those exquisite adaptations of one part of the organization to another part, and to the conditions of life, and of one distinct organic being to another being, been perfected?” (*Origin* 49). Paley imagines that the woodpecker and mistletoe were designed with one another in mind, “produced perfect as we now see them” (*Origin* 7), impervious to change and time. His is a natural world created whole, which stumbles over the question of why geese that live on dry land have webbed feet, or beetles that do not fly have wings beneath their shells. Likewise, Paley cannot explain how aberrations and imperfections occasionally arise in those bodies—why, to use one of Darwin’s best examples, zebra-like stripes occasionally appear in particular horses, or why old hens now and again develop male

features. When such imperfections and abnormalities arise, Paley adopts an omniscient point of view that sees the single anomaly relative to the whole of nature.

Darwin insists that the instances of perfect co-adaptation that so fascinate him developed over millions of generations. To argue this central point, Darwin uses natural theology against itself, seizing upon the very anomalies that Paley cannot explain, including “the shriveled wings under the soldered wing-covers of some beetles.” These aberrations and redundancies provide Darwin with the evidence he needs to defend the argument that all bodies, including human bodies, have changed over the eons of time that Paley, wedded to a creationist account of nature, would not consider. It is through these features that “nature may be said to have taken pains to reveal . . . her scheme of modification, which it seems that we willfully will not understand” (*Origin* 353). The vestigial wings, hidden beneath the beetle’s shell, provide Darwin with a partial record of that creature’s development as it gradually acquired new traits and others become obsolete. Although its wings are no longer useful to the individual beetle, and may not have won what Darwin calls the “battle for life,” they are valuable nonetheless as the living remnant of what has vanished. These shriveled features prove that the beetle was not created perfect and whole, but passed through earlier developmental stages. The appearance of stripes in the horse and male characteristics in some hens are equally relevant to Darwin’s argument. This particular kind of anomaly reveals what he calls “the principle of reversion, by which a long-lost structure is called back into existence” (*Descent* 57). Even as bodies change, they carry within them the potential to revert to earlier forms and structures. The rare appearance of the zebra’s stripes in the horse’s

body, like the beetle's shriveled wings, suggests that the horse, like the beetle, passed through earlier developmental stages that can reassert themselves at any time.⁶

Darwin anticipates that many readers, committed to the idea of human exceptionalism, will resist the notion that human bodies likewise passed through earlier stages; he directly confronts this resistance in *Descent* by enumerating the many ways that human bodies bear the same "residuum of change" that the other animal species exhibit. He calls attention to the shape of the human canine teeth—much sharper than a human diet requires—as a residual structure that attests to humanity's carnivorous past; he likewise attributes "so perfect a structure as the abnormal double uterus in woman" (57) to the same process of reversion that produces stripes in particular horses. Human bodies are subject to the same struggle for existence that has transformed other life forms; humanity thus "retains many rudimentary and useless structures, which no doubt were once serviceable. Characters occasionally make their re-appearance in him, which we have reason to believe were possessed by his early progenitors" (*Descent* 172). Residual structures offer irrefutable evidence that human beings were not the product of a separate creation; the human body's residual features suggest instead the descent that humans and animals share in common. In this sense, each human body serves as what Cannon Schmitt calls a "prosthetic memory," offering a visible record of earlier developmental stages that the human subject cannot remember (71).⁷ Even if humanity cannot

⁶ There is an important difference, for Darwin, between transmission and development: a transmitted trait may remain dormant for "two, three, or many more generations" and develop without notice, like the stripes in particular horses, "under certain unknown favourable conditions" (*Origin* 264).

⁷ Schmitt uses the term "prosthetic memory" to describe the function Darwin's entire corpus performs in presenting "the history of life as an unfathomably long series of imperceptibly minute changes in millions of generations of millions of species of biological beings" (71). I appropriate Schmitt's term, in contrast, as a way to conceptualize the body that Darwin describes.

remember its co-descent with the rest of animal life, human beings stand apart as the only animals capable of seeing and comprehending that descent inscribed in the body's residual features. This uniquely human ability to recognize the vestigial traces of earlier developmental stages and to comprehend human descent constitutes the new basis for human exceptionalism.

Living Fossils and Family Trees

By devoting such attention to the redundant and aberrant features that can be found in virtually any living body, Darwin transforms the human body from a work of mechanical perfection, created perfect and whole, into a mutable, layered object that records its own development over profound expanses of time. This narrative of development is very different from traditional novelistic narratives that emphasize growth and change, but it is a narrative nonetheless. A body, for Darwin, is a conglomeration of useless, fossilized forms that stubbornly persist alongside highly adaptive, serviceable structures. In this way, the body that arises from Darwin's work is something of a contradiction, split between the fossilized structures that persist, unchanged, from earlier developmental stages, and the living structures that remain susceptible to time and change. Darwin uses the term "living fossil" to describe species that exhibit this contradiction in a particularly spectacular way—the *Ganoid* fishes, *Ornithorhynchus*, and *Lepidosiren*. These species are "some of the most anomalous forms now known in the world;" they fascinate Darwin because they have remained relatively unchanged "to the present day, from having inhabited a confined area, and from having thus been exposed to less severe competition" (*Origin* 82). Such anachronistic beings constitute the evolutionary exception and exist in tension with the rest of the species, since their bodies,

as evolutionary dead-ends, have remained the same over time, as other bodies gradually yield to time and competition. Although Darwin reserves the term “living fossil” for these particular species, we might use Darwin’s idea of the “living fossil” to grasp the way he redefined even human bodies in the mid-nineteenth-century. All bodies bear within them the traces of formerly serviceable features that refuse to change or disappear altogether, even as the rest of the body evolves.

Although Darwin restricts the “living fossils” to a just a few “thin, straggling branch[es]” low on his famous tree of life,⁸ the concept of the living fossil allows him to do what naturalists before him could not do. By deemphasizing the living, specialized features of each body, and by prioritizing instead the imperfect, fossilized structures that persist as the body evolves, Darwin reorganizes the earth’s species, past and present, high and low, into a single family whose generations extend backwards and forwards indefinitely in time. By introducing these pockets of time into the classification of nature, Darwin reconfigures the form of natural history from a taxonomy into a narrative. Taxonomical systems like Richard Owen’s group visually similar creatures together in a synchronic system based upon two or three common but specialized features.⁹ “Founded on any single character or organ – even an organ so wonderfully complex and important as the brain,” such a classificatory system, is bound to “prove unsatisfactory” (*Descent*

⁸ Because we are accustomed to imagining Darwin’s work as invested in growth, development, and extinction, rather than recalcitrance and permanence, we are most familiar with the “green and budding” twigs on the tree that “represent existing species.” The far more useful species to Darwin’s project—the living fossils—are found in the lower branches: “As we here and there see a thin straggling branch springing from a fork low down in a tree, and which by some chance has been favoured and is still alive on its summit, so we occasionally see an animal like the *Ornithorhynchus* or *Lepidosiren* which in some small degree connects by its affinities two large branches of life, and which has apparently been saved from fatal competition by having inhabited a protected station.” (*Origin* 99-100).

⁹ See Harriet Ritvo’s *The Platypus and the Mermaid and Other Figments of the Classifying Imagination* for a comprehensive discussion of scientific classification during the eighteenth and nineteenth centuries.

174). While the body's most adaptive, serviceable features may be of greatest value to the individual creature, these features do not illuminate the common lines of descent that identify even apparently dissimilar beings as kin: "resemblances in several unimportant structures, in useless and rudimentary organs, or not now functionally active, or in an embryological condition, are by far the most serviceable for classification." According to this governing principle, Darwin prioritizes the fossilized features that persist in each living body as the ancient features that "reveal the old lines of descent or of true affinity" (*Descent* 175).

Given this emphasis, the family that Darwin produces out of nature is a strange one, organized neither around a shared household nor fellow feeling, but the most redundant structures of the body that relate the living creatures of the earth as kin. The human muscular structure, or direction that the hair grows on the arms, for example, are much more useful for Darwin than the human brain, since these features suggest humanity's common descent with apes that share the same features, just as the anomalous appearance of zebra-like stripes in some horses links both the horse and the zebra in common descent. This genealogical arrangement is in Darwin's opinion a "truly wonderful fact—the wonder of which we are apt to overlook from familiarity—that all animals and all plants throughout all time and space should be related to each other in group subordinate to group" (*Origin* 99). By replacing taxonomy with genealogy and subjecting formerly synchronous models to time, Darwin reconstructs the very form of natural history.

He replaces the strictly descriptive model of his predecessors with a narrative model, based upon physical anomalies that must first regress before it can develop. By

deemphasizing humanity's powers of reason, feeling, and sympathy, in favor of living fossils that persist within the human body, Darwin's imagination works backwards "partially to restore the structure of our early progenitors." He reproduces humanity's original progenitor with surprising specificity: pointed ears, a prehensile foot, large canine teeth, a double uterus, third eyelid, and a heart that "existed as a simple pulsating vessel" (*Descent* 188). These features allow him to imagine this creature's habits: at one period, as the "great toe in the foetus" suggests, our ancestors "were arboreal in their habits, and frequented some warm, forest-clad land;" at another remote period, as the structure of our lungs suggests, "the progenitors of man must have been aquatic in their habits" (*Descent* 188). Darwin's imagination drifts still further back in time to offer an "obscure glance" (*Descent* 192) at the hermaphroditic progenitors of the Vertebrate kingdom, who were "a group of marine animals, resembling the larvae of existing Ascidians" (*Descent* 193). As Darwin thus traces these features further backward in time, we might understand his relation to the natural world as surprisingly regressive rather than progressive. His narrative depends upon the traits and species that many had regarded, at best, as biological dead-ends, yet these dead features allow him narrate the story of life and proliferation that he is most famous for producing. That original progenitor, the story famously goes, eventually developed into fish, amphibians, and reptiles; marsupials branched from this group, and eventually the "Lemuridae" and "Simiadae." From the Old World monkeys, Darwin writes, with some irony, "Man, the wonder and glory of the Universe, proceeded" (193).

Fellow Feeling and Fossil Feeling

By insisting on the “lowly origins” that all living beings, including humans, share, Darwin runs directly into the question that he addresses in much of the *Descent*: if human beings share a common descent with the rest of the animal species, how, then, did human beings come to possess the reason, emotion, creativity, and spirituality that seem to close them off from the rest of the animals? In the *Descent*, Darwin approaches this question “exclusively from the side of natural history” (120), and produces an account of human feeling that is consistent with his account of the body and its descent. Just as the human body is split between both fossilized and living structures, so human emotions may be divided into living, serviceable emotions—particularly sympathy—and ancient, vestigial emotions that arise from the fossilized structures that humanity shares in common with the animals. Here, too, we see the tension, never fully resolved in his work, between that which lives, evolves, and develops, and that which persists, without change.

The moral senses including sympathy, are living emotions that continually evolved and expanded to serve the interests of the human species. Human sympathy, in particular, evolved over time to become “more tender and widely diffused, extending to men of all races, to the imbecile, maimed, and other useless members of society, and finally to the lower animals” (*Descent* 149). Darwin employs a narrative of development to describe how humans have become sympathetic creatures. Sympathy evolved as one of several serviceable social instincts—one that humans share with social animals—that propel members of a group to congregate and seek each other’s approbation. When it assures that all members of a community will survive and thrive, such an instinct persists from generation to generation. As a species acquires the capacity to remember, these social instincts naturally develop into a moral sense, or the ability to reflect upon,

evaluate, and govern one's own actions. According to the way of thinking that Darwin shares with Herbert Spencer, the human moral sense, once acquired, can be incorporated into the biological heritage that one living being passes to its descendants.¹⁰ In arguing for the biological basis of humanity's finer qualities, especially the sympathetic identification between one man and another, Darwin takes explicit aim at Adam Smith, whose account of sympathy cannot explain why "sympathy is excited, in an immeasurably stronger degree, by a beloved, than by an indifferent person" (130). Darwin resolves this question by arguing that human morality is the product of biological variation and enables survival. In this way, Darwin's notion of human development challenges the narrative in which morality curbs and channels the natural drives and instincts. By emphasizing memory, reflection, and self-control, however, Darwin's account of human morality defers to Enlightenment models to distinguish evolved from regressive emotions, allowing Darwin to draw differences between "civilized" and "savage" groups. Those who do not develop a moral sense, and remain governed by the social instincts, continue in a "savage" state, closer in evolutionary terms to the ape than to the Englishman. As Darwin famously remarks in the conclusion of the *Descent*, he would prefer "to be descended from that heroic little monkey," who exhibits bravery and loyalty, than from the "savage who delights to torture his enemies, offers up bloody sacrifices, practises infanticide without remorse, treats his wives like slaves, knows no decency, and is haunted by the grossest superstitions" (689).

¹⁰ As George Stocking explains in *Victorian Anthropology*, Spencer takes for granted an evolving nervous system. The repression of impulse could permanently transform this system, and those changes could be passed down biologically from one generation to the next. As he explains, "The greater foresight and ability to delay gratification that civilized men showed relative to savages was not merely a cultural achievement, but was wired into their more highly evolved nervous systems" (222).

These supposedly residual emotions and their expression deserve a more expanded discussion, which my next chapter will provide. Here, I am principally interested in the tension between sympathy as an adaptive and progressive form of feeling, and the impulses that, as early as in the *Voyage of the Beagle*, Darwin defined in terms of the principle of reversion. As Darwin reviews his journey on the Beagle, he writes, “It has been said, that the love of the chase is an inherent delight in man – a relic of an instinctive passion. If so, I am sure the pleasure of living in the open air, with the sky for a roof, and the ground for a table, is part of the same feeling: it is the savage returning to his wild and native habits” (375-6). In the *Descent*, he describes the experience of listening to particular pieces of music in similar terms: “The sensations and ideas thus excited in us by music, or expressed by the cadences of oratory, appear from their vagueness, yet depth, like mental reversions to the emotions and thoughts of a long-past age” (638).¹¹ Here, Darwin applies the language of recalcitrance and reversion to human emotion. Like the body, the mind contains the “relic[s]” of earlier developmental stages—in this case, an “instinctive passion” that links the civilized Englishman to his ancient forbearers—and is liable to “revert” to the thoughts of a “long-past age.” Darwin attacks the Enlightenment concept of emotion as interior, personal, and private by arguing that the basic emotions that civilized individuals experience have persisted through generations of time. Darwin’s account opens the human subject to profound

¹¹ He continues along these lines, suggesting that “All these facts with respect to music and impassioned speech become intelligible to a certain extent, if we may assume that musical tones and rhythm were used by our half-human ancestors, during the season of courtship, when animals of all kinds are excited not only by love, but by the strong passions of jealousy, rivalry, and triumph. From the deeply-laid principle of inherited associations, musical tones in this case would be likely to call up vaguely and indefinitely the strong emotions of a long-past age” (*Descent* 638).

biological time, described here as the “emotions and thoughts of a long-past age.”

Sensation binds an individual to his line of descent.

To feel human is therefore to participate in two opposed forms of feeling at once: an ever-evolving form of sympathy that originally developed from the body’s instincts, and the residual sensations that connect human beings to earlier forms of life. Like the living and the fossilized structures of the body, this emotional dualism represents human feeling as at once adaptive and regressive. Just as he never attempts to reconcile the body’s evolving and fossilized structures, Darwin refuses to reconcile these two modes of feeling. He likewise refuses to see humanity in strictly adaptive, progressive terms. As he concludes the *Descent*, Darwin acknowledges humanity’s living, evolving modes of feeling, citing as our “noble qualities” a “sympathy which feels for the most debased . . . benevolence which extends not only to other men but to the humblest living creature . . . [and] his god-like intellect which has penetrated into the movements and constitution of the solar system.” These “noble qualities,” however, are neither unique to nor common among all human beings. Despite the differences in their physical features, evolved humanity, Darwin suggests, is emotionally closer to the “heroic little monkey,” who is loyal to his keeper, than the “savage,” who shares the same physical features. Darwin famously concludes that “Man still bears in his bodily frame the indelible stamp of his lowly origin” (689). This indelible stamp, for Darwin is most visible in the human body’s fixed, fossilized structures, and in the residual, “savage” forms of sensation that arise when we listen to music, for example, or that he himself experienced when he explored the wilderness of Patagonia. In *Tess*, Hardy explores the consequences of Darwin’s claims for the novel form, as a narrative of individual development. What

becomes of the novel form when the fossilized features of the body and mind tether each individual to an animal past? When our uniquely human feelings and moral senses arise from the fossilized structures we share in common with the both the “savage” and Darwin’s “heroic little monkey?”

Living Fossils and Literary Form

In *Tess of the D’Urbervilles*, Hardy’s narrator assumes the same point of view that Darwin brings to bear on the natural world. This becomes evident as the narrator explains the tradition of “club-walking:”

The forests have departed, but some old customs of their shades remain. Many however, linger only in a metamorphosed or disguised form. The May-Day dance, for instance, was to be discerned on the afternoon under notice, in the guise of the club revel, or ‘club-walking,’ as it was there called. . . . Its singularity lay less in the retention of a custom of walking in procession and dancing on each anniversary than in the members being solely women. (13)

As he surveys the remnants of what was the May-Day dance, persisting into the present in “metamorphosed or disguised form,” Hardy’s narrator distinguishes the residual details he deems of “real interest,” from the participants’ experience of the tradition. What is simply an “interesting event” to someone like Tess, meaningful in its repetition, has a long and varied history from the distant past to its present “guise” or form.

Hardy begins *Tess* with this split between the narrator and the “participators” in the club-walking in order to demonstrate how human affiliations change as the gap narrows between expert and commonplace understanding of man and environment. How does individual and community change as we begin to understand everything, from the club walk to the human body, as living fossils? As the only animals capable of understanding themselves as living fossils and of comprehending their shared kinship

with all living beings, humans pose a unique problem for both Darwin and Hardy.

Hardy's novel addresses this problem. When the human understanding catches up with Darwin's, it becomes impossible to imagine oneself as the impulsive being both Charles Bell and Charlotte Brontë imagined. Tess herself raises the central question for the novel. Upon learning of the "one flesh" she shares with the D'Urbervilles "skellingtons," in the vault at Kingsbere, she wonders if this new understanding of the human body and its descent will "do us any good?"

To explore this question, Hardy constructs a landscape of which virtually every body and object—including houses, birds, people, and the landscape itself—bears the fossilized traces of its own development over time, and subsequently carries the potential to revert to earlier developmental stages. Both Rolliver's Inn and the D'Urbervilles' chicken coop were once houses; the vestigial traces of those households persist into the present in the beds and the dressers repurposed as seating for the inn's patrons, and in the former chimney, where now "the hens laid their eggs" (58). The butter produced by Talbothay's dairy likewise bears the traces of its development in that it tastes like the garlic that the cows ingested before their milk was churned into butter. Tess must whistle to the bullfinches she tends at the D'Urbervilles estate, lest they forget how to sing, and "go back" to an earlier developmental stage (60). Human beings, too, bear the vestigial traces of their past, and so remain liable to reversion. The difference between this new kind of human being and the bullfinch, however, is the human being's ability to recognize the traces of its history as they persist into the present.

Such a shift in the way one reads the body produces Tess: neither a coherent, self-governing subject, nor an impulsive being, governed entirely by the sensations that arise

from her body's competing systems. Self-regulating subjects we find in most *Bildungsromane*—Pip, to give just one example—cast aside their family histories in order to become fully autonomous subjects; the impulsive beings that we find in Brontë's fiction are governed by impulses that originate in the moment they are felt, with no regard for time or place. In contrast to both models, Hardy's Tess is a genealogical being—a living fossil—whose very existence is bound up in the histories that are written on her face. "Phases of her childhood," the narrator explains, "lurked in her aspect still. As she walked along to-day, for all her bouncing handsome womanliness, you could sometimes see her twelfth year in her cheeks, or her ninth sparkling from her eyes, and even her fifth would flit over the curves of her mouth now and then" (16). Alongside the record of her personal development, Tess's body bears the traces of her ancient ancestry, preserved in the portraits of her ancestors built into the masonry at the D'Urbervilles' ancestral mansions. Tess recognizes her own features, "unquestionably traceable in these exaggerated forms" (217). As a living fossil, Tess is caught between the opposed narratives of development and the degeneration organizing Darwin's major works. In the manner of traditional nineteenth-century novels, Tess's story begins as one of potential growth and development, which tracks the progression of a girl into adulthood. The vestigial traces of her descent, however, pull Tess out of this trajectory of development before it can even begin and bind her instead to her ancient family line. For all of her standard education, "under a London-trained mistress" (21), her dialect persists within the structures of her body, "on her tongue" (15); without continued conversations with Angel, she is liable to revert—to "slip back again out of accord with him" (204)—just as the birds she tends at the D'Urbervilles estate are subject to "go back" if she does not

whistle to them daily. Even Tess's body exists in a degenerative state: when Angel Clare kisses her arms, he compares their smell and taste to that of "a new-gathered mushroom" (176), suggesting that even as she lives, her body recalls decaying organic matter and a very simple life form.

The idea that human beings are living fossils—"one flesh" with the "skellingtons" of the dead—tends to overvalue the dead over the living and overattaches the individual to the family line as "one flesh." In establishing the Derbyfield family, Hardy pieces together a lineage that looks very much like Darwin's famous "tree of life" to show that when human beings begin thinking of themselves as living remnants, they cohere with one another primarily through the common history their bodies share. Individuals are no longer autonomous agents, governed by reflection and personal agency. Nor are they impulsive beings, propelled by the nerves. By contrast, Tess obeys the social instincts that bind her to her family line and compel her to protect the interests of that group even at cost to her self. Kinship becomes something that is "claimed," as when the family sends Tess to "claim kin" with the D'Urbervilles (27). She is consequently not a subject but a line of descent. Although it is she who is sent to "claim kin" with the D'Urbervilles, the household retains its claim to her body and soul, as the narrator explains: "As soon as she could discern the outline of the house – newly thatched with her money – it had all its old effect upon Tess's imagination. Part of her body and life it ever seemed to be; the slope of its dormers, the finish of its gables, the broken courses of brick which topped the chimney, all had something in common with her personal character" (345). Given the competing claims of her mind, her body, her family line, and the household itself, it is hardly surprising that Tess retreats to Talbothay's Dairy.

“If she could have been but just created”

A deeply counterfactual strand of thinking drives much of Hardy's novel, unusual in that it does not indicate a character's attempt to imagine an alternative history, or how things might have turned out more favorably “if only.”¹² Hardy's unique counterfactual mode takes on a much more existential cast as Tess attempts to imagine herself as independent of history altogether, as for example, when Tess returns to the fields after the birth of her child: “Alone in a desert island would she have been wretched at what had happened to her? . . . If she could have been but just created, to discover herself as a spouseless mother, with no experience of life except as the parent of a nameless child, would the position have caused her to despair?” (91). This counterfactual mode of thinking constitutes Tess's desire to unlearn her family history and imagine herself instead as a simply living being ruled by impulse rather than by the residual feelings that tether her to her family line. Although the novel appears to succumb to this fantasy when it situates Tess and Angel at Talbothay's dairy farm, it is actually challenging earlier forms of fiction. By situating Tess at Talbothays, Hardy show the incongruity between the body as Darwin imagined it and the novels, like *Jane Eyre*, that deploy impulse to provide the kind of retreat from time that Tess fantasizes about.

Since the novel's initial publication, the portion of the novel set at Talbothay's dairy has remained almost as tantalizing for readers as for the characters themselves. One early reader of the novel, Clementina Black, reported that “The wholesome life of the dairy farm, and the wonderful pictures of changing aspects and seasons, the descriptions of three or four solitary walks, remain with us like bits of personal

¹² See Andrew Miller's *The Burdens of Perfection*, for a discussion of counterfactual thinking and Victorian fiction.

experience” (56). It is not surprising that this has been the case; in constructing the sections of the novel set at the dairy, Hardy situates his characters in a milieu far away from the “residuum of descent” that overtly reminds Tess that her body “bears the stamp” of its origins. In such a context, an individual like Tess can imagine herself as a creature “just created,” practically indistinguishable from any other human being or the animals she tends. Repetition, rather than progression, governs life at the dairy, producing the impression that life always has been and forever will remain exactly the same; both Tess and Angel take great pleasure in the fantasy that Tess, as Angel muses, “will always be here to milk [the cows]” (122). This temporal suspension allows human beings to live as animals, oblivious to the boundaries that separate one being from another, absorbed by the work of simply living. The boundaries between living beings accordingly fall away, not only between Angel and Tess, but between the maids and their favorite cows—“Dumpling and Old Pretty, who loved Tess’s hands above those of any other maid” (150)—and between the maids themselves, whose hearts are prone to “throb simultaneously” at the collective sight of Angel (143). As Hardy explains, “The differences which distinguished them as individuals were abstracted by this passion, and each was but portion of one organism called sex” (147). By thus blurring the animal and the human worlds into one sensuous whole, Hardy offers Tess what she hoped for. In such a milieu, Tess is “conscious of neither time nor space” (122-3); she can imagine that she has “dismissed the past . . . trod upon it and put it out, as one treads on a coal that is smouldering and dangerous” (192).

Human emotion, in this context, looks much like it did at the conclusion of *Jane Eyre*, as Tess forgets that the sensations that draw her to Angel are as ancient as those

that Darwin experiences when listening to music, or looking at the plains of Patagonia. As Tess's body yields to the impulses that bind her to Angel Clare, it seems that even her body, in the dairy, is subject to and continuous with the landscape itself. That landscape—the “oozing fatness and warm ferments of the Var Vale, at a season when the rush of juices could almost be heard below the hiss of fertilization”—recognizes only the cycles of the seasons and produces an intimacy between Tess and Angel that they do not wholly control. As the narrator explains, “it was impossible that the most fanciful love should not grow passionate. The ready bosoms existing there were impregnated by their surroundings” (149). Inseparable from the landscape, such feeling itself exists only in the moment that it is felt. Angel believes that he loves Tess “for herself . . . her soul, her heart, her substance” (165) and likewise believes that in choosing Tess he “choose[s] a mate from unconstrained Nature” (174). Like so many of Darwin's predecessors, he imagines nature independent of time and history.

Despite the deep sense of “enchantment” in this section, the novel ultimately refuses to sustain the fascination that initially binds Tess and Angel. The modes of feeling they experience at the dairy require a suspension of time incompatible with a narrative that cannot ignore the residual traces of the past in the present. Rather than stand in for the whole, this idyllic section—and the impulsive modes of being that exist there—ultimately proves incompatible with the biological body as both Hardy and Darwin understand it. Although Hardy temporarily situates Tess within a context where she can imagine herself reborn as a timeless being, her body still contains the persistent elements of a past that will inevitably reassert itself, conjoining her body to a line of descent. That biological line, and not the individual specimen, is the operative category

in Darwin's system. Although Tess attempts repeatedly to divorce herself from the biological past, her body can shed neither the record of its own development, nor the feeling to which this inheritance gives rise. As he describes the layers of Tess's body, Hardy's narrator sounds much like Darwin describing the beetle's shriveled wings: "Inside this exterior," he reports, "over which the eye might have roved as over a thing scarcely percipient, almost inorganic, there was the record of a pulsing life" (280-1). Outside of the dairy farm, Angel and Tess can no longer imagine themselves as the "first persons up of all the world" (130). Their oneness in that milieu breaks apart, as the novel resituates them at the D'Urbervilles' ancient estate, amidst Tess's family portraits. By bringing time to bear on the impulses produced at the dairy farm, Hardy suggests that those impulses are incompatible with the genealogical form of human being that Darwin imagined. Humans after Darwin can no longer imagine themselves as the "new sprung child[ren] of nature;" they are the "exhausted seedlings" of their family lines. The novel, in this way, kills off the fantasy of a world limited to two impulsive beings.

Between "Spiritual Forgetfulness" and "Intellectual Remembrance"

Feeling, under these circumstances, looks something like the oscillation between the opposed modes of feeling captured in one moment just before Tess and Angel marry:

Her affection for him was now the breath and life of Tess's being; it enveloped her as a photosphere, irradiated her into forgetfulness of her past sorrows, keeping back the gloomy spectres that would persist in their attempts to touch her – doubt, fear, moodiness, care, shame. She knew that they were waiting like wolves just outside the circumscribing light, but she had long spells of power to keep them in hungry subjection there.

A spiritual forgetfulness co-existed with an intellectual remembrance. She walked in brightness, but she knew that in the background those shapes of darkness were always spread. They might be receding, or they might be approaching, one or the other, a little every day. (195)

In fleeing from her family home to Talbothay's dairy, Tess wished for absolute forgetfulness, but the most that Hardy's novel can ultimately offer is a "spiritual forgetfulness co-exist[ing] with an intellectual remembrance." Attempting to bridge the opposition between impulse and fossil memory, Hardy permits Tess to experience the intimacy that arises when combined as one body with Angel, but he will not allow her to forget her vulnerability to the history of her body, even when it exists in "subjection." For that reason, the impulses that Tess imagines as nothing less than "breath and life" exist in eternal tension not only with the "past sorrows" that persist from the ancient past to the present day. Rather than obliterate the past, instinct opens the human being to its biological past. The novel never resolves the conflict between these two opposed modes of feeling but oscillates toward a conclusion. The novel makes sure that no living being is free of time and memory as it refuses Tess's repeated attempts to unlearn or obliterate the history of her body: "Bygones would never really be complete bygones till she was a bygone herself" (307).

Until its conclusion, the novel continues to seek refuge in timeless places of perfect stasis, only to move back into the Darwinian oscillation between past and future, degeneration and development. Hardy re-presents the retreat that Brontë offers at Ferndean. The house in which Angel and Tess seek refuge cloisters the couple from the outside; its "shuttered windows, like sightless eyeballs, excluded the possibility of watchers" (388): "By tacit consent they hardly once spoke of any incident of the past subsequent to their wedding-day. The gloomy intervening time seemed to sink into chaos, over which the present and prior times closed as if it never had been" (389-90). But one cannot escape from time, history, and descent, either in life or in fiction. Angel

himself has become little more than a living fossil that reveals its layers and ancestry: “You could see the skeleton behind the man, and almost the ghost behind the skeleton . . . The angular hollows and lines of his aged ancestors had succeeded to their reign in his face twenty years before their time” (368). Tess succumbs to her family inheritance in the impulsive act of murder that both she and Angel attribute to her biological inheritance. Even as the concluding sentence of the novel gestures toward life by having Angel join hands with Tess’s sister, that futurity takes the past with it. As Tess said of her sister, she “has all the best of me without the bad of me; and if she were to become yours it would almost seem as if death had not divided us” (394). In pairing Angel with Liza-Lu, Hardy leaves the reader with the sense that even after Tess becomes a “bygone herself,” the ancient features and feelings that defined her body persist residually in her sister’s body and indefinitely into the future.

CHAPTER FOUR

That Knowing Feeling: Darwin's *Expression* and *Dracula*'s "New Fascination"

Early in Bram Stoker's novel, *Dracula* (1897), Jonathan Harker wanders into an abandoned portion of Dracula's castle and settles into the moth-eaten furniture to write in his journal. In that journal, he famously boasts that his ability to use shorthand instantly to record his observations is "nineteenth century up-to-date with a vengeance" (43). Many readers take Jonathan at his word. They accordingly understand the novel as an aggressive contest between the enlightened, "up-to-date" modernity that Stoker grounds in Jonathan and a range of threats to that modern life—including sexual desire,¹ moral and biological degeneration,² and imperial decline³—embodied in to the vampire. A number of readings that proceed along these lines argue that the novel contains such

¹ The best known of such readings is Christopher Craft's, "'Kiss Me with Those Red Lips': Gender and Inversion in Bram Stoker's *Dracula*." Craft famously reads Stoker's use of the "vampire metaphor in *Dracula*" as "an equivocation about the relationship between desire and gender." The novel, Craft suggests, "repeats, with a monstrous difference, a pivotal anxiety of late Victorian culture" (444)—specifically an anxiety toward male homosexual desire, which the novel, according to Craft, displaces onto a heterosexual framework.

² A number of readings take for granted Van Helsing's claim that "The count is a criminal and of criminal type. Nordau and Lombroso would so classify him, and *qua* criminal he is of imperfectly formed mind" (363). In his field-changing work, Ernest Fontana, for example, reads Dracula as the embodiment of Cesare Lombroso's criminal man; "The coalition against the vampire," he writes, therefore "represents an assertive policing of the borders of modernity... The past is, literally, always with us, threatening to erupt through the veneers of collective civilization and personal self-control." "Dracula," according to Fontana, "is a threat to societies of predominantly morally and socially evolved humanity, because there survives within these societies, even in England, a minority of potentially 'diseased' individuals who are driven, subconsciously, to a reversion back to the atavistic, pre-civilized world from which Dracula survives" (68).

³ Both Patrick Brantlinger and Canon Schmitt read the novel in the context of the British Empire and suggest that the vampire manifests the threat of imperial decline, particularly with respect to Ireland. Brantlinger includes *Dracula* as an example of the "imperial Gothic," and Schmitt associates the figure of the vampire with the fear of Irish invasion and English imperial collapse.

threats by summoning the most “up-to-date” technologies that the late nineteenth-century has to offer. The novel consequently produces modern subjects conjoined to one another in a network—and fortified against the vampire—through the detailed accounts they circulate among the group and the modern technology they use to produce those accounts. Regina Gagnier provides such a triumphalist account of the novel when she suggests that “the operation of stopping the vampire enlists the aid of scientists, scholars and clerks, and exploits an international information industry, drawing upon institutional collaboration across public and private lines in business, family, law, government and modern technology” (147).

I am struck by how consistently these readings overlook the basic fact that the descriptions Jonathan records in his journal—and the “international information industry” that Stoker sets up around him—fail in nearly every instance to produce the knowledge that the novel’s enlightened subjects need in order to survive. In accordance with Van Helsing’s instructions, Jonathan dutifully uses shorthand to record the minutiae of daily life in his journal with scientific precision, including a description of how softly his wife, Mina, has started breathing at night: “so softly [he] had to put [his] ear down to hear it” (270). As a vigilant observer with the “open mind” that Van Helsing demands, Jonathan notices that something has changed, but all of his observations, painstakingly recorded and circulated among his friends, cannot explain what the lunatic, Renfield, grasps instantly: Dracula “has been taking the life out of her” (299). If the novel, as criticism believes, is so invested in defending the modern scientific technologies of observation and description that Jonathan suggests are “up-to-date,” why do these methods of

collecting and circulating knowledge fail so spectacularly? Why, for Stoker, does it take a lunatic to fill in the gaps that rational observation alone cannot explain?

Through countless instances like this one, where careful observation fails to produce substantive knowledge, the novel calls into question the tenacious assumption that respectable human beings can depend upon the five senses and rational thought to account for the world around them. In Stoker's novel, observations recorded and circulated through even the most "up-to-date" technologies cannot keep pace with way that objects behave and knowledge travels in the modern world. In this age "awash in text, imagery, and insinuation," objects of knowledge refuse to remain in their places; they are as likely to grasp the senses as they are to be grasped *by* them (Chase and Levenson 7). Knowledge has expanded to include information that travels independent of autonomous, observant minds, moving instantly from one body to the next through the impulses and sensations those bodies share. In *Dracula*, I suggest, Stoker grounds these transindividual forms of knowing and feeling in the vampire, not to contain them, but to shock and jolt a complacently enlightened humanity into the darkness that shapes and directs modern life as represented in the novel. Because *Dracula* relies upon the body's sensations rather than the mind's observations to navigate and communicate with the world around him, he slips through the most modern ways of knowing that the late nineteenth-century can muster. The horror—and the great paradox—of the novel is that to retain their hegemony, Van Helsing and his band of brothers must abandon themselves to the embodied thought process that Stoker grounds in *Dracula* and the network he commands, where minds, bodies, and sensations are fluid and continuous, rather than individual and distinct. They must, by so doing, open themselves to the forms of

intimacy, knowledge, feeling, and communication that are based in the species body they share in common. For the new managerial class that the novel grounds in Jonathan and Mina Harker, as I will show, the novel finds these somatically mediated forms of feeling, communication, and knowledge more appropriate—and more “up-to-date”—than individualism.

By thus confronting enlightened humanity with the group consciousness of the vampire, *Dracula* responds to contradictory modes of humanity that clashed in the latter part of the nineteenth century, specifically the contradictory forms of human being that Charles Darwin produced in his final major work, *The Expression of the Emotions of Man and Animals*, originally published in 1872 and republished in 1890 with a new preface written by his son, Francis. In *Expression*, Darwin tackles the problem he created for humanity in his earlier work. In arguing for the ancient animal past of the human species, Darwin needed to account for the feelings and expressions that appear unique to humanity. He begins to address this problem in *The Descent of Man* (1871), arguing that even our most complex emotions are actually selected traits that we inherit from and share with animals. In *Expression*, he relies upon theories of the mind’s relation to the body proposed by the physiological psychologists. Such authors as William Carpenter, Herbert Spencer, Alexander Bain, and George Henry Lewes sought to dislodge the theory that human thought arises strictly from the self-enclosed, rational mind, and relocated thought and feeling to the body’s unreasoned systems.⁴ In conversation with this group,

⁴ Sally Shuttleworth explains that this group “argued that we learn habits of thought and feeling through the earliest associations of childhood and the repetition of habitual mental gestures that carve grooves in the mind, so that our mental processes become a set of automatic responses; but these streams, too, run underground and can spring out in unexpected places” (69). Vanessa L. Ryan reads the work of the physiological psychologists alongside a number of Victorian novels in order to show how nineteenth-century fiction, “responding to nineteenth-century developments in mental science, began to take

and in concert with his earlier thinking, Darwin's *Expression* transforms the expressions that a natural theologian like Charles Bell considered uniquely human into inherited reflex actions that humans share with other animals, thus tying humanity to the animals rather than dividing humanity from them. In the process, he humanized the rest of the animal species, so that his dog and his son come to resemble one another in their self expression.

Competing versions of selfhood emerge in *Expression* as Darwin reconfigures the modern human subject as a being governed by the body's reflexes. Specifically, a contradiction arises between the observant impartiality that Darwin himself assumes relative to his objects of study and the impulsive forms of human being that he describes in *Expression*. Darwin's account of the relationship between the mind and body depends upon his intellectual relationships with an international network of observers who circulate their independent observations through one of what Jed Mayer describes as "global networks of correspondence" (315). Darwin's collaboration with this global community effectual divides the world between observant subjects, like Darwin and his circle, who painstakingly record and share their observations, themselves unseen, and their expressive human and animal objects. The account of humanity that arises as the product of this collective gaze, however, does not include the network of observant subjects that produces it. The body that Darwin and his circle describe thinks for itself and acts most efficiently when independent of the rational mind; the mind, in turn, can be stimulated into activity and united in companionship with other minds by the impulses

nonreasoned thought seriously and to weigh its value in medical and scientific problem solving, as well as in everyday actions and decisions" (277).

that arise externally. By grounding intelligence in the body and transforming the mind into an object that can be “tickled” into thought by others, Darwin opens human beings to multiple, often conflicting networks of communication with competing claims to their attention, networks that *Dracula* finds at once both horrifying and vital to modern life. He never acknowledges the contradiction posed by the transpersonal character of these impulse networks and the circle of rational subjects among whom he belongs. As I will suggest, it takes a horror novel to figure the conflict between the forms of feeling that arise in *Expression*.

By reading *Expression* for the contradiction that arises between these two different theories of thought and feeling, and by bringing this contradiction to bear on Stoker’s novel, I hope to show that both texts displace one notion of distinctively human feeling with another that links us to biological life. A number of contemporary critics, including George Levine, Jim Endersby, and Jed Mayer, place *Expression* at the center of what Endersby calls the nineteenth-century’s emergent “culture of compassion” (402), suggesting that *Expression* produces sympathetic subjects who are acutely sensitive to the feelings of other human beings and animals.⁵ These readings share the common assumption that participation in the feelings of another person—or animal—for Darwin,

⁵ In *Darwin Loves You*, for example, George Levine argues for a “Kinder, Gentler Darwin” and suggests that Darwin’s work in *Expression* required an “enormous effort of the sympathetic imagination” (205). For Levine, Darwin is a Smithian observer: “standing outside the condition he describes...he explains with remarkable attentiveness and precision, not only the sufferer’s expressions, but the causes of them—which are not visible” (230). Jim Endersby and Jed Mayer likewise read *Expression* for the sympathetic subjects it produces. These subjects, for Endersby, are acutely sensitive to the pain of other human beings (for Endersby) and animals (for Mayer). Endersby suggests that “Sympathy was a scientific skill, partly innate and partly acquired, that Victorian naturalists regarded as necessary to fully understand the living world; considered as a skill it relates to an older sense of sympathy that referred to grasping the “affinities” between living things” (300). As Mayer explains, “Darwin shared with his philozoic readers a faith in the ability of human beings to read and understand the emotions of nonhuman animals. This might be seen as the central rhetorical foundation of both animal rights advocates and physiologists, in that each presumed to interpret the emotional signs of animals accurately” (403).

is a matter of careful reading, based in the kind of attentive observation and sympathetic reflection that is central to Adam Smith's description feeling as a mode of thought whereby we imagine ourselves in the place of the other. Because they ascribe to Darwin their own interest in *feeling* as a matter of *thinking*, they miss the important move Darwin makes in *Expression*: to understand *thinking* as a matter of *feeling*, inextricably caught up in (and vulnerable to) the impulses and sensations that arise from the animal.

This facet of my argument draws on Elizabeth Wilson's *Psychosomatic*. She calls attention to Darwin's interest in the "nervous body, rather than in the conscious mind-brain" (65). Her central claim that psychology and biology do not operate in "disjunctive realms" (68) in the *Expression* has helped me read it for the "preternatural" relationship it establishes between the mind and body. But in showing how Darwin opens the body to a range of psychological, cultural, and environmental influences, conjoined in one "reciprocally configured system," I believe that Wilson overemphasizes the direct influence of psychology over biology in his work, without considering how the influence, also runs the other way. By challenging the authority of science over social science, she reinforces the hierarchical relationship between biology and psychology that she means to call into question. In this chapter, I am interested in the strand of Darwin's thinking that insists that the thoughts and emotions we have ascribed to the mind have everything to do with the body's sensations and the world external to that body. If, as Wilson shows, "biology does not act without psychology" (76), I mean to show how for Darwin, psychology also does not act without biology.

By bringing Darwin's claims about the body and mind to bear on *Dracula*, I will challenge readings of the novel as a defense of individual subjectivity in the face of a

range of late-nineteenth century threats. Even readings that bear the closest resemblance to my own, which place the novel in conversation with the materialist psychologists on whom Darwin drew, emphasize only the unethical purposes to which the novel puts Carpenter's concept of unconscious cerebration. Such readings suggest that the novel understands the thoughts and feelings that arise from the body as retrograde forms of thinking and feeling that undermine the late nineteenth-century volitional self that the novel must contain.⁶ Such readings affirm Robert Miles's general claim that Gothic novels, like *Dracula*, are "embroiled within a larger, theoretically complex project: the history of the subject" (185). In contrast to these readings, I suggest that *Dracula* seizes upon the kind of habituated body that arises in Darwin's work to test the possibilities that this model of thinking and feeling holds for the most "up-to-date" subjects. The novel stages the same conflict between the individual subject and the species body organizing *Frankenstein*—with a significant exception: the kind of body that proved so threatening to humanity at the beginning of the nineteenth century becomes the means of navigating the world of fin-de-siècle England. To be truly "up-to-date" in the late nineteenth century, the novel argues, is to participate in the disintegration of the sympathetic community by abandoning oneself to the sea of biological impulse that unites humanity as one species. These impulses, though contrary to volition, produce instantaneous ways

⁶ David Glover, for example, reads the novel as a critique of William Carpenter's notion of unconscious cerebration. For Glover, unconscious cerebration constitutes a "deviant" form of human consciousness that opens the self to compulsive behaviors that resemble the vampire's impulses. Roger Luckhurst's *The Invention of Telepathy* stands apart from this kind of reading in its interest in reading a phenomenon like telepathy as part of a "utopian future in technology, science, and human sensitivity" (5). Luckhurst reads *Dracula* as part of a fin-de-siècle Gothic tradition that "never straightforwardly conformed to the accounts of degeneration because it was also traversed by anti-degenerative ideas associated with psychical research. By the 1890s, the supernatural did not simply conjure monsters, but figured emergent conceptions of psychical life." Mina's "trance-states," he suggests, "work for the powers of modernity and progress, doubling the effectiveness of the information systems that trap the Count...hypnosis is also regarded as a potentially curative force, and one that opens onto vast possibilities beyond the limited determinist state of positivist science" (213).

of knowing by feeling that the novel considers necessary cognitive equipment for the modern subject.

Sidelining Sympathy

In *Expression*, the human face becomes the battleground for old and new ways of conceptualizing humanity. Darwin explicitly rejects Charles Bell's natural theological account of both the origin and purpose of human expression, particularly Bell's claim that the expressions are, as Robert J. Richards explains, "a natural language," unique to human beings "which allowed immediate communication of one soul with another" (231). As I suggest in an earlier chapter, Bell's account of expression is remarkable in that it theorizes expression as a contagion, based in the nerves of the respiratory system, which passes indiscriminately from one body to the next. His account nonetheless takes for granted the basic natural theological premise that humanity is an independent creation, exceptional to the rest of biological life, bound through the "natural language" that the uniquely human expressions provide. In redefining humanity as a species that has evolved over time, Darwin shifts the basis by which we know and relate to one another. The expressions that Bell considers evidence of human exceptionalism become a set of acquired habits that have become automatic over millions of generations independent over centuries and across the species. By redefining humanity as a species and human expression as an instinct, Darwin raises a central question that *Expression* never entirely answers: how do we grasp humanity and understand our place within it? If we are not a collective of individual subjects, whose feelings are personal and private, then we are a species, whose feelings and expressions continuous with the animals. In *Expression*, I suggest, Darwin provides competing answers to this question. As a man of

his times, he accedes in part to the humanness of his time: human beings are self-regulating subjects who navigate the world by virtue of their capacity for individual observation and independent thought.⁷ Contradicting the definitions of the human as a potentially self-governing individual, however, Darwin opens humanity to the affective life of the species and suggests that we cannot possibly grasp the species of which we are a part because the species instead grasps us, uniting humanity through the impulses all share in common as evolved animal beings.

A number of readers, including Levine, claim that Darwin is at his most sympathetic in *Expression*, approaching his human and animal subjects with a compassion unparalleled in his other writing. Without denying the sensitivity and good humor that Darwin demonstrates when he describes his dog's "hot house face," for example, such readings disregard Darwin's attempts to sideline enlightened sympathy at several key points. He sees it as an individualistic emotion incompatible with the concept of humanity as a species evolving in relation to the rest of the natural world. Darwin explains that "the study of Expression is difficult," not only because the expressions are of "a fleeting nature," but also because those "slight" expressions excite a desire to sympathize with our fellow human beings as individuals worthy of compassion or concern. These circumstances render the "close observation" central to Darwin's

⁷ For Levine, Darwin's authority is derived from his observational method, and Darwin's "sometimes disingenuous style of patient and plodding detail," as he explains in *Darwin and the Novelists*, constitutes the primary way that Darwin's science enters the form of nineteenth-century realist narrative (15). "Science," he explains, "enters most Victorian fiction not so much in the shape of ideas, as, quite literally, in the shape of its shape, its form, as well as in the patterns it exploits and develops, the relationships it allows" (13). Observation "helped foster the illusion that the power of science, and hence its authority, lay in its self-denying surrender to observed fact... Observation is the power that opens up the fact and subdues it into knowledge, and the disinterested observer is the true scientist. In nineteenth-century realist narrative not only is observation the primary source of the materials of the story, but the observer and the act of observation become increasingly the focus as much as the means of attention" (15).

method “almost impossible.” As Darwin himself explains, “if, from the nature of the circumstances we expect to see any expression, we readily imagine its presence” (23-4).

Darwin relies upon photographic evidence to correct this problem.⁸ He collects photographs primarily of actors and the insane and places these pictures alongside Guillaume Duchenne’s photographs of faces electrically convulsed into expression. As Joe Cain writes in his introduction to *Expression*, “Few of the images Darwin used capture an instant of spontaneous, genuine expression” (xxxix). Stimulated into expression by largely artificial means, and frozen in time against blank backgrounds, however, he assumes them free of the personal entailments that would elicit a sympathetic response from the viewer. In this respect, Darwin’s aim in using photographs of expressive faces, divorced from context, is primarily negative—to prevent sympathetic identification. These facial expressions consequently serve as specimens of humanity that can be described and classified through careful, independent observation. Darwin never overtly acknowledges the horrors that these photographs capture—the toothless grin of poverty, or the unfocused eyes of insanity, not to mention the electrodes shocking and contorting the muscles of the face into expression. He pushes the gothic dimensions of his text into the background by emphasizing the structures these faces share with the animal species—the muscular actions, that is, that contract a given face into the familiar expressions that we associate with horror, devotion, and joy in both fellow human beings and animals. A face, for Darwin, is an invitation to describe, rather

⁸ In *Charles Darwin and Victorian Visual Culture*, Jonathan Smith analyzes Darwin’s use of images in *Expression*, particularly the ways in which the images he selects may be understood as a direct answer to Charles Bell and the fine arts tradition that motivated Bell’s work. Smith suggests that the “The imagetext that is the *Expression* attempts to offer in its integration of pictures and words an aspect of what Adrian Desmond and James Moore have argued Darwin offered with natural selection: a bourgeois version of evolutionary theory subversive of vested cultural interests but differentiable from those of the lower classes and their allies” (181).

than to feel; it is most interesting in the musculature it shares in common with all other human and animal bodies, rather than in its particularity. In this way, Darwin produces what he presumes to describe, namely, the human animal.

“Englishmen Rarely Cry”

This synecdochal way of imagining humanity is Darwin’s primary means of defending his claim that human expression is evidence of humanity’s common animal ancestry. To extend his anti-sympathetic gaze around the globe he constructs a network of observers and correspondents who similarly respond to faces as specimens, rather than as the mark of individualism. As Gillian Beer has acknowledged, “Darwin was never a singleton. He needed and used the work, information, and insights of many people to do his work and be himself” (xxix). This is nowhere so true as in the *Expression*, where Darwin enlists the aid of correspondents worldwide to observe, record, and circulate back to him their accounts of expression. In the surveys he circulates, Darwin specifically explains that “A *definite description of the countenance* under any emotion or frame of mind, with a statement of the circumstances under which it occurred, would possess much value” (340 emphasis original). On the basis of these “*definite description[s]*,” Darwin concludes that expressions are indeed uniform around the world—that the Englishman and the Aborigine, express anger, disgust, fear, or joy in precisely the same way. In this way, Darwin can claim to be leveling the distinctions between human groups in narrowing the gap between humans and animals. As he reasons, “It follows, from the information thus acquired, that the same state of mind is expressed throughout the world with remarkable uniformity; and this fact is itself interesting, as evidence of the close similarity in bodily structure and mental disposition of all the races of mankind”

(27). It is a but a short step between claiming this “remarkable” uniformity, and the much iffier claim that only a common animal progenitor could account for the common expressions of human groups and their animal relatives.

Rather than level the distinction between human and animal groups, however, the act of description paradoxically works counter to his original intention. Darwin’s reliance on observation and description turns out to be more individualistic than he imagined.⁹ “Close observers” (25) silently notice, record, and circulate detailed descriptions of the expressions they observe, while remaining emotionally independent of the object of observation. By keeping their expressions out of sight and camera range, such subjects implicitly place themselves higher on the evolutionary scale than the specimens they observe. In providing their descriptions, his correspondents generate a sense of “indebtedness” that binds these correspondents to one another. The affective community their descriptions thus call into being produces a collaborative body of knowledge essential to maintaining the rational hegemony of the inexpressive West over the portion of humanity represented. We see how this split between observing subjects and expressive objects plays out as Darwin says that “the civilized nations of Europe” do not cry as frequently as “savages,” who “weep copiously from very slight causes;” or that “Englishmen . . . rarely cry, except under the pressure of the acutest grief” (144). As this

⁹ Paul S. White discusses how the study of reflex physiology—led by Carpenter, Huxley, and others—transformed human beings into objects of study. As he explains, “hypnotic subjects, asylum patients, and other sufferers of nervous disease became in effect experimental animals, losing their will (or their soul), so that medical science, underpinned by experimental physiology and its laboratory-based technologies, could restore it. For the healthy to remain healthy, for the ‘common man’ to avoid degeneration into the state of the common frog, the constant exercise of self-control was required, duly strengthened by education and good breeding. . . . One of the truly reflexive features of reflex physiology was that scientific activity, the performance of experiments in particular, was itself a discipline of self-mastery—a means of strengthening the power of the will, as manifest in the faculty of attention, over the bodily functions, appetites, and emotional drives.” (66-7).

international group's objects of study—including children, women, patients, and “savages”—give way to expressions like crying or sneering, they reveal their greater proximity to their animal progenitors and place themselves closer in evolutionary terms to the animal than to the Englishman. This split within the category of the human between rational observer and expressive object of the gaze is nowhere so clear as in Darwin's discussion of Dr. Browne's patients, an “insane lady,” an “old soldier,” and an “epileptic idiot,” each of whom snarls under duress so as to reveal their canine teeth: “The expression here considered, whether that of a playful sneer or ferocious snarl, is one of the most curious which occurs in man. It reveals his animal descent” (230). Rather than producing a single species, Darwin's method divides scientific man from these segments of the human population whose instinctual show of expressions renders them indistinct from the animals.

Despite his original intent, Darwin's method produces observant individuals who occupy the same position as Darwin occupies. When riding on a train he observes “an old lady with a comfortable but absorbed expression” seated across from him:

Whilst I was looking at her, I saw that her *depressores anguli oris* became very slightly, yet decidedly, contracted; but as her countenance remained as placid as ever, I reflected how meaningless was this contraction, and how easily one might be deceived. The thought had hardly occurred to me when I saw that her eyes suddenly became suffused with tears almost to overflowing, and her whole countenance fell. There could now be no doubt that some painful recollection, perhaps that of a long-lost child, was passing through her mind. As soon as her sensorium was thus affected, certain nerve-cells from long habit instantly transmitted an order to all the respiratory muscles, and to those round the mouth, to prepare for a fit of crying. But the order was countermanded by the will, or rather by a later acquired habit, and all the muscles were obedient, excepting in a slight degree the *depressores anguli oris*. The mouth was not even opened; the respiration was not hurried; and no muscle was affected except those which draw down the corners of the mouth. (179-80)

It is not difficult to imagine why some read this account as a show of Darwin's sympathy and sensitivity toward other human beings. He attends to the subtle movements of the woman's face, particularly the muscles around her mouth, and attempts to imagine the thoughts that might have produced her tears.¹⁰ His doing so also reveals the problem inherent in observation as a way of knowing. His description begins with the contraction of the woman's *depressores anguli oris* and proceeds to read the woman's face in the same way that he would read a photograph of facial expression. By assuming the position of an observant subject, Darwin divides himself not only from this woman but also, and implicitly, from the rest of humanity riding the train for whom she serves as a specimen. He does not consider that, like the woman, he is inseparable from the species body he shares with her. The attempt to grasp humanity by severing one part to stand in for the whole yields the descriptive dead-end that Darwin encounters on the train: description begets description and little else.

The Intelligent Body

In contrast to his method, Darwin's argument for the evolution of expressions collapses the distinction between observing subjects and expressive objects. In accounting for the origin and development of the expressions, Darwin transforms even the rational man of science into a minute product of biological evolution—a being governed by the collective impulse of generations rather than by individual volition. This account places the mind and the body in a reciprocal relationship and prioritizes non-rational, non-individuated modes of thought—something like the collective imagination

¹⁰ For Desmond and Moore, this scene shows Darwin at his most sympathetic. According to their account, when Darwin watched the woman on the train, he “wrote helplessly of himself” and showed his readers how well he had learned, over time, to “read strangers’ faces” (593). “No detached observer” they write, “he perceived with pathos, and the thought of his own long-lost child still moved him to tears. In death as in life, Annie opened his heart” (594).

of the species—as the cognitive function with the greatest sway over the body and its actions. The ability to think in turn depends upon the body’s agitation. Darwin’s theory of evolution thus levels the difference between rational subjects and expressive objects that his scientific method takes for granted. By opening individual minds and bodies to one another, he subjects individuals to external instincts and impulses, uniting human subjects and objects in a single evolutionary species body.

Darwin relies on the account of the nervous system put forward by Alexander Bain, George Henry Lewes, and Herbert Spencer. Darwin relies especially on Herbert Spencer’s discussion of “nerve force” in *The Physiology of Laughter* (1860) to support his main point that “actions, which were at first voluntary, soon become habitual, and at last hereditary, and may then be performed even in opposition to the will” (326).

According to Spencer’s theory, stimulation of the mind in thought or feeling produces an excess of nervous energy in the body that must diffuse itself through physical action. A voluntary action, like shaking an injured part of the body, provides relief because it expends the excess nervous energy generated by pain. Over time, as excess nerve force expends itself in the same ways, it cuts nervous routes through the body that allow the nerve force to travel and expend itself independent of consciousness. Darwin employs a Lamarckian logic that comes to him through Spencer to claim that these acquired nervous pathways can be passed to future generations through inheritance.¹¹ Under this principle, when our mouths tremble in sadness, it is because “during infancy in many generations,

¹¹ Wilson is one of few critics who acknowledge Darwin’s Lamarckism: “My preoccupation with Darwin’s preference for reductive explanations of emotional expression,” she writes, “is further animated by his methodological reliance on one of the biological sciences’ most disreputable explanatory systems: Lamarckism. Although it is Darwinism that is most often credited with bringing Lamarckism into disrepute, Darwin was as much a Lamarckian as he was a proponent of natural selection. In *The Expression of the Emotions in Man and Animals*, he relies more on Lamarckian ideas than on his own theories of natural selection” (65).

nerve-force will tend to flow, on the principle of long associated habit, to these muscles as well as to various other facial muscles.” In later life, when we experience pain or distress, the nerve force automatically flows to the same muscles, calling our faces into action, whenever “even a slight feeling of distress is experienced” (179). The generation of excess nerve force explains a number of our less serviceable expressions, like scratching the head in confusion or exposing one canine tooth in disdain. Darwin calls such expressions the “rudimental vestiges” (181) of formerly purposeful actions that have been converted into reflexes and passed down through generations: “with mankind some expressions, such as the bristling of the hair under the influence of extreme terror, or the uncovering of the teeth under that of furious rage, can hardly be understood, except on the belief that man once existed in a much lower and animal-like condition” (12).

Refusing to “disconnect[] biology from its constitutive relations with other ontological systems” (70), Elizabeth Wilson contends that in *Expression*, “biology does not act without psychology. Even events governed by reflexive (autonomic) systems are embroiled in and amplified by psychic action” (76). While agreeing with her, I want to stress the collective implications of this formula, which psychology often suppresses in favor of individual cases. The “psychic action[s]” that jerk the body into action arise from the collective imagination and repeated actions of the human species, rather than from the individual will. Darwin argues for the body’s uncanny sensitivity to non-rational, non-individual modes of thought which make it resistant to the dictates of the will. Darwin describes a hypochondriac whose “grief muscles” were “permanently contracted” for

months in response to her belief that she had lost all of her internal organs.¹² Her body responds to the reality that her imagination conjures, rather than to her actual somatic condition. As a result, she produces an excess nerve force that called her face into expression and her body into action. This sensitivity to phantasmagoric phenomena is by no means exclusive to hypochondriacs. Darwin puts himself to the test. While visiting the zoo, he stood before a snake that was kept behind a pane of glass, determined not to start if the snake struck. When the snake did strike, “[his] resolution went for nothing, and [he] jumped a yard or two backwards with astonishing rapidity.” From what he concludes: “My will and reason were powerless against the imagination of a danger which had never been experienced.” This passage, along with his multiple descriptions of hypochondriac behavior, makes a case for the claim that for even the most rational human beings, individual “will and reason,” are “powerless” in face of the efficiency with which the imagination stimulates the body into unmediated action.

Darwin and his hypochondriac stand in for a new kind of human being whose body responds to forms of intelligence based in the impulses of the species. The “imagination of a danger which had never been experienced” stimulates Darwin’s into action as his body responds to a residual danger that does not exist within the sanctuary of the London Zoo. As Darwin jumps back from the glass, excess nerve-force pulses through pathways established over countless generations. This flow of nerve force animates those bodies in actions that have little correspondence to observable reality.

Like the domesticated dog that acts out the far distant past of his species when he paws at

¹² This patient was “a widow, aged 51,” who “fancied that she had lost all her viscera and that her whole body was empty. She wore an expression of great distress, and beat her semi-closed hands rhythmically together for hours. The grief-muscles were permanently contracted, and the upper eyelids arched. This condition lasted for months; she then recovered, and her countenance resumed its natural expression” (171).

the carpet in a “senseless manner” (51)¹³, even Darwin himself makes that past visible when he acts impulsively or habitually. An expression is for all concerned the “purposeless remnant of an habitual movement, which was originally followed by some remote progenitor . . . for a definite purpose, and which has been retained for a prodigious length of time” (52). Darwin’s account of the evolution of expression thus carries forward the distant past of the species into the present. In this way, Darwin’s case studies narrow the gap between the observing, self-regulating subject and his expressive object of study. Their movements and gestures are curiosities, performed independent of the will and far removed from their original purpose.

The Sentient Mind

If the action of the mind calls the body into involuntary action, then the action of the body affects the mind. As excess nerve force runs from the body to the brain to produce thoughts and speech as well as feelings that seem to originate independent of the subject. *Expression* ascribes to the mind an unprecedented corporeality by conceptualizing the mind as something that can be physically called into action by influences that arise from outside of it. In his account of how laughter works, for example, Darwin explains that “the imagination is sometimes said to be tickled by a ludicrous idea; and this so-called tickling of the mind is curiously analogous with that of the body” (184). Here, Darwin attributes a physicality to the mind usually associated with the body. “Tickling” collapses mind and body in that both require external agents to call them into action. Just as “a child can hardly tickle itself,” the mind requires

¹³ As Darwin writes, “Dogs, when they wish to go to sleep on a carpet or other hard surface, generally turn round and round and scratch the ground with their fore-paws in a senseless manner, as if they intended to trample down the grass and scoop out a hollow, as no doubt their wild parents did, when they lived on open grassy plains or in the woods” (51).

“something unexpected”—a novel idea to “break[] through an habitual train of thought” (186). The mind so described is certainly at odds with that of the self-regulating observer whom he takes for granted elsewhere in *Expression*.

The language of “tickling,” I suggest, is neither accidental or merely metaphorical for Darwin, who insists throughout *Expression* that the mind is a sentient object that can be grasped, tickled, and called into thought and feeling.¹⁴ This phenomenon is most evident in his discussion of blushing. In her account of blushing in Darwin’s work, Elizabeth Wilson emphasizes the ways that consciousness of the attention of other people evokes a blush.¹⁵ Darwin’s remarks on blushing put the stress on nervous energy that in blushing runs from the body to the mind, provoking the mental faculties into unwilled action:

most persons, whilst blushing intensely, have their mental powers confused. . . . Persons in this condition lose their presence of mind, and utter singularly inappropriate remarks. They are often much distressed, stammer, and make awkward movements or strange grimaces. . . . I have been informed by a young lady, who blushes excessively, that at such times she does not even know what she is saying. When it was suggested to her that this might be due to her distress from the consciousness that her blushing was noticed, she answered that this could not be the case, ‘as she had sometimes felt quite as stupid when blushing at a thought in her own room.’ (297)

From anecdotal evidence as well as experimentation with a group of patients who were given “the nitrite of amyl” to stimulate a blush, Darwin concludes that “it would seem

¹⁴ Darwin ascribes this phenomenon to the influence between the heart and the organs established through the “pneumo-gastric nerve.” “When the heart is affected,” he explains, “it reacts on the brain; and the state of the brain again reacts through the pneumo-gastric nerve on the heart; so that under any excitement there will be much mutual action and reaction between these, the two most important organs of the body” (71).

¹⁵ For Wilson, “What causes the capillaries to enlarge and thus redden the face with blood is not ‘any physical means’ but rather a psychological action. The etiology of blushing must be mapped through the mind. The second part of Darwin’s argument follows quickly from this. In truth, it is not my mind that causes the capillaries of my face to be swollen with blood, it is what is in the mind of another person that has this influence. . . . Blushing is an intersubjective event. In particular, Darwin argues, it is the attention of others on us (especially on the face and the exposed parts of the body) that causes us to blush” (75).

that the capillaries of the face are affected, both during the inhalation of the nitrite of amyl and during blushing, before that part of the brain is affected on which the mental powers depend” (299). Biology directly leaves the “mental powers confused,” robbing individuals of “their presence of mind,” and leaving Darwin’s subject feeling “stupid.” When someone blushes, she can “utter singularly inappropriate remarks;” the young lady who blushes excessively “does not even know what she is saying.” Speech, in this case, comes under the rule of biology. “Most of our emotions,” Darwin explains, “are so closely connected with their expression, that they hardly exist if the body remains passive” (217). “Even the simulation of an emotion tends to arouse it in our minds” (334). Darwin attacks the idea that our thoughts, our words, and our emotions are personal and private; they are somatic responses that arise the excess nervous force that “tickles” the mind into feeling. He explains this phenomenon with reference to the neural networks connecting the head and the face, or, in his words, the “intimate sympathy which exists between the capillary circulation of the surface of the head and face, and that of the brain” (299).¹⁶ Because of this “intimate sympathy,” a blush is equally likely to produce shame as shame is to produce a blush.

By thus opening the body to the imagination of the species, and making the mind into an organ that can be “tickled” into (or out of) feeling, Darwin produces a network that competes with rational models. Here we find the language of sympathy creeping back into *Expression* in a dramatically altered form. Sympathy is neither the individualized form of feeling that Adam Smith describes in his *Theory of Moral*

¹⁶ He continues with this explanation: “If, then, there exists, as cannot be doubted, an intimate sympathy between the capillary circulation in that part of the brain on which our mental powers depend, and in the skin of the face, it is not surprising that the moral causes which induce intense blushing should likewise induce, independently of their own disturbing influence, much confusion of mind” (299).

Sentiments, nor the relationship between the organs, facilitated by the nerves, that Charles Bell proposed. Sympathy instead resides in the messy interpenetration of minds and bodies as well as the objects that comprise the material world:

There are other actions which are commonly performed under certain circumstances, independently of habit, and which seem to be due to imitation or some sort of sympathy. Thus persons cutting anything with a pair of scissors may be seen to move their jaws simultaneously with the blades of the scissors. Children learning to write often twist about their tongues as their fingers move, in a ridiculous fashion. When a public singer suddenly becomes a little hoarse, many of those present may be heard, as I have been assured by a gentleman on whom I can rely, to clear their throats. (43-4)

In this passage, jaws and scissors, tongues and fingers move synchronously in what Darwin calls “sympathy.” The throats of individuals watching a singer who is a “little hoarse” likewise respond sympathetically to his throat, as if an action in the body of one individual can change or remedy a problem in another.

Darwin never explicitly acknowledges the problem that arises in opening human beings to networks of thought and feeling that compete within the modern subject. Sometimes he is a self-regulating subject, united with others of his kind through the observations and descriptions that circulate among them. But sometimes he is an expressive being, whose actions make visible the collective expression of the species body. This dualism organizes Stoker’s horror fiction. In writing *Dracula*, Stoker pits Van Helsing’s cohort, Darwinian observers in their own right, against the affective, evolutionary body of the vampire. Their combat not only shows the hostility between the competing versions of modern feeling that surface in *Expression*, but also attacks Darwin’s implicit assumption that human beings can be both enlightened subjects and also participate in the affective species body that his work calls into being. For Stoker,

these forms of being human can neither coexist nor know each other through observation and description. When individual reason and collective impulse compete, the expressive species body absorbs the individual subject into the species of which he is but a small and insignificant part.

Darwin and *Dracula*

By writing a novel that brings a group of observant subjects into conflict with the affective body of the vampire, Stoker calls into question the modern individual and his way of knowing. This narrative account of managing the vampire's attack features Van Helsing, a man of science, psychologically equipped with "an iron nerve, a temper of the ice-brook, an indomitable resolution, self-command and toleration exalted from virtues to blessings, and the kindest and truest heart that beats" (122). Van Helsing believes that we grasp the external world through the five senses, particularly the sense of sight, and instructs his group to cultivate an "open mind" toward the minutiae of daily life, "however trivial" (251), by observing disruptions in their journals. Stoker creates a community who take down their observations in journals that together make a "wonderful dog's-eared notebook" (278). The novel is the product of their "habit of entering accurately" (44). Description, in this context, affirms the continuity and coherence of independent selfhood by externalizing individual observations. Mina Harker suggests that writing in a journal is "like whispering to one's self and listening at the same time" (80-1). She is careful to "put down exactly almost every word spoken" (194). The descriptions that proliferate in these journals distinguish their authors as observant subjects from the expressive objects they study, which remain closed off as ethnographic curiosities. Description constitutes the basis for human affiliation early in the novel as it

generates the same sense of “indebtedness” that unites Darwin’s cohort. Their combined descriptions constitute a collaborative body of knowledge that permits this group to regain the upper hand over the vampire.

A number of critics read Stoker’s hairy-palmed, blood-drinking vampire as the novelistic embodiment of the degenerate “Criminal Man,” whom Cesare Lombroso describes as an “an atavistic being who reproduces in his person the ferocious instincts of primitive humanity and the inferior animals (388).¹⁷ But the language in which Van Helsing describes Dracula is that of an evolving species population. Indeed, Dracula refers to himself as “we”—“almost in the plural, like a king speaking” (35)—and Jonathan Harker muses, “I suppose it is thus that in old times one vampire meant many” (317). To succumb to the vampire’s bite is to cease living as an individual subject and to yield to the diffuse mind and body of the species. While this species body is an expressive one, its expressions do not comprise the “natural language” that Bell had in mind. To the contrary, the affective body of the vampire enacts the thoughts and sensations that originate from the collective consciousness of the species. As “spasm[s] of rage” (172) dart over the dying Lucy’s face, or when she greets Van Helsing and his cohort in the cemetery with “eyes unclean and full of hell-fire” (225), a “voluptuous smile,” and “diabolically sweet tones” (226), we are to understand that her movements and expressions, like Darwin’s reflexive reaction to the snake, manifest the collective affect of the species that claims her.

¹⁷ Lombroso’s *Criminal Man* is an “atavistic being who reproduces in his person the ferocious instincts of primitive humanity and the inferior animals. Thus were explained anatomically the enormous jaws, high cheek-bones, prominent superciliary arches, solitary lines in the palms, extreme size of the orbits, handle-shaped or sessile ears found in criminals, savages, and apes, insensibility to pain, extremely acute sight, tattooing, excessive idleness, love of orgies, and the irresistible craving for evil for its own sake, the desire not only to extinguish life in the victim, but to mutilate the corpse, tear its flesh, and drink its blood” (388).

By confronting this affective species body with the class of observers, the novel exposes the contradiction between two forms of humanity that Darwin considers compatible. This encounter confounds scientific observation, which simply cannot see, let alone conceptually master, the species body that emerges from Darwin's argument. To the contrary, the vampire's bite transforms the individual into one that acts in accordance with the habits and imagination of the species. One observer after another accordingly finds his or her faculties powerless to deal with the vampire and keep him out of the nation, the home, and the self. As Jonathan reports, "The new phases of things leave my mind in a state of wonder which allows not room for active thought" (346). The novel puts modern man in the position that Harker himself occupies at Dracula's castle, in finding that his "useful" papers have disappeared. For George Levine, this is a "peculiar Darwinian wrinkle in the scientific preoccupation with observation" because the "observer becomes vulnerable, particularly because . . . the observer also becomes the observed" (*Darwin and the Novelists* 15).

Stoker's Modern Subject

The notion that individuals grasp the external world through the five senses, particularly sight, cannot hold up to the "imaginative whirlpool" (8) of Transylvania and the "whirl and rush of humanity" with whom the Count associates in London (27). Knowledge has expanded to include information that moves instantly along the nervous pathways that conjoin the disparate parts of a given body and unite that body to the next. Under these circumstances, objects of knowledge do not sit still; they are as prone to grasp the senses, "tickling" the mind and the body into action, as they are to be grasped and controlled *by* the senses, rendering observation, description, and even independent

thought useless. To dramatize this main point, the novel strips subjects like Jonathan and Mina of the ability to trust their senses and divests them of their capacity to observe and describe. The group, like Van Helsing, “doubt[s] if they be mad or sane” as they continue to accumulate meaningless, undifferentiated observations that, like Darwin’s accumulated observations on the train, simply miss the point. Stoker grants the affective body, which he grounds in the vampire, the subject position Darwin reserved for the Western observer. As the vampire fascinates Jonathan in the form of “floating motes of dust,” that “danced in the moonlight” (53) or surrounds Mina as a miasma, it slips through all physical and intellectual attempts to grasp or contain it through conventional means. Renfield, for example, reports that when he attempted to “h[o]ld tight” to the vampire, and “thought [he] was going to win,” “[Dracula] raised me up and flung me down” (299). For Stoker, the species body—which, in turn, claims both Darwin and the enlightened humanity that Stoker attacks in his novel—requires new ways of knowing and feeling that are far more suited to the constant change and chance implicit in Darwin’s model. The novel obligingly reconfigures the subjects, showing how our ideas of thinking and feeling must be brought up-to-date in the wake of the shifting, affective body that Darwin describes.

The novel reconfigures the complacent humanity we find in Van Helsing and his cohort by transforming deliberate actions into reflex—by detaching the body, that is, from the will’s direct influence, and by placing the body under the control of the collective imagination of the species. The body as Stoker reconfigures it does not enact the individual will or express private emotions; it makes visible the collective imagination of the species that claims it. Near her death, Lucy, “whilst still asleep,” takes

out a paper and tears it in two pieces. Even after “Van Helsing stepped over and took the pieces from her,” Lucy “went on with the action of tearing, as though the materials were still in her hands; finally she lifted her hands and opened them as though scattering the fragments” (163). Although her actions are unwilled and have no relation to observable, material reality, her body acts thoughtfully, subject to the influence of what Mina elsewhere calls an “odd concentration” (82) that arises from the vampire body that claims her and overrides her individual will and agency. These actions are not unique to bodies, like Lucy’s, that the vampire claims. Stoker’s novel likewise converts observation and description—the faculties that initially seem to set someone like Jonathan apart as an enlightened subject—into automatic, unwilled behaviors. On a number of occasions, Jonathan describes the activity of writing in his journal not as a willed choice, but as a compulsion. As he writes, “the habit of entering accurately must help to soothe me” (44); later, he explains that he “must keep writing at every chance, for I dare not stop to think. All must go down” (308). By thus transforming description—the basis of enlightened humanity for both Darwin and a character like Jonathan—into a compulsion, Stoker situates for habit and impulse, rather than the will, as the basis for modern human action.

In reconfiguring the human subject, the novel likewise forces private minds into companionship with the species body, producing thoughts and feelings, as in Darwin’s account of blushing, that arise independent of any one individual.¹⁸ Stoker imposes this new relationship between minds and bodies early in the novel, when Jonathan’s mind is literally tickled into feeling through his contact with the vampire body. As he wanders

¹⁸ Stacey Margolis discusses the way that in *Dracula*, desire does not arise from within the individual, but bypass the subject altogether. While I attribute this phenomenon as a response to Darwin’s work, Margolis reads the novel in the context of addiction.

through an uninhabited portion of the castle, three women surround him. Their voices and breath “sen[d] a tingling through his nerves,” and the feeling of teeth upon his neck makes “the skin of [his] throat [begin] to tingle as one’s flesh does when the hand that is to tickle it approaches nearer—nearer” (45). The collective tickle of the vampire body produces feeling and knowledge that originates outside of his mind: as the women “came close” to him, he believes that he “know[s]” their faces (44). Their touch produces both “longing” and deadly fear.” When he encounters the group a second time, he notices that their presence produces a “sense of soothing and a sort of calm” that “st[eals] over [him],” independent of his will (52). Later in the novel, as Mina yields to the affective body of the species, her emotions yield to external stimuli. She is prone to the “new weakness” of crying. In contrast to characters that depend upon impartial observation and description to grasp the external world, the lunatic Renfield understands that his mind has been pulled into the species mind and can draw on its knowledge. He accordingly stands alone as the one character who understands that he neither thinks nor acts for himself. Because he has abandoned himself to the vampire network, he possesses the knowledge that others seek yet cannot grasp through their rational faculties alone.

A “New Fascination”

By overthrowing the rational mind as manifest in impartial observation and description, the novel gives fair play to the instinctual, transpersonal forms of feeling that arise from the affective body of the species. Far from relegating individuals or groups to a “savage” or even inhuman state, ecstatic relationships between the human and the external world produce unprecedented forms of intimacies, knowledge, and emotional networks. One scene from *Dracula* that calls to mind Agamben’s bee, should illustrate

my point: the scene when Van Helsing and his company burst into the Harker bedroom, only to find Jonathan in a stupor and Mina sucking the blood flowing from a wound in Dracula's chest. To punish Mina for "aid[ing] in thwarting [him]," Dracula forces her to drink his blood. Sharing his substance conjoins Mina to the vampire body and subjects her to the mind of the species. Their bond opens her body to the sensations that arise from his. Her body, for example, "sh[akes] as though in a palsy" (368) when he is cold and must act when he commands. As she explains, "I know that when the Count wills me I must go (347). Likewise, their bond subjects her will to desires that are not her own. In drinking his blood, she reports, she "did not want to hinder him" (306).

Although Dracula intends to punish Mina by opening her mind to his, the novel tests the wealth of necessary information afforded by her "new fascination." Her captivation reverses the flow of information, giving her access to his observations, much like Darwin's circulation of information. Mina's captivation provides the group with a means—through hypnosis—to collect the information about Dracula that they require for survival. Locke's account of the mind and body limited the sensible world to markers that an individual takes in through one of the five senses. Darwin and *Dracula* together, I suggest, expand the knowable universe to include the kind of information Mina is able to collect about Dracula. What it means to keep an "open mind" shifts radically as characters become open to ideas and emotions that arise independent of the five senses and without the mind's supervision. Mina's instinctual way of "thinking" efficiently provides the answers to unanswerable questions. Mina capitalizes on this alternate way of thinking when she persuades Van Helsing to hypnotize her: "I have an idea. I suppose it must have come in the night, and matured without my knowing it" (331). As a

character like Mina adapts to unfamiliar circumstances, she relies upon ideas that “come in the night” and “mature” in her mind independent of her sense and intellectual labor. This mode of knowing by feeling, paradoxically enough, allows the group to retain their hegemony over the vampire. As Van Helsing states, with noticeable relief, “we can now know what was in the Count’s mind” (333-4). The relationship that Mina has with Dracula allows the “dwellers in the city” to at last “enter into the feelings of the hunter” (25).

This “new fascination” is not just for vampires, as Stoker reorganizes humanity according to the kinds of networks that Darwin elaborates in *Expression*. The kind of affective connection that Stoker establishes between Mina and the vampire body replaces the sympathetic family group as the basis of human community in the novel. Indeed, we might even say that the novel is better attuned to the possibilities inherent in Darwin’s model than Darwin himself in that it dramatizes the ways that his account undermines rational models of human thought, feeling, and action, and provides a new basis for human affect and affiliation. When Seward wonders whether Mina’s presence has “touched some chord in [Renfield’s] memory” (249), we can understand his language literally—her presence and influence extend beyond the boundaries of her body, “touch[ing]” Renfield’s mind and transforming the lunatic into an articulate gentleman. Jonathan and Mina are likewise in direct somatic contact with one another. His body ages as her body weakens; his hair turns gray less in response to his personal mental anguish than to hers. As Mina begins to feel in concord with other members of the group “unthinkingly” and “impulsively” (245-6), their minds and bodies all respond to one another, making of them all a single affect. Thus as Mina blushes, Seward blushes as a

“tacit answer.” (234); when she is happy, the rest are “infected somewhat with her gaiety” (347). These are but a few of the passages where Stoker reconfigures the communications between individuals as a single network, transforming the basis of knowledge from observation to the collective impulses of the species. To survive, in the context of this novel, is to abandon oneself to the network that circulates knowledge as well as feeling among members of the group. These networks recall the unselfconscious—even “rhizomatic”—absorption that Deleuze and Guattari describe: These “finite networks of automata in which communication runs from any neighbor to any other” (Deleuze and Guattari 17) offer the novel’s characters the most efficient (and up-to-date) ways to relate instantly to one another. At the same time, this configuration is very different from Agamben’s bee in that members of this community each possesses a different form of specialized knowledge—even Mina, who knows the heart instinctively.

Late-nineteenth-century fiction thus returns to the same problem that Mary Shelley poses in *Frankenstein* at the start of the nineteenth century: are human beings individual, self-enclosed subjects, capable of regulating their own behavior? Or are human beings part of a species body, and subject to the instinctive, impulsive, transindividual forms of thinking and feeling that arise with that body? At the start of the century, a novel like *Frankenstein* registers the collective body of the species as an intruder in the house of fiction, utterly incompatible with the forms of human feeling and community that had been central to the novel form. By the end of the century, in contrast, a novel like *Dracula* sees the horror in *leaving* the collective species body, rather than in joining it. As the group of individuals competes with a population of non-individuals for the definition of the human, that individuality makes modern man

susceptible to the vampire. Without the collective forms of intelligence and feeling that the group provides, individuals in this novel certainly perish. *Dracula* is continuous with the other texts, both scientific and literary, that I have considered in this project, with its interest in the progressive possibilities of the species body and the non-individuated forms of knowledge and feeling it produces. Together, all of these texts pose a significant challenge to the related assumptions that that the physical body defines the boundaries of the subject, and that thoughts and feelings arise from private, individual minds. In this way, a novel like *Dracula* is less entangled, as Robert Miles claims, in the “history of the subject,” and more interested in the positive and progressive possibilities in the species body that arises out of Victorian scientific discourse. Where Shelley’s modification of the figure of machinery, early in the nineteenth century, made the world of industrial capitalism seem natural if not altogether beautiful, late-nineteenth-century fiction like Stoker’s sees individuated consciousness itself as a machine that is part of a larger machine. As *Dracula* suggests, the machine of individuals with specialized knowledge will prove superior to manage a population of non-specialists.

CONCLUSION

In her introduction to *Darwin's Plots*, Gillian Beer argues that “how Darwin said things was a crucial part of his struggle to think things, not a layer that can be skimmed off without loss” (xxv). With such a claim, her approach to nineteenth-century science authorizes projects like this one. Following the precedent set by Beer, I have understood Paley, Bell, and Darwin as writers whose ideas cannot be separated from the language they use. I have aspired to produce readings attentive to what Beer calls the “story-generating words” (xxv) that arise in their work and to show how fiction, in turn, found those words generative.

Reading in this way, I have examined how Victorian fiction collaborated with multiple strands of nineteenth-century science—including natural theology, physiology, natural history, and psychology—to produce an explosion of radically new cognitive, emotional, and literary models. The scientific texts I discuss transformed the body into a mass of machines, and the brain into just one of many seats of sensory perception. Consequently, these scientific models made imaginable radically new, impulsive models of thought and feeling. Victorian novels test out these new models in an expanded and characteristically cosmopolitan setting. Fiction thus did as much, if not more, than the new accounts of the body and the mind to challenge scientific and social scientific theories that upheld reason as the sole marker of moral and evolutionary fitness. When Victorian fiction and science thus together relocated the rational, self-governing individual to a biological body—and simultaneously relocated that individuated body

within a boundless mass of living flesh—multiple models of the human proliferated as alternatives to the enlightened human subject.

The shift from portraying the individual as a self-enclosed consciousness capable of moral judgment and agency to a flicker of intensity in a vast biological mass is, to my mind, the most important literary change to take place in the age of Darwin. These radically new forms of intimacy, affiliation, and communication transformed the novel into a proliferation of subgenres testing nothing less than what it means to be a human being. We see subgenres of fiction—not only sensation fiction, but also detective fiction, science fiction, children’s fiction, exotic adventure stories, and a new variety of romance—emerging in rapid succession to test out these models in the context of the expanding and more variegated population that accompanied empire. In view of this transformation in the novel’s form and function, it does not make sense to think of even the novels of Austen and Eliot, much less those of the Brontës and Stoker, as carrying on a conversation with each other in a genealogical chain. It is more accurate to see the Victorian canon as the temporary winners of an argument concerning what the individual was when torn from its place in an older hierarchy of species and connected on a far more level playing field with competing life forms.

Because these alternate sources of affect burst open the novel form itself into a jumble of competing forms, we can understand “sensation” not as an illegitimate subgenre of one coherent tradition, but as a set of experiments that leave their mark on even the most traditionally canonical novels. Although sensation fiction has been read as a titillating subgenre of what F.R. Leavis called “The Great Tradition,” I have proposed to read sensation as a set of experiments that entirely rework the form said to reach its

maturity in Jane Austen's fiction—experiments which leave their mark on even the most traditionally canonical novels. The novels I have discussed—from *Frankenstein* to *Dracula*—are sensational, not merely because they produce physical responses in their readers, but because, like many other nineteenth-century novels, they legitimate sensation as an important physical, emotional, and epistemological category. At a point when biological rationality is the marker of enlightened humanity, these novels provide their readers with alternate models of the human whose fitness is not a function of the rational faculties. By this definition, sensation is a mode of experimentation that structures even purportedly “realist” novels.

The literary texts I have discussed here, and many I have not—including *Villette*, *The Woman in White*, *East Lynne*, and *The Mill on the Floss*—produced unprecedented forms of intimacy, affiliation, and communication. My understanding of these nineteenth-century novels allows us to revisit Virginia Woolf's famous claim that modernism overturns nineteenth-century realism—that “on or about December, 1910, human character changed” (746). The way of understanding nineteenth-century fiction that I propose here allows us to consider whether the instinctual models of knowing and feeling so overt in a modernist text such as *Mrs. Dalloway* are a fruition of earlier strands of nineteenth-century fiction. The nineteenth century bequeathed to the twentieth, not a coherent literary legacy for modernism to reject, but a complex tangle of competing cognitive modes and literary subgenres that Woolf and others appropriate and adapt for their own ends.

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