“Our Energetic Days”: American Literature in the Age of Classical Thermodynamics

Christopher Jenkins

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Department of English
Faculty of Arts
University of Ottawa

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Abstract

This thesis is about the relationship between a body of nineteenth-century American literature and the science of thermodynamics that was emerging between the 1820s and 1870s, changing the way people thought about the physical universe and the possibilities and limitations that it presented for human action. Its basic premise is that thermodynamic energy, as it emerged in the nineteenth century as a quantifiable phenomenon, was not a self-revealing natural fact, but the "hybrid" product of a "cultural field" that included literature among other of its essential points of mediation. Through readings of works by Herman Melville, Ralph Waldo Emerson, Henry David Thoreau, Nathaniel Hawthorne, Rebecca Harding Davis, Mark Twain, Robert Montgomery Bird and Thomas Josiah Dimsdale, it argues that literature throughout this period was very much occupied with questions and concerns that were reflected in the scientific and technological investigations that led to the creation of the laws of energy. Specifically, it argues that energy's conservative and/or dissipative tendencies, which, besides representing objective descriptions of energetic behaviour, also reflected real possibilities and limitations for human action, were a major concern of writers at this time. Their work, it is argued, reveals humanly and historically meaningful aspects of what, in the laws of thermodynamics, would become ahistorical scientific facts, proving that literature and science, belonging to a greater "cultural field," follow parallel lines of investigation indicative of larger cultural problematics.

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Introduction: Literature, Science, and their "Cultural Field"

On September 3, 1833, Ralph Waldo Emerson, land-bound in Liverpool due to inclement weather and awaiting passage home, visited a British railroad with fellow countryman and physicist Jacob Perkins. Emerson's journal entry for the day reveals that during this visit, Perkins, an inventor and mechanical engineer as well as a physicist, instructed Emerson on the science of heat and economy of steam. Emerson writes, "[h]e [Perkins] says that he confidently expects the time will come when the Ocean will be navigated by merchantmen by *steam* as the most economical means but there is a great deal to be done first [;] that now very little advantage is taken of the *expansion* of steam [,] its most important property"[1] (*JMN* 4: 82). This encounter with Perkins bore immediate fruit in one of Emerson's earliest lectures, given later that fall to the Natural History Society in Boston, titled "The Uses of Natural History." In this lecture, Emerson espouses the supreme utility of science in the cause of the mechanical arts, giving by way of an example the insight of "Mr. Jacob Perkins" into the process through which water is boiled and turned into steam and the innovation that it facilitated ("Uses"13). Perkins, Emerson tells his audience, by wedding scientific knowledge to mechanical ingenuity, was able to increase the productive potential of the process by inventing "a machine called the Circulators … which has already been adopted in three locomotives on the Liverpool and Manchester Railroad with the best success and is about being introduced into all" (14). Emerson's comments in his lecture of 1833 reveal a close relationship between human technology, natural science and literature at a period that was witnessing the beginning of a major scientific paradigm shift with the emergence of thermodynamics, the new science of energy.

[1] In this quotation, the two initial uses of square brackets, changing an uppercase "H" to a lowercase "h," and identifying Perkins as the subject of the sentence, are mine, but the other square brackets, being used to add punctuation marks, were inserted by the editors of the text.

Bruce Clarke dates the dawn of classical thermodynamics to 1852 and the publication of a paper by William Thomson titled "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy" (*EF* 2). This situates Emerson's 1830s' work some twenty years prior to this major shift. Yet the paper responsible, in large part, for inspiring Thomson's own work, and thus inaugurating this shift, Sadi Carnot's "Reflections on the Motive Power of Heat," was published in 1824, close to ten years before Emerson encountered Perkins in Liverpool. Carnot's paper, a theoretical consideration of the heat engine, is concerned with the conversion of heat into work. While he does not use the term "energy," which did not receive its thermodynamic meaning until the 1850s, he is describing exactly that. For "energy" represents the "capacity to do work" (Schnieder and Sagan 26) and Carnot's paper, as the title suggests, is concerned with the work (motive power/motion) that can be derived from heat. This is precisely what Perkins was describing to Emerson when discussing the steam navigation of the ocean: the conversion of heat from steam into the work driving the pistons of an engine. What Carnot realized and made explicit in his seminal paper of 1824 was that there could never be a perfect conversion of heat into work, that through processes such as friction and conduction some heat would always be lost to mechanical utility. This became a fundamental axiom that would be taken up by thinkers such as Thomson and Rudolph Clausius in the 1850s and turned into one of the principles governing energetic behaviour. When applied to a steam engine, Carnot's axiom denied the possibility of perpetual work. But when applied to a mechanistic cosmos governed by energetic conversion, it denied the Newtonian postulate of reversible mechanical motion and the perfect cosmos that it implied. As Michel Serres puts it, "[t]he cosmos is a steam engine" (59), meaning that, just like a steam engine, it will run out of steam in time. This sobering fact, the downside to the progress in

knowledge and technology that Emerson celebrated in his journal entry and lecture of 1833, and a major cosmological shift, was beginning to be established as early as the 1820s.

My thesis is about the relationship between a body of nineteenth-century American literature and the science of thermodynamics that was emerging between the 1820s and 1870s, changing the way people thought about the physical universe and the possibilities and limitations that it presented for human action. As will be shown, much of the literature of this period was occupied with questions and concerns that were reflected in the scientific and technological investigations that led to the creation of the laws of energy. Energy's conservative and dissipative tendencies, formulated in the first and second laws of thermodynamics[2], respectively, were not solely of scientific significance. While science may have bestowed upon these tendencies the purity of mathematical equation and the weight of ahistorical fact, the literature of the period revealed their humanly and historically meaningful side. For a very different world with very different possibilities and limitations presented itself to historical humanity depending on whether the earth's energetic reserve was understood as inexhaustible or the converse. Human movements integral to the American nineteenth century, such as industrial expansion and socio-historical renewal, carried values and beliefs that were very much tied to the world's material-energetic conditions, a connection that is made apparent in the literature to be examined. That science and literature, two very different intellectual disciplines, brought their focus to bear upon variable

[2] The first law of thermodynamics states that the energy of the universe is constant. In other words, energy cannot be created or destroyed. Throughout its various conversions, its overall quantity remains the same. The second law of thermodynamics states that the entropy of the universe tends towards a maximum. "Entropy" denotes a form of energetic waste. While this waste does not entail the destruction of energy, which would contradict the first law, it does entail its conversion into a state that is useless for the purposes of work. The second law states that all the energy in the universe will eventually become entropic.

dimensions of a shared theme at more or less the same time reveals that neither one arises in a vacuum, that they, in fact, have a common ground.

"Cultural Splitting" vs. "Cultural Field"

Though it has received much criticism from scholars in the humanities, one prevalent model of the relationship between literature and science is based on what Barri Gold calls "cultural splitting" (23). This phrase refers to the separation of science and literature (or the humanities more broadly speaking) into two isolated domains, with isolated objects: real nature on the one hand, and humanity and language on the other. This model received its popular formulation in 1959 through C.P. Snow's famed lecture "The Two Cultures" which describes a gulf of "mutual incomprehension" separating the world of science and that of literature (4). As a cultural model, such "splitting" is reflective of the modern creation of two distinct ontological domains: that of the object and that of the subject. In their *Dialectic of Enlightenment*, Theodor Adorno and Max Horkheimer write, "[o]n the road to modern science, men renounce any claim to meaning" (5). This describes a divorce between the world of "science" (concerned with the object of nature) and the world of "meaning" (concerned with the subject of interpretation). This divorce, along with the respective ontological values attributed to each domain by a world that construes the objective as real and the subjective as adventitious, lays the ground for a scientistic relationship between science and literature whereby the former, as the bearer of objective knowledge, can influence the latter, being taken up as theme or interpretive frame work, whereas the latter has little or nothing to offer to the former.

Despite the criticism it has received this perspective continues to exert a powerful influence on the way people view the relationship between the natural sciences and the humanities. When Isabelle Stengers refers to the "disqualification . . . of so-called 'pre-scientific,' or nonrational,

knowledge . . . with which [the sciences] are identified" (11), she is lamenting the fact that science continues to be viewed by many as the arbiter of a form of knowledge with the power to invalidate all others. This is the power of what Adorno and Horkheimer describe as "dissolvent rationality" (6), that which dissolves all meaning into myth and myth into subjective projection. Stengers shows how this rationality has become something akin to a religious ideology, arguing that "[t]he sciences, as they are taught . . . do not have a meaning that is appreciably different from a religious engine of war, pointing out the path to salvation, condemning sin and idolatry" (25). In this description, science takes the form of an orthodox dogma to which the enlightened must faithfully adhere against the onslaught of non-scientific heresies and superstitions. It is, therefore, not as Bruce Clarke and Manuela Rossini contend, that the "schisms" in "modern knowledge" stem from the fact that "there is no longer a credible metanarrative that could bind the current profusion of academic cultures and their specialized disciplines into an ordered hierarchy," a fact that they attribute, with Jean-Francois Lyotard, to "our postmodern condition" (xv). If this were so, scientific knowledge would not be regarded as any more valid than forms of knowledge generated by the humanities. But this is clearly not the case. Nor am I arguing that such a "postmodern condition" of total relativity and the scepticism to which it inevitably leads is desirable. But as it stands, there is a hierarchy, as Stengers makes quite clear. To see this, one only has to look at the state of our schools. Martha Nussbaum notes that "[t]he humanities and the arts are being cut away, in both primary/secondary and college/university education, in virtually every nation in the world" (2). She further notes that, in the U.S., there is a growing concern that "American policy makers and educators … have put too much of a focus on the fields of science, technology, engineering, and mathematics at the expense of the study of literature, philosophy, and other areas in the humanities" (xvii-xviii). Though science represents

just one of the STEM fields, there is a reason its initial comes at the beginning of the acronym. Even if, as Bruno Latour contends, we have never been modern, having never actually operated according to the ontological distinction which, he argues, founded modernity (as it is thought to exist), the modern narrative that pits "dissolvent" scientific rationality against the "powers of the imagination" (Stengers 2) continues to exert its influence.

It thus continues to be worthwhile to propose or refine alternative models of the relationship between the natural sciences and the humanities. My thesis describes a relationship between a body of nineteenth-century American literature and the science of classical thermodynamics that is more complementary and nuanced, giving primacy to neither science nor literature. Stephen Brush describes something very similar to what I have in mind in *The Temperature of History: Phases of Science and Culture in the Nineteenth Century* (1978). Couching his argument in terms of the relationship between "science" and "culture," as opposed to "science" and literature, but describing "culture" as the sphere of discourses such as "literature," Brush proposes that, besides the two obvious possibilities whereby science influences culture, or culture, science, "[a] third possibility is that the same notion may appear at about the same time in both science and culture without any apparent causal influence one way or the other" (1-2). He argues that "[s]uch was the case with the principle of dissipation of energy in physics" (2). Brush's terminology is problematic in so far as science and literature both belong to a greater culture. But he makes an important point. For in order that the "same notion" may appear at "about the same time" in science and *literature*, there must be some form of intellectual and practical space, like culture, that endows this "notion" with urgency and meaning. Several critics in the field of Literature and Science studies have posited the existence of just such a space. Katherine Hayles describes a "cultural field" that is formed by a "diffuse network of everyday experiences" through which

"certain questions or concepts become highly charged" (4), thus appearing as the object of both literary and scientific thought. George Levine, describing a movement of give and take between literature and science within a given cultural milieu, argues that "how culture tells stories, that is, imagines its life, subtly informs the way science asks questions, [and] arrives at theories that reshape the culture that formed them" (4). In this example, the ideas and values of culture are given imaginative form through narrative, affecting how science interrogates nature, while the results of scientific interrogation are fed back into culture as a determinant of new ideas and values which shape future narratives. Both of these models describe the "imbroglios" that Latour calls "networks" (*WHNBM* 7), those complicated spaces in which modern subjects and objects become hopelessly intertwined, creating "feedback loops" (Hayles 4) of "everyday experience" (including the technology by which it is mediated), imaginative narrative (and the values that they inscribe) and objective fact (the product of natural science). It is to such a space that we must attribute the shared focus of literature and science in the era of classical thermodynamics rather than to any scientistic appropriation by literature of scientific truth.

Energy as "Hybrid"

Creatures that emerge from a "cultural field" fail to fit neatly into the categories of subject and object that structure modern thought. Thus, Stengers refers to the "paradoxical mode of existence" (21) of such beings as a way to convey their complex ontological status. Latour, at times, calls them "factishes" (*OMCFG* 21), which, as mixtures of "fact" and "fetish," combine objective nature with subjective interpretation or meaning. He also, at times, calls them "quasi-objects" and "quasi-subjects" (*WHNBM* 51), designating the difference between the apparent objective or subjective status of a being and its composite reality. The term that I have chosen to adopt, also via Latour, is "hybrids" (10). When Latour describes the processes of "translation"

(10) and "mediation" (77) by which these "hybrids" are produced, he is basically describing the same "feedback loops" that were previously discussed through which "everyday experience," technology, imaginative narrative, human value and objective fact come to inform one another in order to create new experiences, new technologies, new narratives, new values and new facts, "hybrids" of "hybrids" one and all.

My first chapter, "The Monster of Energy," establishes the "hybrid" character of the principle of energy that emerged in the discourse of thermodynamics in the nineteenth century.[3] It does so, firstly, by further discussing Latour's concept of hybridity. This is followed by a description of some of the points of "mediation" that went into the production of the principle of energy as it came to be conceived in the work of William Thomson, a central figure in the development of thermodynamics. These points of "mediation" include natural science, commerce, technology, as well as the narrative inscribed in Calvinist belief about the fallen state of humanity and nature. By revealing these points of "mediation," this chapter reveals that the principle of energy that came to be the "object" of thermodynamics was, really, the "hybrid" product of a "cultural field" rather than an isolated and self-revealing natural fact. Following this discussion of energy in the work of Thomson, the chapter offers a reading of Herman Melville's *The Confidence-Man* as an allegory for the principle of energy that was emerging in the 1850s. This is the one instance in which an argument in favor of a relationship of one-way influence from science to literature is proposed. Melville, it is argued, takes up the theme of a "hybrid" principle of energy in his novel of 1857 from the science that was developing in scientific journals and societies throughout the decade. The point of this is to further establish the "hybrid" character of the principle of energy

[3] "Monstrosity" is meant as a synonym for "hybridity." Latour, at times, refers to "hybrids" as "monster[s]" (*WHNBM* 42).

that was the "object" of thermodynamics. For in Melville's novel, energy is, at once, natural, socio-technological, and moral, thus reflecting its "hybrid" status. Having established this status in the first chapter, I will be able to show, in subsequent chapters, how literature, and the values and concerns inscribed therein, contributed to the "cultural field" that produced the principle of energy and the laws by which it is governed.

My second chapter, "When Old and New Worlds Collide," begins the process of revealing literature's contribution to the "cultural field" out of which the principle of energy emerged in the nineteenth century. It focuses specifically on the question of the age of the world as it was discussed in nineteenth-century American literature. This question can be posed in two ways: in terms of duration, or in terms of dissipation. While the two aspects of this question intersect in scientific discourses such as thermodynamics and geology, this chapter focuses on the question of whether the energy of the world dissipates over time or remains forever constant. The chapter identifies two positions on this question defined as energetically conservative and energetically liberal. The former, characterized by the belief that the energy of the world remains constant through time, and that, consequently, at any given point in time, the world is as-good-as-new, energetically speaking, is identified with Emerson and Henry David Thoreau. The latter position, characterized by the belief that the energy of the world dissipates over time, and that, as a result, the world ages, is identified with Nathaniel Hawthorne. A journal entry of Emerson's from 1857 discussing the work of Lazare Carnot, as well as a lecture from 1862 titled "Perpetual Forces," read along side other peripheral texts, are shown to reflect Emerson's energetically conservative position. Sections from *A Week on the Concord and Merrimack Rivers* (1849), as well as the posthumously published essay, "Walking" (1962), are shown to reflect the same position for Thoreau. The chapter further argues that the counterpart of their energetic conservatism is a

socio-historical liberalism espousing the values of individuality, originality and human progress. Conversely, *The House of the Seven Gables* (1851) is shown to reflect Hawthorne's energetically liberal position, the counterpart of which is a socio-historical conservatism espousing the idea of humanity's trans-generational corruption, or "fallenness." The opposing positions of energetic conservatism/socio-historical liberalism and energetic liberalism/socio-historical conservatism give very different meanings to the idea of America, representing it, respectively, as the locus of a new world, full of potential work, or the remnant of an old world, incapable, by its own lights, of producing anything really new. Viewed together, these texts reveal the historically meaningful side of what, in the laws of thermodynamics, would become ahistorical scientific fact.

While, throughout the era of classical thermodynamics, energy, viewed as a conservative and/or dissipative agglomeration of forces, informed human views on the natural world and cosmos, it also shaped human views on what it meant to be human. For just as the cosmos and natural world could be conceived in terms of their "capacity to do work," so could human beings. My third chapter, "Mechanical Labor and Wasted Life," takes up this theme by looking at a body of texts that represent the machine-like labor of humans in industrial modernity and the wasted life that follows therefrom. Wasted life is viewed in two ways, both related to energy, and both resulting from mechanical labor, but one reflecting an idealist, and one a materialist, worldview. The reason for this dual perspective is that the nineteenth century was, among other things, a transition period in which idealism was giving way to materialism as the guiding philosophy of western humanity. This transition facilitated the reimagining of the human as a mechanical being, analogous to a steam engine in its energetic economy. For those who still held to some form of idealism, lives dedicated to mechanical labor were productive of two forms of waste: the intellectual waste of *reducing humans to machines* and the physical waste resulting from *humans*

laboring as machines. In discussing the first form of waste the chapter relies on the Aristotelian concept of *energeia*, the metaphysical original from which our concept of physical energy is derived. This concept is used to denote the energy of the intellectual faculty, or consciousness, specific to humanity in Aristotelean philosophy, which is conserved and actualized in a life of contemplation but dissipated and wasted in a life of mechanical labor. This form of wasted life is the opposite of the classical "good life" and is the result of *reducing humans to machines.* The second form of waste that is discussed is the result of the physical/psychological exhaustion of the body/brain through the process of mechanical labor. It is the result of humans *laboring as machines.* The chapter begins by looking at sections of Thoreau's *Walden* (1854), which, read along side other peripheral texts, reveals his view of a wasted life as one in which freedom and intellectual contemplation are sacrificed to mechanical labor. This is the wasted life of humanity being reduced to machinery. The chapter then looks at *Life in the Iron Mills* (1861), by Rebecca Harding Davis, in which wasted life is the product of humans being reduced to machines and the subsequent product of their labor as machines. The chapter finally looks at two texts by Melville, "The Paradise of Bachelors and The Tartarus of Maids" (1855) and "Bartleby, the Scrivener" (1853), both of which depict the wasted life of humans that labor like machines, the former representing this process in a factory setting, and the latter in a Wall Street office. While the wasted life that stems from the reduction of humans to machines is not as explicit a focus in Melville's texts as in those of Davis and Thoreau, it is an implicit theme in both texts and is analyzed accordingly. Together, these texts represent the nineteenth century as a transitional period in which idealism was giving way to materialism through the redefinition of natural and social forces as manifestations of a multiform and ubiquitous physical energy to be harnessed in the service of modernity's relentless regimen of material production. Through the exhausted

figures that they depict, these authors not only remind their readers of the necessary waste that accompanies material production, but of what they viewed as the much larger waste of reducing humans to mechanical beings.

One theme that is missing from my consideration of literary representations of human work and waste in nineteenth-century America is slavery. The enslavement of humans for the purposes of material production in the antebellum economy represents the most glaring example of lives wasted through work in the century. The main reason for this omission is the magnitude of the topic and the danger of treating it too lightly. An entire chapter would be needed to address the theme in a non-perfunctory manner. Given the time-constraints of the project, I decided to leave it out rather than risk an underdeveloped treatment. I do intend to include the topic when I revise the project and expand it into a monograph. Figures that I intend to look at include Nat Turner, Harriet Jacobs and William Wells Brown. I also may include a section on abolitionism, but this remains to be determined. Part of the magnitude of the theme is determining exactly how to discuss slavery as an energetic matter. The term "energy slave" is widely used in contemporary energy discourse to describe the energetic equivalent of a human being. Bob Johnson, quoting J. R. McNeil, writes, "the average global citizen has come to depend on twenty 'energy slaves,' or about '20 human equivalents working 24 hours a day, 365 days a year,' to support the world economy and the material standards of living it makes possible" (971). It is, thus, not difficult to draw a connection between slavery and energy, but in doing so, one must be carful not to bracket considerations of race and human rights and thereby reduce slavery to a purely energetic issue. In chapter four, as will be seen, I discuss relations between white settlers and Native Americans in terms of the categories of order and disorder as they pertain to energy. Doing so requires that disclaimers be introduced, lest my reading seem reductive of a very important part of American

history. I will need more time for reflection in order to arrive at a better method of balancing the competing claims of energy and race relations for a future discussion of slavery as another example of nineteenth-century work and waste.

My fourth chapter, "Manifest Entropy," continues to look at energy on the scale of human action, but rather than using the terms of work and waste, it uses those of order and disorder. For as atomic physicists would come to understand in the 1870s, work is a way to order the world, and waste, another way to describe disorder. This chapter thus focuses on a series of texts that represent America's Western frontier as a site of growing disorder. Read through the lens of René Girard's theory of mimetic violence, theses texts suggest that, in the absence of all cultural restraints, human relations tend towards disorder. This disorder manifests in two ways: in the phenomenon of doubles, in which antagonists mirror one another in reciprocal violence, and in the phenomenon of single individuals playing opposing roles in conflictual dynamics. In both forms of disorder, what is at stake is the loss of an ordering principle of difference that justified the settling of the land as a movement of progress, a loss that creates a state of social chaos. The chapter begins by identifying the phenomenon of doubles in Robert Montgomery Bird's *Nick of the Woods* (1837) in which white settlers and native Americans become identical in reciprocal violence. This section contains a short detour in which the reciprocal violence of the southern blood feud as represented in Mark Twain's *Adventures of Huckleberry Finn* (1884) and *Life on the Mississippi* (1883) is used to help elucidate the chaotic nature of the frontier violence in question. The chapter then looks at Twain's account of J.A. Slade in *Roughing It* (1872) as that of an individual playing the opposing roles of outlaw and administrator of vigilante justice on the Colorado frontier. Finally, the chapter looks at a source book of Twain's, Thomas Josiah Dimsdale's *The Vigilantes of Montana* (1866), which situates the historical Slade within a larger

conflict between outlaws and administrators of vigilante justice along the Montana frontier, a conflict that leads to a state of reciprocal violence and the social chaos that it entails. These texts take as their starting point the modern experiment of discarding old socio-political forms to clear the way for a new social order. By suggesting that, in the absence of such forms, human relations tend towards disorder, they add to the chorus of anxiety over the trajectory of the modern world.

The texts that are the focus of chapters two through four all contributed to the "cultural field" that created the idea of energy as it came to be conceived in classical thermodynamics. They did so by addressing themes and expressing values that added to the urgency of certain problematics within the cultural whole of which science was an integral part. It is for this reason, rather than any simplistic one-way arrow of influence, that certain ideas are present in both the literature and science of the period. And far from resulting in redundancy, the variable treatments that these ideas received in literary and scientific form reveal different, though complementary, dimensions of the problematics with which the cultural whole was concerned. Read along side one another, they afford a far more comprehensive picture of the "cultural field" that produced them than if they are viewed separately. Together, they create a picture of a "cultural field" of technological, theoretical and social innovation that is fraught with tension and contradiction, whether it be understood in terms of conservation and dissipation, work and waste, or order and disorder.

Energy and the Humanities

My thesis contributes to three main bodies of scholarship. First, it adds to the research being done on the relationship between literature and classical thermodynamics. Bruce Clarke writes about this relationship with regards to Victorian and British modernist literature in *Energy Forms: Allegory and Science in the Era of Classical Thermodynamics* (2001). Barri Gold also writes about this relationship with regards to Victorian literature in *ThermoPoetics: Energy in*

Victorian Literature and Science (2010). To a certain extent, the fact that there has not been a corresponding amount of critical attention paid to the relationship of American literature to classical thermodynamics is understandable. Thermodynamics, as a science, emerged out of Britain and continental Europe in the Victorian era, so it makes sense that Victorianists and British modernists would take it up as a critical focus. And yet much of the technological and social innovation that permeated the "cultural field" out of which thermodynamics emerged was shared by Brits, Europeans and Americans alike. New technological and social formations gave birth to new pressing questions and concerns, and Americans, like their British and European counterparts, responded to them from within the parameters of their historical situation. Just as Gold can argue that "Tennyson can be said to have discovered—poetically—not only the terms, but also the principles and processes of the nascent science of energy physics" (39-40), so Eric Wilson can argue that Emerson "anticipated the determination that matter is continuous energy while scientists were in the process of establishing this fact" (92). These thinkers were able to do what these critics are describing as a result of their immersion in a "cultural field" defined, in part, by what Serres calls "[a] revolution operating on *matter*" (56). This revolution was taking place in the furnaces of steam engines, as Perkins pointed out to Emerson in Liverpool in 1833. Sharing a "cultural field" characterized by such technological innovation, as well as the social innovation that, in so many ways, defines industrial modernity, puts Victorian and nineteenth-century American writers an equal distance from the scientific thought that emerged alongside said innovation. As such, my thesis adds a much-needed American dimension to the scholarship on literature and classical thermodynamics.

Secondly, my thesis adds a thermodynamic dimension to the growing research on nineteenth-century American literature and science. In *Aesthetic Materialism: Electricity and American*

Romanticism (2009), Paul Gilmore writes about nineteenth-century American literature and electricity. Christopher Windolph focuses on Emerson and twentieth-century chaos theory in *Emerson's Non-Linear Nature* (2007). Brett Zimmerman writes about Melville and astronomy in *Herman Melville: Stargazer* (1998). Laura Dassow Walls writes about Emerson and science in general in *Emerson's Life in Science: The Culture of Truth* (2003), as does Wilson in *Emerson's Sublime Science* (1999). Similar studies have been undertaken of Thoreau, most notably Walls's *Seeing New Worlds: Henry David Thoreau and Nineteenth-Century Natural Science* (1995). More recently, Branka Arsić has published *Bird Relics: Grief and Vitalism in Thoreau* (2016), which, though it is not about science in the same way as Walls's text, shows how science came to complement Thoreau's mythological understanding of life as a vital process of transformation and renewal. While energy is discussed in several of the aforementioned texts, it is often as an overly romanticized object, describing something closer to the *bildunstrieb* of *naturphilosophie* than the forces of physics and chemistry as they pertain to work. Walls, for example, refers to "the connective energy of divine purpose" (*EL* 5) that Emerson discerned in his Romantic vision of nature. And even when Wilson is describing the electrical experiments of Michael Faraday, dealing with a quantifiable form of physical energy, he describes them as "efforts at incarnating spirit in visible patterns" (49). In a similar manner, Paul Gilmore describes nineteenth-century metaphors of electricity as figurations of "a kind of embodied transcendence" (5). From a thermodynamic perspective, such romanticizing of energy tends, on the one hand, to emphasize the principle of energetic conservation while failing to acknowledge the concomitant principle of dissipation (which did have a spiritual dimension, but a negative one), and on the other hand, to dissociate energy from the world of mechanical work. According to Walls, "[t]he operative division in Emerson's day was not the one that emerged later between science and imagination,"

but the one that pitted "science and literature" against the "'mechanic arts' of labor and material production" (*EL* 10). This division, created by a Romantic culture seeking to displace Newtonian mechanism with vitalist organicism, not only fails to describe Emerson's understanding of the relation of science, technology and literature, as Walls openly admits, but it also fails to describe the relationship of those terms within the "cultural field" that I am attempting to depict. For the energy of classical thermodynamics was inconceivable without steam technology and the profit motive of industrial capitalism, just as energy today is unthinkable outside the same world of "labor and material production." My thesis thus resituates energy within the unromantic world of work, dissipative heat and disorder, adding a much-needed thermodynamic dimension to the growing scholarship on nineteenth-century American literature and science.

Finally, my thesis contributes to the emerging field of Energy Humanities. Scholars in this field have begun to redefine modernity by linking it to the material revolution that was unleashed when fossil fuels became a global energy source. These scholars are interested in understanding the radical changes in both material and subjective conditions that the mass consumption of fossilized energy sources has enabled, with an ultimate view to addressing the crisis of global warming and environmental degradation. The majority of the literature that has emerged thus far has been heavily focused on the twentieth and twenty-first century consumption of oil. Titles such as Stephanie LeMenager's *Living Oil: Petroleum Culture in the American Century* (2014), and Jon Gordon's *Unsustainable Oil: Facts, Counter-Facts and Fictions* (2015), make this clear. While nineteenth-century coal consumption does receive some focus, such as in Bob Johnson's *Carbon Nation* (2014), it is underrepresented. While my work does discuss coal, its central aim is not to rectify this underrepresentation but to look at energy in a different register. Rather than focusing on energy as a material given, my work focuses on energy as the "hybrid" creation of a

"cultural field" characterized by technological and social innovation and the many contradictions arising therefrom. This is not, in any way, to deny the material reality of energy sources such as coal and oil, or their central importance to the project of modernity, but to look, besides, at the possibilities for and limitations to human action that the creation of energy as a universal category proscribed, whether scientifically, through the Janus-faced laws of thermodynamics, or humanistically, through literature. A better understanding of these possibilities and limitations as they have been embedded in the concept of energy since the era of classical thermodynamics will be a helpful addition to a body of scholarship seeking to identify both modernity's possibility and limitation with the consumption of energy.

It is my hope that, besides adding to these three bodies of scholarship, my thesis will also help make a case for the importance of literature to any kind of full cultural understanding. Such an understanding is essential to us presently as we careen towards a "hot house" earth as a result of our gross energy dependencies. Science, alone, cannot fix this problem because science tells us nothing about the beliefs and values that inform human behaviour. It is to literature, and other kinds of humanistic expression, that we must look to arrive at a deeper understanding of such phenomena that lie outside the reach of mathematical or empirical measure. For just as the body of nineteenth-century literature that I have chosen as a focus for this thesis reveals beliefs and values that contributed to the "cultural field" out of which thermodynamic energy emerged as a quantifiable phenomenon, so literature, past and present, can reveal the values and beliefs that contributed to the "cultural field" out of which global warming has emerged as a quantifiable phenomenon. In this way, science and literature complement one another. The neglect of one and sole reliance on the other risks obscuring our understanding of the "cultural field" in which we are all actors.

Chapter One: The Monster of Energy

"This world: a monster of energy"—Nietzsche, *The Will to Power*

In *Life on the Mississippi* (1883), Mark Twain refers to the nineteenth century as "our *energetic* days" (231 my emphasis). The reference is made in the context of a contrast between the Mississippi River of modernity and that of the preceding centuries, prior to the industrial development of the Mississippi Valley. To get an idea of this contrast, it is not necessary to go back to the days of adventurers like De Soto and La Salle, as Twain does in recounting the history of his beloved river. Charles Sellers notes that, prior to the War of 1812, "[t]he market could not gain headway along the Mississippi-Ohio river system" because "the farmer's products had to be rafted hundreds of miles down to New Orleans and the store goods laboriously rowed back upriver in keelboats" (131). After the war, however, "a steamboat first demonstrated upriver feasibility" (131). And "[b]y 1820 sixty-nine of these vessels were operating on western waters, and within a decade there were hundreds" (131-132). The arrival of industrial culture in the western wilderness thus marked the arrival of new energy in two important and intimately related ways, both of which are reflected in Twain's description: the energy of an enterprising humanity, and the redirected energies of nature harnessed by the inventions of humanity for the purposes of commercial progress.

The modern invention of the steamboat thus marks a point of intersection between "nature" and "society," equally transforming the energy of human enterprise and that of dynamic heat. It is, therefore, a site of hybridity or monstrosity, where what Bruno Latour calls the great "modern divide" (*WHNBM* 13) is crossed. According to Latour, modernity is defined by a "purification" constitutive of "two entirely distinct ontological zones: that of human beings on the one hand; that of nonhumans on the other" (10-11). To the former, the moderns relegate things such as art,

politics, economics, religion, defining all such phenomena as "subjective" or "social." To the latter, the moderns relegate all of the organic and inorganic material of the world, defining it as "objective," or "natural." This "purification" is, however, only half of the modern story. Latour argues that, beneath this official divide, the creation and "proliferation of hybrids" (1) abounds. In other words, despite the theoretical pretension to "purification," the creatures that populate the modern world are all "quasi-objects" and "quasi-subjects," "hybrids of nature and culture" (10) that cannot be properly situated due to the monstrous ways in which they blend phenomena from both reified "zones." This is the work of "translation" or "mediation" which, when permitted to appear in full view, reveals that the subjective and objective, or social and natural, are always implicated in one another in "networks" and can only be distinguished absolutely in abstraction, but never in practice. Through the mediation of the steamboat, energy, an object of nineteenth-century science, and therefore, of the modern world, is revealed to be the product of just such a "network,"[4] one that monstrously combines the natural and social, the objective and subjective, conjoining such seemingly disparate phenomena as the steam engine and the market economy, dissipative heat and dissipative humanity. Twain's "energetic days," marked by the proliferation of the steamboat on the Mississippi's "western waters," are, thus, modern in name only.

The focus of this chapter is the "hybrid" character of the principle of energy formulated by nineteenth-century classical thermodynamics. Throughout the 1850s and 60s, this principle emerged as one of the "great generalization[s]" (Tait 265) of nineteenth-century science and society, translating diverse fields of knowledge and experience. After briefly examining this principle and some of the "translation[s]" it performed, this chapter will look at the manner in

[4] Because, in this section, I am discussing Latour's concept of the "hybrid," I am also using his concept of the "network." Throughout the rest of the thesis, however, I have opted to use Katherine's Hayles's concept of the "cultural field." Though, as I point out in the Introduction, they describe very similar things.

which Melville takes up the theme of a "hybrid" energetic principle in his final novel, *The Confidence-Man* (1857). Written the same decade in which the doctrines of thermodynamics were being discussed and formulated in scientific journals and societies, *The Confidence-Man* presents an allegory in which the "hybrid" character of thermodynamic energy is dramatized through the story of a Mississippi steamboat trip. The novel will be treated as both an example of a greater socio-cultural trend of energetic generalization as well as a literary object in its own right. The chapter, a "hybrid" itself, will, therefore, mix socio-cultural history and literary criticism, using the former to establish a trend of energetic generalization that will be used to support arguments in subsequent chapters, and the latter to illuminate a previously undetected and yet fundamental component of the final novel Melville published in his lifetime.

Nineteenth-Century Energy

While the concept of energy, gravitational and kinetic, played a key role in Newtonian dynamics (Prigogine & Stengers 69), the conceptual purchase of the term was considerably lesser than what it would become for nineteenth-century scientists. From expressing variables in the laws of resting and moving bodies (107), the term "energy" came to embrace such distinct physical forces as kinetic energy, potential-gravitational energy, electricity, magnetism, chemical combustion and heat, bringing together the work of scientists from diverse fields. When the term came to be thus widely employed mid-century by thinkers such as William Thomson, one of the main metaphors of nineteenth-century scientific thought was established: energy, its conversion, conservation and inevitable dissipation, was to be seen in all physical phenomena. This marked the creation of a natural philosophy capable of explaining everything from the physical processes at work in the steam engine to those at work in the cosmos at large. Furthermore, the analogical reasoning so prevalent in nineteenth-century thought facilitated a meaningful parallel between

the physical processes of nature and the moral and social processes of humanity. Living under the sign of Kant's "Copernican Revolution," there was an abyss to be crossed. Thus, Emerson argued, "[e]very natural fact is a symbol of some spiritual fact" (*Nature* 28). Energy became just such a "symbol," or two-sided "fact." As Robert Lindsay puts it, "[i]f we can find a single word to represent an idea which applies to every element in our existence in a way that makes us feel we have a genuine grasp of it, we have achieved something economical and powerful. This is what has happened with the idea expressed by the word energy. *No other concept has so unified our understanding of experience*" (qtd. in Smil 3 my emphasis).

This energetic generalization was possible, in part, due to the simplicity of the new energetic laws. Einstein wrote, in reference to those laws, "[a] theory is more impressive the greater the simplicity of its premises is, the more different kinds of things it relates, and the more extended its area of applicability" (qtd.in Kondepudi 4). The laws of thermodynamics are premised on the principles of conversion, conservation and dissipation, and according to Einstein, it is precisely the "simplicity" of these premises that gives the laws their "extended . . . area of applicability." And yet, it would be a mistake to understand this "applicability" too simplistically. As Latour argues, objective fact is not discovered by science, but produced through complex "networks" of "mediation" and "translation." This does not make it any less objective; it just takes into account the many processes involved in arriving at objectivity. For instance, the laws of thermodynamics were derived, in part, from Sadi Carnot's theoretical work on the heat engine, a human invention inextricably connected to the technological and commercial practices of the industrial revolution. This derivation made early sociologist of science J. G. Crowther call thermodynamics "the finest cultural expression of the age of steam" (257). Crowther also points to the indicator diagram conceived by James Watt and John Southern to measure changes in the pressure and volume of

steam in an engine's cylinder as a factor in the emergence of thermodynamics. He argues that scientists "derived the science of thermodynamics from the indicator diagrams and other data put before them by profit-seeking engineers" (260). Then, linking the indicator diagram back to the steam engine, he writes, "[i]n a large degree, indicator diagrams were invented and drawn by the *steam-engine*, and presented to scientists for their consideration afterwards" (260). The natural laws of thermodynamics were mediated by essential points of social praxis such as engineering and commerce. As such, their formulation cannot be conceived as the discovery of previously overlooked facts whose widespread applicability is just a matter of juxtaposing newly established scientific principles onto diverse phenomena. The laws of thermodynamics gave new form to the knowledge and experience obtained through diverse domains, both natural and social, from those aforementioned to the Presbyterian theology that aided Thomson in his early sketches of the first and second laws. Analogical reasoning may well have followed the establishment of those laws. But the laws, themselves, were not of the Mosaic kind: they did not fall from the sky. They too involved analogical reasoning.

The Queen of the Sciences and the Arrow of Time

The Natural Theology of William Paley, Anglican Archdeacon of Carlisle, was consonant with a Newtonian world view according to which the cosmos was static and stable, operating benevolently in accordance with the axioms of classical mechanics. In contrast to this widely held position, the evangelical Presbyterianism of Rev. Thomas Chalmers identified a seed of destruction in nature. In a sermon titled "The Transitory Nature of Visible Things," Chalmers wrote, "[t]his earth will be burnt up. The light of yonder sun will be extinguished. These stars will cease from their twinkling. The heavens will pass away as a scroll" (264). In opposition to the eternal nature of a mechanistic cosmos, Chalmers proclaimed the "approaching dissolution"

of nature's economies, arguing that "nature contains within itself the rudiments of decay" (265). He thereby introduced into creation what physicists call the "arrow of time." According to Chalmers, only the uncreated God was eternal and thus capable of renewing the ebbing and convulsing life of a fallen and failing world (264).

Chalmers was a friend of Thomson's family, writing to the latter's father on the occasion of his son's appointment to the Glasgow chair of natural philosophy, and expressing the hope that the young Thomson would be guided by the principle that "a sound faith and a sound [natural] philosophy are one" (qtd.in Smith *CE* 25). When, in 1852, Thomson formulated the doctrine of "The Universal Dissipation of Mechanical Energy," setting a definite limit to nature's usefulness and to the march of human progress, "Presbyterian students … could read the doctrine as fully compatible with a traditional vision of a fallen world which was subject, like unregenerate souls, to depravity and death" (101-102). Thus, Thomson adhered to Chalmers' principle, to a degree. While nature was not described as being destined for "decay," its indestructible energies were destined to a state of cosmic paralysis, in the face of which man's existence, save for redeeming grace, was one of infinite futility. As Thomson and Tait would write ten years later in "Energy," "dark indeed would be the prospects of the human race if unillumined by that light which reveals 'new heavens and a new earth'" (607). [5]

It should not be inferred from this that Chalmers's theology was the central factor in the formulation of Thomson's doctrine of energetic dissipation. Thomson had been grappling with the competing theories of Carnot and James Prescott Joule about the nature of heat and work. Carnot argued for the necessity of a temperature gradient and the re-establishment of thermal

[5] It is worth noting that "Energy" appeared in the publication *Good Words*, a periodical dedicated to religious, rather than scientific, thought.

equilibrium for the production of motive power, writing in his "Reflections on the Motive Power of Heat" that "wherever there is a difference of temperature the production of motive power is possible" (10). Though he speculated on the possibilities of an ideal engine, creating what is known as the Carnot-cycle, this cycle was only theoretical and impossible to realize. In reality, the re-establishment of thermal equilibrium inevitably resulted in the loss of energy as heat through processes such as friction and conduction. In contrast to Carnot's position, Joule argued for a direct equivalence between work and heat without any necessary loss. These two positions reveal rough sketches of the laws of energy's dissipation and conservation, which, at first glance, seem so contradictory. Yet, according to Smith's account of this impasse,[6] it was precisely Thomson's theological imagination that helped him to reconcile the two positions. Thomson came to the conclusion that, though energy could not be destroyed, save by an act of God (1st law), it could become dissipated and thus unavailable for all human purposes (2nd law) (Smith *CE* 110). Though "the principle of dissipation" identified by Thomson was not first and foremost theological, "[his] commitment to it as an inviolable axiom received its extraordinary strength from the axiom's place in his theology of nature" (Smith & Wise 501). Thus, while physical science, along with mechanical engineering and commerce, created the foundation for the emergence of the science of thermodynamics, the two laws may not have been formulated as they were had it not been for William Thomson's Presbyterian faith. Ironically, the principle of evil as defined by Calvinist theology represents yet another point of mediation on the path to scientific objectivity.

[6] If it seems as though the author's reliance on Smith as a reference is excessive, it is due to the fact that, unlike scholarship on Darwin and Evolution, which is abundant, scholarship on William Thomson and Thermodynamics is rather scant. Smith is the foremost scholar on Thomson and his role in the creation of the science of energy, having authored and co-authored many works on the subject.

By unifying such diverse fields of knowledge and experience, the new science of energy was able to unify further phenomena as its principles became central metaphors of late nineteenth-century thought. This wide "area of applicability" could only increase with Ludwig Boltzmann's reinterpretation of entropy as a measure of disorder in the 1870s. And yet any interpretation of the applicability of the natural laws of thermodynamics to the social phenomena of human history that suggests a one-way relationship amounting to scientism plainly ignores the social phenomena that contributed to the establishment of those natural laws. As we have seen, such phenomena ranged from the technical and commercial practices of "profit-seeking engineers" to the religious beliefs of natural philosophers. In subsequent chapters, other forms of social phenomena that, through literature, contributed to the cultural field from which the science of energy emerged will be discussed. The rest of this chapter will focus on Melville's engagement with the theme of a hybrid energetic principle in *The Confidence-Man.* Writing the novel in the very years that saw the establishment of the science of thermodynamics, Melville presents a universe in which, much like Thomson's, energy is a monster of cosmic proportions, embracing the natural and the social world(s) of modern ontology.

Evil, Energy, and the "Imaginative Universe" of *The Confidence-Man*

Melville's concern with the problem of evil is well established. As Jonathan Cook argues, "in his preoccupation with evil we may class [Melville] in company with some of the leading philosophical and creative minds of his time" (*IM* 273). Focusing on *Moby-Dick,* Cook notes that "the problem of evil . . . stands at the center of its imaginative universe" (4). The same could be said about the "imaginative universe" of *The Confidence-Man*. While this has been fairly well understood for some time, it has remained a nebulous hypothesis, needing further clarification. As early as 1954 Elizabeth Foster argued that "*The Confidence-Man* is Melville's most ironic

and bitter presentment of his half-mystical apprehension of evil at the heart of things" (xv). She further defined Melville's object in the novel as that of "universal malice" (xiii). This line of interpretation has been supported by the many critics that have identified the novel's titular character in some way with the devil, starting with John W. Shroeder, who, according to Foster, was the first to identify "the diabolical nature of the Confidence-Man" (v). Yet Foster's original insight, as we see, is coupled with confusion. By referring to Melville's "apprehension of evil" as "half-mystical," she projects this confusion back onto the author, thereby justifying it critically. Elsewhere she refers to evil in the novel as being shrouded in an "obscurity that was perhaps intentional" (xiii). The identification of the Confidence-Man with the devil has suffered no less from confusion as critics have identified, in the character, attributes of God alongside those of Satan. Stephen Matterson writes, "[a]s readers, we are left wondering if the Confidence Man is God or the Devil" (xxxiii). Bruce Franklin, who takes this ambiguity a step further, argues that, "Christ in *The Confidence-Man* merges into Satan" (xxvii). Cook, going even further, writes, "the characterization of the Confidence Man suggests that good and evil, Christ and Antichrist, are ultimately part of one divine entity" (*SA* 10). As recently as 2016, Matt Seybold has argued that this question "still dominates the critical conversation" (75). Thus, the nature of evil in *The Confidence-Man* has remained unclear.

While evil, in *The Confidence-Man*, takes on several forms, at the center of the "imaginative universe" of the novel, and unifying those forms, is the principle of energetic dissipation that emerged in the 1850s as a new and particularly modern form of "universal malice." William Thomson's 1852 article, "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy," a founding document of thermodynamics, established a new cosmology predicting the eventual exhaustion of the solar energy on which both terrestrial life and industrial civilization

depend by projecting onto the cosmos a principle of energetic loss gleaned from the study of the steam engine. Mediating between the steam engine and the cosmos for Thomson was, as we have already seen, a Calvinist conviction in the doctrine of a fallen world, making this cosmic vision at once physical and moral. To the Presbyterian Thomson, dissipating solar energy was the physical corollary of a dissipated human race. Engaging with these ideas in *The Confidence-Man*, Melville represents evil as a single ubiquitous principle of loss governing reality, both physically and morally, at the cosmic, human and natural levels, represented most fully in the symbol of a dying sun.

The novel is structured so that solar symbolism at the beginning and end of the text creates a cosmic frame for all the human action that takes place aboard the *Fidele*. The human and natural evil that form the primary subjects of debate between the Confidence-Man and his interlocutors aboard the steamship exist within a greater cosmic paradigm and are often described in such a way that they allude to the cosmic evil that is Melville's larger theme. The Confidence-Man, ever-endorsing a facile optimism that represents human nature as well as the natural world as wholly benign and thus favorable to human flourishing, obfuscates the existence of human and natural evil, and in doing so, the cosmic evil that consolidates them. If he is the devil, then his diabolical plan in the novel is to perform on the world what Baudelaire would a few years later identify as the devil's greatest con, writing, "never forget when you hear people boasting of our progress in enlightenment, that one of the devil's best ruses is to persuade you that he does not exist" (61). By obfuscating the evil that manifests as a principle of loss at the cosmic, human and natural levels, the Confidence-Man, like Baudelaire's devil, promotes a vision of humanist self-reliance which, as other critics have noted, represents one of Melville's prime targets as an author (Radloff 1).

The remainder of this chapter is divided into three sections. The first section contains a brief discussion of the work of William Thomson and the possibility that it had a direct influence on Melville during the 1850s. This section also identifies certain critical impasses that a connection between Melville and Thomson would help resolve. The second section contains a discussion of what I have called the "cosmic frame" of *The Confidence-Man*. This consists of a close reading of important parts of the beginning and end of the text that, through solar symbolism, reveal the bigger picture of cosmic evil with which the novel is ultimately concerned. Finally, the third section analyzes parts of the human drama that play out aboard the *Fidele*, especially focusing on how they are connected, throughout the text, to the greater cosmic picture. This connection is maintained, first, through the symbol of the steamboat which depends on fossilized solar energy in the form of coal for the power of movement, and secondly, on the manner in which forms of human and natural evil are described in ways that allude to the greater cosmic evil framing the text.

William Thom(p)son

Melville published *The Confidence-Man* in 1857, five years after Thomson gave a paper to the Royal Society of Edinburgh (RSE) titled "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy." The paper was published the same year in *Philosophical Magazine*, described as "the corporate journal for all British science" (Brock & Meadows 99). The paper expanded upon a previous one titled "On the Dynamical Theory of Heat" (1851), also published in *Philosophical Magazine*, in which Thomson sought to reconcile the various discoveries of Carnot and Joule on the nature of work and heat. While the 1851 paper dealt primarily with the loss of work in steam engines, the 1852 paper represented the beginning of Thomson's "cosmological synthesis" (Smith & Wise 525). In other words, in going from 1851 to

1852, Thomson "transform[ed] the problem of 'loss' of available energy from an engineering issue into a universal cosmological one with clearly defined theological support" (497). The dissipation axiom of classical thermodynamics was thenceforth for Thomson inextricably linked to the fact of humanity's spiritually fallen state, a state that, through Thomson's commitment to a Calvinist theology of nature, was projected onto the cosmos at large.

As early as 1853, news of Thomson's views appeared in *Scientific American*, a periodical published out of New York. An anonymous article, titled "Heat of the Sun—Will it Ever Decay," excerpted sections of a Presidential address by William Hopkins to the British Association for the Advancement of Science (BAAS) in which the former states, "Professor Thomson concludes that the dispersion of heat, and consequently of physical energy from the sun and stars into space, without any recognizable means of re-concentration, is the existing order of nature" (74). He further adds, "[i]n such case the heat of the sun must ultimately be diminished, and the physical condition of the earth therefore altered" (74). This represented a nascent formulation of what would soon become the late Victorian myth of universal heat death. While it cannot be ascertained beyond a doubt that Melville read this, so much about Melville points to the belief that he would have taken a serious interest in such a scientific development, and the possibility was certainly there. In *Herman Melville: Stargazer* (1998), Brett Zimmerman makes a strong case for the importance of the celestial bodies in Melville's "imaginative universe." While his central focus is not the sun, he points to a 1968 PhD dissertation by Martha Frances Nichols titled *Sun Imagery in the Novels of Herman Melville*, which argues that, in his work, "the sun is significant enough as a symbol to lead the reader to some of Melville's essential meanings" (1). In making his argument for Melville's astronomical acumen, Zimmerman then asks "[h]ow well did Melville keep up with contemporary discoveries, if at all?" (3). Among the possible sources

available to Melville for contemporary astronomical knowledge that Zimmerman lists are the "newspapers in the reading room of the New York Society Library" that, according to Merrell Davis (qtd in Zimmerman 13), Melville regularly consumed. Melville's interest in astronomical bodies and his habit of consuming periodicals as described above makes it seem quite likely that he could have been aware of Thomson's views on the impending solar disaster.[7]

The connection that I am positing between *The Confidence-Man* and the contemporaneously emerging science of thermodynamics, especially through the work of William Thomson, answers some important questions that have lingered in the critical history of the novel. In a "Historical Note" to the 1984 Northwestern Newberry edition of the novel, Branch et al write: "[t]he idea of writing a book, or at first perhaps only some sketches, about a confidence man … was suggested to Melville by the career of a notorious petty swindler with various pseudonyms—notably 'William Thompson'—who had been given the sobriquet of the 'original confidence man' and whose exploits in New York City had been widely reported by the press in 1849" (277). Having stated this, the authors admit that "two basic matters" remain unexplained: "how or when it occurred to him to put his Confidence Man aboard a Mississippi steamboat rather than keep him, like his prototype, in an eastern city" and "when in his planning and writing the book Melville enlarged his Confidence Man to a character of wider social and even cosmic significance than the newspaper original" (278). Now, it could, of course, be a simple coincidence that one of Melville's sources for the Confidence-Man shares a name with the man who was so instrumental in formulating the laws of thermodynamics at more or less the same time. It must have been a common enough name, and there is the matter of the "p" in the name of the criminal that is

[7] Something that indicates that Melville may actually have read *Scientific American* is his inclusion of the strange life-preserving seat in the final scene of *The Confidence-Man.* In 1854, the periodical published an article titled "Thompson's Life Preserving Seat," about just such an object.

absent in that of the physicist. And yet, the textual evidence of an energetic preoccupation in the novel would seem to suggest that something more than coincidence is involved. Furthermore, the allusion to one William Thomson by another can explain, if not the "when," at least the "how" or "why" of those "two basic matters." For the steamboat was one of the nineteenth-century forms taken by the steam engine, the starting point of the science of thermodynamics. Thomson's 1851 paper "On the Dynamical Theory of Heat," dealing with the work of Carnot and Joule, primarily addressed the loss of work in steam engines. And Carnot's own work addressed, not only steam engines, but the steamships used to navigate "the great rivers of the old and new continents" (5). The steamboat is thus a fit symbol for the new economy of energy that was emerging in the 1850s through the work of Thomson and others. Furthermore, the movement from local to social to cosmic significance identified by Branch et al. mirrors exactly the leap made by Thomson between 1851 and 1852 when he projected the axiom of dissipation from the steam engine and the industrial economy onto the cosmos through theological mediation. The cosmic significance of Melville's Confidence-Man would then be result of the cosmic dimensions of the principle of loss identified by physicists in the 1850s. The universe itself had been unmasked as the ultimate swindler, a cosmic reflection of human iniquity, and a universal mockery of the confidence of men.

Such word, or rather, name-play, would, of course, make Melville himself something of a confidence-man. But critics have long established this. Stephen Matterson, in his introduction to a 1990 Penguin edition of the novel, quotes an 1856 article from *Dublin University Magazine*, which, referring to Melville, comments upon "the mystification which this remarkable author dearly loves to indulge in from the first page to the last of his works" (xvi). And Matterson himself, commenting upon the "steadily growing awareness of the importance of masquerade

and trickery in American literature," notes that Melville's final novel is "central to this tradition" (xv). Bruce Franklin argues that "[m]any, many of the words of *The Confidence-Man*, including its title, are significant puns" (xvii). The full title is *The Confidence-Man: His Masquerade*: if there is a pun what could its meaning be? Perhaps the title is not simply referring to the many masks donned by the Confidence-Man throughout the text, but to the Confidence-Man himself as a mask hiding what Nichols calls the text's "essential meaning[]," which, if my reading is correct, is connected to predictions that were made in the early 1850s by William Thomson, the physicist, about the life of the sun, and the consequences of these predictions for humanity and its enlightened self-confidence. This would agree with Nichols's claim that many of Melville's "essential meanings" are bound up in the symbol of the sun, which, in *The Confidence-Man*, cosmically frames the human drama taking place aboard a Mississippi steamboat.

The Cosmic Frame

The sun represents the *alpha* and *omega* of *The Confidence-Man*: the novel begins at sunrise at a steam boat landing in St. Louis and ends with a symbolic representation of solar death. All the action of the text takes place between these two reference points as the Confidence-Man "leads mankind through an extinct universe to his lightless kingdom" (Shroeder 312). Shroeder frames this as strictly the work of the devil, identifying the Confidence-Man with the traditional arch-fiend of Christianity. Complicating but not necessarily refuting this interpretation, I would like to suggest that what is really leading "mankind" to a "lightless kingdom" is an unsustainable form of light (and heat), in which they have foolishly[8] placed their faith. The Confidence-Man is the spokesman, or representative, of this, their object of faith. Other critics have noted that, as in

[8] The action of the text takes place on April Fool's Day.

Moby-Dick, Melville, in *The Confidence-Man*, employs the symbol of "world-ship" (Parker ix). The *Fidele*, like the *Pequod*, represents the world, but, what is more, the world of the "faithful." The object of the faith in question is not, however, the Christian God. Rather, as the Confidence-Man in his various disguises obfuscates the human and natural evil inherent in creation, the faith of the world is placed therein, which ultimately means in the energy sustaining creation centered in the sun. The steam boat is an apt symbol for this world because its movement is sustained by fossilized solar energy in the form of coal. The Confidence-Man, in his first form, proceeding from the sun like "Manco Capac at the lake Titicaca" (Melville *CM* 1), embodies this energy,[9] and by attempting to elicit confidence, or faith therein, he obfuscates the cosmic evil he secretly represents. When Melville later refers to the *Fidele* taking its course down the Mississippi with "pagan abandonment and assurance" (6), he is alluding to a cult of sun-worshippers whose faith has abandoned them to, and placed their confidence in, a finite energy source, of which the Confidence-Man is the duplicitous avatar.

This identification of the Confidence-Man with a cosmic evil that is physically manifested in dissipating solar energy does not mean that he is not the devil, or, at least, devil-like. There are striking similarities between the two characterizations. Described in his cosmopolitan form as "seeming to dispense a sort of morning through the night" (207), and thus as a "seeming" source of light, he bears obvious resemblance to Lucifer, the light-bearer, also, at times, called the morning star. Like Lucifer, whose light was extinguished after his fall from heaven, the light that the Confidence-Man represents will eventually lead into darkness when the sun expires. The devil has also traditionally been known as a shape-shifter. The literary devils that Melville was

[9]This could help explain the spiritual ambiguity critics have identified in the Confidence-Man. For, energy, in itself, is far from evil, being a creation of God's. But it becomes evil when turned into an object of faith, especially given its dissipative tendency.

most familiar with, such as Milton's Satan and Goethe's Mephistopheles, certainly possess this attribute. In "Melville's Debt to Milton: Inverted Satanic Morphology and Rhetoric in *The Confidence-Man*" (2003), Aaron Urbanczyk identifies Melville's Confidence-Man with Milton's Satan in part through their common morphological character, writing that "Milton's Satan, a figure Melville studied closely and admired, was clearly an influence upon the diabolic, shape-shifting, smoothtongued 'Confidence-Man.' The initial similarity lies in the constant morphing of shape and identity of these two characters" (287). Energy as it was coming to be known in the 1850s as "the capacity to do work" was also something of a shape-shifter, deriving from the sun, and yet taking on a variety of forms such as heat, light and motion and existing potentially in such things as wood, food and coal which could be consumed by humans and machines alike. Accordingly, my reading complicates rather than contradicts those readings that identify the Confidence-Man with the devil.

Upon boarding the *Fidele*, the stranger, who came from the sun, is described as "evenly pursuing the path of duty" (Melville 1). Crosbie Smith notes that, to nineteenth-century scientists and engineers, "duty" represented a "standard measure of engine performance" (*SE* 57). The "path of duty," then, represents the process by which an energy source is turned into work. This "path," appropriately, leads the stranger to the captain's office where a "Wanted sign" offers a reward for "the capture of a mysterious imposter, supposed to have recently arrived from the East" (Melville 1). Superficially, this is clearly a reference to a typical confidence-man. And yet in light of the cosmic theme, that which has "recently arrived from the East" is the sun and its radiant energy. For, the sun rises from the East. The "mysterious imposter" is the radiant energy of the sun which takes on new forms, like coal, to drive the machinery of civilization. It is this energy, in all possible forms, that is "Wanted" so the march of progress can continue unimpeded,

much like the steamboat on its course down the Mississippi. This is the reason the sign is next to the Captain's office: he is the one guiding the world-ship and "wanting" the energy necessary to sustain its movement. Among those gathered around the sign outside the Captain's office are "certain chevaliers" (1). This, as a footnote explains, refers to "*chevaliers d'industrie*," a phrase that, colloquially, means "swindler." These "swindlers" reflect the duplicity of the "mysterious imposter, supposed to have recently arrived from the East" who is wanted as a source of energy. The word "chevalier" literally means "horseman," and its etymology is rooted in "cheval" or "horse." When placed next to the word "industry," whether in text or thought, it connotes the idea of "horsepower." The energy originating in the sun and taking on new forms such as coal to fuel steam engines is translated into horsepower. Energy is "Wanted" as a source of this power, or work. But as Sadi Carnot revealed, "it is impossible entirely to convert heat into work—something is always lost in energetic transformation" (Schnieder and Sagan 39). In other words, in converting energy into horsepower something is always swindled, due to the second law, the universal swindler. As Bruce Clarke succinctly puts it, "the first law's hoarding is subsumed by the second law's theft" ("FTTV" 20). Through this rather elaborate symbolism, Melville is establishing a principle of loss that, spreading from the sun to the human and natural world below, governs reality aboard his "world-ship."

This opening sequence ends with the stranger "lay[ing] motionless" (Melville 4) on the *Fidele*'s deck, having evidently completed his "path of duty." The final description that is given of him is as follows: "like some enchanted man in his grave, happily oblivious of all gossip, whether chiseled or chatted, the deaf and dumb stranger still slept tranquilly, *while now the boat started on her voyage*" (3 my emphasis). There is here a direct correlation made between the exhaustion of the Confidence-Man in this first form and the commencement of the *Fidele*'s

journey. His latent "motion," or "motive power," derived from the sun's heat, has been converted into the power driving the boat. This is all the more apparent in that the second form that he assumes is that of Black Guinea, a character through whom many allusions to coal are made. Black Guinea is first described as carrying a "coal-sifter of a tambourine" (7). A coal sifter is used to separate coal from ash, and thus energy sources from useless matter. He also refers to the sun as "dat good baker" (7) that heats the ground on which he sleeps and in which coal deposits are found. He betrays a dislike of winter (8), as though it presaged the sun's final exhaustion. Finally, his face is described as "glow[ing]" (14) when he receives alms from a merchant by the name of Henry Roberts. All of these allusions associate the Guinea with the principle of energy, specifically as embodied in coal. His color (black) further strengthens this association. When he proffers his list of the Confidence-Man's other disguises, saying that each of them will vouch for him, he is merely stating the Confidence-Man's *modus operandi*, which is to elicit confidence, or faith, in the energy that is temporarily sustaining the world, which, given Melville's choice of a steamboat as metaphor, appropriately, in this case, assumes the form of coal. This is especially obvious in the case of the Confidence-Man's fifth disguise, the "ge'mman wid a big book" (10) who is president and transfer-agent of the Black Rapids Coal Company and who sells coal stock aboard the *Fidele*. But even where no obvious connection to coal, or solar energy, is apparent, the Confidence-Man can always be seen attempting to obfuscate some form of human or natural evil that is formally analogous to the cosmic evil of energetic dissipation.[10] This evil is evident in the case of Guinea through his characterization as "cripple[d]", "deform[ed], and "indigen[t]" (7) and through the warning of the one-legged misanthrope who accuses the former of being "some white operator, betwisted and painted up for a decoy" (10). This statement is meant to identify

[10] This will be discussed in greater detail in the next section.

Guinea with the Confidence-Man in his first form, the flaxen-haired stranger in cream-colors who comes from the sun, the astronomical body that, in the 1850s, was identified with energetic finitude.

Preliminary predictions of the cosmological fate that came to be known as "heat death" were made by Thomson as early as 1851. In an early draft of the "Dynamical Theory of Heat," he wrote, "I believe that no physical action can ever restore the heat emitted from the sun, and that this source is not inexhaustible" (Smith "WT" 282). By the early 1860s, he would be publishing works such as "On the Age of the Sun's Heat" (1862) in which he would conclude, rather ominously, that "inhabitants of the earth cannot continue to enjoy the light and heat essential to their life, for many million years longer, unless sources now unknown to us are prepared in the great storehouse of creation" (393). This raised the fearsome spectre of civilizational death for late nineteenth-century minds, contributing, undoubtedly, to the pessimistic ethos of the *fin du siècle* at the century's terminus. Barri Gold writes:

> William Thomson's 1862 announcement in *MacMillan's Magazine* of "the age of the sun's heat" triggered a widespread cultural anxiety that encompassed no less than the cooling of the world and the death of all things as the sun burned itself out. And while such an event may have been predicted "by poets and lunatics from time immemorial," the second law of thermodynamics brought new urgency and new form to this ancient fear. (44)

It may, of course, be asked, why the prediction of an event millions of years away would cause such "cultural anxiety." The answer is that the prospect of heat death, though millions of years away, threatened, *a priori*, to render all human effort and work ultimately meaningless. This

same anxiety can be seen in the twentieth and twenty-first century in the work of philosophers such as Jean-Francois Lyotard and Ray Brassier. The former, in "Can Thought go on Without a Body?" (1988), discusses the prospect of heat death in relation to philosophy's quest for truth, writing "[t]hat in my view, is the sole serious question to face humanity today. In comparison everything else seems insignificant. Wars, conflicts, political tension, shifts in opinion, philosophical debates, even passions—everything's dead already if this infinite reserve from which you now draw energy to defer answers, if in short thought as quest, dies out with the sun" (9). Brassier, who, in *Nihil Unbound* (2007), refers to philosophy as "the organon of extinction" (239), takes up Lyotard's thought, writing, "[t]he extinction of the sun is a catastrophe… because it blots out the terrestrial horizon of future possibility relative to which human existence, and hence philosophical questioning, have hitherto oriented themselves" (223). Bringing Freud's death drive into the cosmological picture, he further writes, "the solar catastrophe needs to be grasped as something that has already happened; as the aboriginal trauma driving the history of terrestrial life as an elaborately circuitous detour from stellar death" (223). Created from the elements of stars long dead, terrestrial life, according to Brassier, is a detour to the stellar death of our sun. For both of these philosophers, the death of the sun and its consequences for thought render meaningless the entire frenzied drama of history: "everything's dead already."

Visiting Nathaniel Hawthorne in Liverpool shortly after the completion of *The Confidence-Man*, Melville exclaimed to the former that he had "made up his mind to be annihilated" (Leyda 529). This statement has generally been interpreted as reflecting some sort of personal crisis of Melville's. I would suggest, however, that Melville was expressing something very similar to the fatal sentiments of Lyotard and Brassier. He had just spent a little over a year (from May 1855 to October 1856) writing *The Confidence-Man*, which, as I contend, is an allegory for the cosmic

evil that, in the 1850s, was physically identified with a principle of energetic dissipation. The dissipative tendency of mechanical energy emitted by the sun made it a resource of diminishing returns that ultimately tended towards a final state in which "the earth must again be, unfit for the habitation of man" (Thomson "UT" 514). In the face of this prospect, the business of nineteenth-century America became a farcical delusion, an exercise in futility, masked by a false confidence in the dissipating energy of the world. Melville's determination to be "annihilated" marked his foreswearing of such confidence, a gesture that receives fuller expression in the final chapter of *The Confidence-Man*, his own "organon of extinction."

The final chapter of *The Confidence-Man* contains a symbolic representation of solar death. The chapter opens with the following description: "[i]n the middle of the gentlemen's cabin burned a solar lamp, swung from the ceiling, and whose shade of ground glass was all round fancifully variegated, in transparency, with the image of a horned altar, from which flames rose, alternate with the figure of a robed man, his head encircled by a halo" (Melville 206). The "solar lamp" burning "[i]n the middle of the gentlemen's cabin" represents the sun burning in the middle of the solar system. According to Foster, the images on the shade of the solar lamp represent the Old and New Testaments respectively, the "horned altar" belonging to an episode on Mount Sinai in the Book of Exodus in which Moses receives a decree from God (206). A more convincing argument is that the flaming and "horned altar" represents Satan, or evil, and the haloed figure represents God, or goodness. Their juxtaposition with the energetic orb symbolizes the interrelation of the physics of energy, and, hence, the physical world, with the theological and moral principles of good and evil, an interrelationship that was at the very core of classical thermodynamics. That the shade is described as being "fancifully variegated" with these images suggests that they are fanciful or imaginative ways of conceiving of the corrupt or

fallen state of creation. “Imaginative,” in this case, is not to be taken in any pejorative sense. The very novel is an imaginative rendering of what the science of the period was stating with more “transparency.”

The opening paragraph then states: “[t]he light of this lamp, after dazzlingly striking on marble, snow-white and round—the slab of a centre-table beneath—on all sides went rippling off with ever diminishing distinctness, till, like circles from a stone dropped in water, the rays died dimly away in the furthest nook of the place” (206). This is a symbolic representation of the diffusion of solar energy throughout space, the very process by which the sun’s energy will be exhausted according to classical thermodynamics. The marble table, “snow-white and round,” represents the earth, which is described as receiving a flood of solar light. The “furthest nook of the place” represents the farthest reaches of space, to which this light speeds, forever beyond the reach of man’s utility. The analogy of a stone dropped in water is reminiscent of the experiments conducted by Joule through which he determined the mechanical equivalent of heat by dropping a weight in a vessel of water and measuring the increase in temperature caused by the friction (Schneider and Sagan 40). In this case, the “circles” created by friction are ebbing away into indistinctness as the heat slowly dissipates. If there is any doubt about this interpretation of the “solar lamp,” the next paragraph refers to the “other lamps” in the cabin as “barren planets,” “burnt out from exhaustion,” “true to their place, but not to their function” (Melville 206). This is the description of a solar system in which burnt out stars float in emptiness and a prediction of the fate of our sun, the star at the centre of that system. It is a symbolic representation of the stellar death which, according to Brassier, has already doomed our world.

Following this symbolic representation of a cosmos characterized by energetic dissipation, Melville turns to the significance of this cosmic picture for humanity. An old man is introduced,

who is said to be "[k]eeping his lone vigils beneath his lone lamp" (206). This man represents the old age of Adam, or "mankind," an old age that is at once temporal and energetic. He is described as one who has been "dismissed" from "a thrifty life of activity, from the fields to the fireside" (206-207). In the medieval sense, this would suggest that he has left the active life for the life of contemplation. And yet in the thermodynamic universe of the nineteenth century, which the ship represents, he is merely destined to watch the flames die down and the embers grow cold and turn to ash. Such is to be his contemplation in this world of total action. While the old man is conversing with the Cosmopolitan, the final form assumed by the Confidence-Man, a young boy enters the cabin, described in the following manner: "[a]ll pointed and fluttering, the rags of the little fellow's red flannel shirt, mixed with those of his yellow coat, flamed about him like the painted flames in the robes of a victim in *auto de fe*" (210). He is further described as wearing "a polish of seasoned grime" and his eyes are said to be sparkling "like lustrous sparks in fresh coal" (210). The references to heat and energy are quite abundant in this passage. Not only is the boy described as burning like a "victim in *auto de fe*" (which is also a reference to the novel's cryptic dedication page), but he is also described as covered in what is undoubtedly the residue of coal, the natural combustible that fueled steam engines and the industrial revolution, receiving its store of energy from the dying sun. As a picture of youth consumed by flames and soot, and described as a "victim in *auto de fe*," this seemingly insignificant character recollects, for the old man, the misspent youth and misdirected faith which have brought him to his grim contemplation at this energetic end of days.

Towards the end of their conversation the Cosmopolitan notes to the old man that the solar lamp "begins to burn dimly" (216). Then, in the final scene, he says, "let me extinguish this lamp," and, "[t]he next moment, the wanning light expired, and . . . in the darkness which

ensued, the cosmopolitan kindly led the old man away" (217). It is extremely significant that it is the Confidence-Man in the guise of the Cosmopolitan who finally extinguishes the "solar lamp" and leads the old man away into darkness, for his title alludes to the cosmic significance of the scene. Furthermore, the fact that, beneath his mask, he is a devil-like character supports the idea that universal entropy is in some way a result of the fallen state of humanity and the world. The fate of the old man and those on board the *Fidele* represents the fate of the worldly faithful who, having put their confidence in a "seeming" (207) source of light (Lucifer/solar energy), must, in the end, follow the "prince of this world" (John 14:30) into entropic darkness.

The Human Drama

Within this cosmic frame, the bulk of the text focuses on the drama of human interaction as the Confidence-Man, in his various forms, and facing a variety of interlocutors, attempts to obfuscate the human and natural evil that are corollaries of the cosmic evil that frames the text. Thus, energy as a theme seemingly fades into the background. And yet the connection between the cosmic dimension and the human/natural dimension is represented throughout the text in a variety of ways. The first and most obvious way is through the symbol of the steamboat which uses fossilized solar energy in the form of coal to sustain movement. The *Fidele,* steamboat and "world-ship," is a "hybrid" of nature and society and, through its dependence on coal, reveals the interconnection of the human, natural and cosmic dimensions of the text. Furthermore, because all of the human action takes place on the steamboat, which runs on coal, it can reasonably be argued that solar energy literally fuels the drama of the text, just as its dissipation brings the text to its terminus.

Another way that Melville maintains a connection between the cosmic frame and the human drama of the text is by describing forms of human evil in terms that allude to the greater cosmic

evil. For instance, following the description of the sun as a "golden huzzar flashing his helm on the world" so that "[a]ll things warmed in the landscape leap" (64-65), Melville describes a man "not warmed by the sun" who has been "long tranced into hopelessness" (65). Hopelessness is a form of human evil, and here it is associated with a lack of heat that produces a trance-like state. To describe someone as being in a trance-like state is to describe them as lacking the requisite mechanical energy for human animation. In this case such lack of energy corresponds to a lack of solar heat, so that this man can be said to be experiencing an approximation to a personal heat death. In fact, he is also described as resembling "a plant whose hour seems over" (65). Plants photosynthesize solar energy in order to grow and thrive, and lacking that energy, they die. Thus, the lack of hope is being described in terms that allude to the cosmic evil of energetic dissipation that frames the text. In another instance, the Confidence-Man in his Cosmopolitan form, talking to the solitary bachelor from Missouri, says that "to shun society in any way, evinces a churlish nature—cold, loveless; as, to embrace it, shows one warm and friendly, in fact, sunshiny" (119). Here, sociability and friendship, both human virtues, are described as "warm" and "sunshiny," whereas their opposite, "churlish[ness]," a human evil, is described as "cold, loveless," and, it can be inferred, not so "sunshiny." Thus, just as in the previous example, specific human evil is linked to the greater cosmic evil. Of course, in this latter instance, a deception is occurring in so far as to ground human solidarity in the warmth of the sun is to leave it, ultimately, groundless. It could be argued that, given the cosmic frame of the text, "hopelessness" and "churlish[ness]" are the more realistic dispositions for characters to assume.[11] At the very least, such dispositions do not attempt to obfuscate the human evil that, in the thermodynamic universe of the 1850s, was so intimately connected with the cosmic evil of a dying sun.

[11] Certainly, the one-legged misanthrope is intended to be a voice of truth. But more on this idea later.

But this is precisely what the Confidence-Man does: he spreads human warmth so as to deny evil and move his interlocutors to confidence, but in doing so, he commits the greater evil in so far as all heat must surely dissipate and evil finally be reckoned with, whether at the cosmic or human level. We see this action through the fact that many of his interlocutors are described as cold prior to being moved by him to confidence. For instance, as the herb-doctor, attempting to sell his wares to passengers in one of the *Fidele*'s numerous cabins, he is said to be "insensible to the[] coldness of his auditors, or charitably overlooking it" (72). There is further reference to the "frigid regard of the company" he is addressing (75). It can be inferred from these descriptions that in order to move his interlocutors to confidence in what he is selling,[12] he must transfer to them some human warmth. This makes perfect sense, thermodynamically speaking, in so far as heat is a source of movement, or motive power. There is thus a clear analogy between the heat that is moving the boat and the natural landscape, coming from the sun, and the heat that is moving passengers to confidence, coming from the Confidence-Man, who comes from the sun. In another instance, as John Ringman, or the man with the weed, the Confidence–Man accosts the country merchant, Henry Roberts. After a period of small talk, Ringman suddenly unburdens his heart to Roberts: "[i]t was so sudden an outburst; the interview offered such a contrast to the scene around, that the merchant, though not used to being very indiscreet, yet, being not entirely inhumane, remained not entirely unmoved" (17). The merchant, in this case, "remained not entirely unmoved" by the Confidence-Man's performance. While there is no explicit mention of heat in this case, the idea appears to be that the sharp contrast between the cool business-like atmosphere and Ringman's heated appeal caused Roberts to be moved to confidence. This is confirmed shortly thereafter when "the stranger's [Ringman's] manner assumed a kind and

[12] In this case it is herbs, and so, the goodness of nature.

degree of decorum which, under the circumstances, seemed almost coldness" (18). Heat, or confidence, has flowed from Ringman to Roberts. This dynamic, through which confidence is conceived of as heat, and its opposite as a lack thereof, represents another instance of human morality being described in a manner that connotes the idea of energy and thus creates another link between the human drama and the cosmic frame of the text.

Yet another way that Melville maintains a connection between the human drama and the cosmic frame is through discussions about of the nature of reality centering on the question of whether it is or is not governed by a principle of loss. While these discussions generally focus on some specific human or natural circumstances, they are clearly meant to be interpreted in light of the greater cosmic reality. The Confidence-Man, wanting to obfuscate the evil that governs the cosmos, often represents scenarios in the human and natural worlds as being impervious to loss. As the transfer agent of the Black Rapids Coal Company, he sits next to Henry Roberts, the country merchant, in a cabin of the steamboat where men are engaged in playing cards. When Roberts makes a comment about the probability of two young and inexperienced players getting fleeced by two older adepts, the Confidence-Man replies, "[a] fresh and liberal construction would teach us to regard those four players—indeed, this whole cabin-full of players—as playing at games in which every player plays fair, and not a player but shall win" (46). Roberts responds by saying, "you hardly mean that; because games in which all may win, such games remain as yet in this world uninvented, I think" (46). The Confidence-Man responds by saying, "[c]ome, come … fares all paid; digestion sound; care, toil, penury, grief, unknown; lounging on this sofa, with waistband relaxed, why not be cheerfully resigned to one's fate, nor peevishly pick holes in the blessed fate of the world" (46). The reference to "the blessed fate of the world" is, of course, quite ironic considering the overall trajectory of the novel, that is, considering the "fate" to

which the Confidence-Man is leading the world, largely, by obfuscating a governing principle of loss. In other words, there is a hole in the fate of the world and it is the Confidence-Man's sole aim to deny its existence so that humanity will unwittingly fall into it. Thus, through the analogy of a card game, a connection is made to the greater cosmic picture.

This same representation of reality as being impervious to loss occurs in other episodes throughout the text. In one example, the Confidence-Man as the herb-doctor is talking with the Missouri bachelor, when the latter incredulously exclaims:

> *I* have confidence in nature? *I*? I say again there is nothing I am more suspicious of. I once lost ten thousand dollars by nature. Nature embezzled that amount from me; absconded with ten thousand dollars' worth of my property; a plantation on this stream, swept clean away by one of these sudden shiftings of the banks in a freshet; ten thousand dollars worth of alluvion thrown broad off upon the waters. (93)

Here, the Missouri bachelor is describing how much of his work has been lost at the hands of nature. The herb doctor responds by saying, "[b]ut have you no confidence that by a reverse shifting that soil will come back after many days" (93). The Confidence-Man is thus presenting nature as perfectly balanced and impervious to loss, as though it reflected the dynamics of a Newtonian universe, but not a thermodynamic universe governed by a principle of loss. In yet another episode, the same Bachelor of Missouri says to the Confidence-Man, who has now taken the form of the Philosophical Intelligence Officer, "boy or man, the human animal is, for most work purposes, a losing animal" (100). This even more than the previous example relates to the cosmic scenario in so far as it is precisely "the capacity to do work" that is lost through energetic

dissipation. Interestingly, the Bachelor, who now claims his name is Pitch, traces this human trait to "a state of natural rascality" (101) that he later links to "Original Sin" as conceived by "St. Augustine" (109). So, the loss, or waste, of work in humans is attributed to their fallen nature. This directly reflects, on the human level, the cosmic situation in which the universal tendency towards the dissipation of mechanical energy is connected to the fallen state of humanity and the world. The Confidence-Man responds to the Bachelor's claim by saying that "mankind … upon the whole … present as pure a moral spectacle as the purest angel could wish" (103). Though there is no mention of work in this statement, considering the Bachelor's proposal that a wasteful tendency in humans is the result of their fallen state, to describe them as morally "pure . . . as the purest angel could wish" is to argue that they are not fallen, and by the Bachelor's logic, not wasteful, or productive of loss. These two examples, using the natural world and human world, respectively, once again link the human drama to the cosmic frame through a discussion of the nature of reality centering on the question of whether it is or is not governed by a principle of loss.

This aim of the Confidence-Man, to obfuscate a governing principle of loss that is at once human and natural and embodied in the energy of the cosmos, comes across quite clearly in two other short episodes. In the form of the herb doctor, conversing with the previously mentioned man who has been "long tranced into hopelessness," the Confidence-Man implores the latter to "[w]ork upon yourself; invoke confidence, though from ashes" (67-68). This short statement contains quite a bit of symbolic meaning. Energy, we know, represents "the capacity to do work." So, when the Confidence-Man implores the hopeless one to "[w]ork upon [him]self," the former is telling the latter to draw upon energy. The energy he is referring to is "confidence," which, as we have seen, is conceived in terms of heat. All of this makes perfect sense because

heat translates into work. But the Confidence-Man is suggesting that the hopeless one create such heat from ashes, such confidence from hopelessness. This, of course, is an impossibility. Ashes are an entropic remainder of chemical combustion. As such, they cannot be a source of heat, just as hopelessness cannot be a source of confidence. The Confidence-Man is attempting to deny the entropic drift of reality. In another instance, after the Confidence-Man, as the man in gray, explains to his interlocutor his plan for a "World Charity," his confidence is described as resembling a sort of perpetual motion machine. We read: "[t]he master chord of the man in gray had been touched, and it seemed as if it would never cease vibrating" (36). "[S]eemed" is the important word. For the basic insight that gave rise to the vision of a thermodynamic cosmos is that, due to the dissipation of heat through processes such as friction and conduction in heat engines, there can be no perfect conversion of energy that would facilitate the possibility of perpetual motion. All motion, whether in an engine or the cosmos, must eventually cease. Once again, the Confidence-Man is obfuscating the principle of loss by which reality is structured at the human, natural and cosmic levels.

If the Confidence-Man's con is to obfuscate the principle of loss by which reality is structured at the human, natural and cosmic level (physically manifested in dissipating solar energy and morally manifested in sin) and thereby sell the vision of an ideal engine of perpetual progress, it is to those who lack confidence and doubt such progress that readers must turn to find the truth. In his review of Hawthorne's *Mosses from an Old Manse* (1846), Melville refers at length to the ability of writers such as Shakespeare (and Hawthorne) to convey truth through dark or negative characters. He argues that, "[t]hrough the mouths of the dark characters of Hamlet, Timon, Lear, and Iago, he [Shakespeare] craftily says, or sometimes insinuates the things, which we feel to be so terrifically true, that it were all but madness for any good man, in his own proper character, to

utter, or even hint of them" (Melville "HHM" 375). He further notes that, "in this world of lies, Truth is forced to fly like a scared white doe in the woodlands; and only by cunning glimpses will she reveal herself, as in Shakespeare and other masters of the great Art of Telling the Truth" (375-376). Melville also belongs to this tradition of "masters" and it is, therefore, to the obscure, dark, or negative characters that one must look to find the truth that the Confidence-Man works so hard to dissimulate in the drama leading up to solar death. The Bachelor from Missouri is one such character who has already been discussed at length. Two other characters that are important in this regard are the one-legged misanthrope and the "Soldier of Fortune" (79).

The one-legged misanthrope has been briefly referred to in connection with the unmasking of Black Guinea as an avatar of the flaxen haired stranger who comes from the sun. Shortly after this episode, this same misanthrope is asked by the Confidence-Man as the man in gray whether all men, like Guinea, are actors. To this the misanthrope replies, "[t]o do, is to act; so all doers are actors" (Melville *CM* 27). This also means that all "actors" are "doers," and, consequently, that all the actors in this masquerade (Guinea foremost in this case) are masking a principle of doing, action or work. They are thus "actors" in a very specific sense. And because energy is the capacity to do work, to act, all of the actors in this masquerade are transformers of energy. Just prior to making this very revealing statement, the misanthrope laughs, and his laugh is described as being as "intolerable as that of a high-pressure engine jeering off steam" (26). Read together, these two episodes reveal something of the text's "essential meaning." For the steam from a steam engine that dissipates into the atmosphere as heat cannot be transformed back into work or action and is thus a source of entropic loss. This loss is "intolerable" to those whose faith is placed in the world. As a foil to the Confidence-Man, this character "craftily" reveals that a principle of loss governs reality aboard Melville's "world-ship."

The “Soldier of Fortune” is another character through whom this principle of loss is revealed. Swaying on a pair of crutches, he is described as being “mechanically faithful to the motion of the boat” (79). The “motion of the boat,” representing the “motion” of a world governed by thermodynamic principles, is destined for cessation. For this character to be “mechanically faithful” to this process means that he does not try to obfuscate the unsustainable nature of that “motion.” He is even, ironically, referred to by the Confidence-Man as an “infernal machine” (81), which, in this context, means the opposite of an ideal machine that does not lose power through things like friction. This is ironic because it is the Confidence-Man, obfuscating the principle of loss, or evil, inherent in creation who is truly “infernal” in so far as he promotes a vision of human self-reliance by eliciting faith in human nature and the natural world, both of which are dependent on the energy of the sun. The “Soldier of Fortune,” on the other hand, describes himself as “drifting down stream like any other bit of wreck” (83), foreshadowing the final wreck of the worldly faithful. Thus, through this character a “cunning glimpse[]” of “Truth” is also revealed.

While the points that have been discussed in this section do not come close to exhausting the content of *The Confidence-Man* (which would be far beyond the scope of this chapter), they do convey the way that the cosmic frame remains ever present throughout the human drama that seemingly supplants it, linking the human and natural worlds to the greater cosmic picture. The primary symbol of this link is, of course, the steam boat, a “hybrid” of nature and human society that depends on solar energy in the form of coal to sustain its movement. Beyond this, however, the human and natural phenomena are often discussed in ways that link them to the energy of the cosmos, whether through the concept of heat or the principle of loss, both of which find their ultimate expression in the symbol of a dissipating sun.

"Something Further"?

Following the symbolic representation of solar death in which the Cosmopolitan extinguishes the "solar lamp" and leads the old man away into entropic darkness, the novel's enigmatic final sentence states that "[s]omething further may follow of this Masquerade" (217). This seemingly complicates my reading of the text as an allegory for the cosmic evil of energetic dissipation in a thermodynamic universe that finds its ultimate expression in universal heat death. And yet this is not really the case. In 1852, the same year that Thomson delivered his paper on the dissipation of mechanical energy, John Macquorn Rankine delivered one titled "On the Reconcentration of the Mechanical Energy of the Universe." Rankine had difficulty accepting Thomson's pessimistic conclusions about the dissipation of mechanical energy and the consequent "cessation of all phenomena'" (Smith *CE* 142). He speculated that "'the world, *as now created*, may possibly be provided within itself with the means of reconcentrating its physical energies, and renewing its activities and life'" (qtd in Smith 142). Rankine's theory is quite different from one in which a new creation is ordered by divine fiat, a possibility that Thomson's theological commitments left open. Rankine's position proposes a mechanism within creation itself affording it the ability to reconstitute and replenish its energies in a cyclical manner. This view of creation was criticized by the scientific establishment. William Hopkins, president of the BAAS, "damned [Rankine] with faint praise" (145) in his 1853 presidential address.[13] Though Rankine's speculations in this matter were not given much official credibility, they were part of a conversation taking place in scientific societies and journals throughout the 1850s. If, as critics such as Zimmerman and Davis argue, Melville regularly consumed journals and periodicals available in the New York

[13] Presumably this is the same address that was excerpted in *Scientific American* that same year in the article titled "Heat of the Sun—Will it Ever Decay."

Society Library, it is quite possible that he was privy to this conversation and that the final line of *The Confidence-Man* simply reflects this fact.

Melville's energetic allegory in *The Confidence-Man* reveals that the principle of energy was, indeed, one of the "great generalization[s]" of the latter half of the nineteenth century. Through the work of Thomson and others, "energy" became a universal metaphor conjoining such seemingly disparate phenomena as the steam engine, the solar system, the industrial economy and fallen humanity, explaining their diverse actions and limited possibilities according to the same underlying principles. *The Confidence-Man* both addresses this phenomenon as theme and adds a literary dimension to the energetic generalization through the seemingly aimless plot of a commercial steamboat trip that is literally driven by the principles of classical thermodynamics. The *Fidele*, a "hybrid" of nature and society, moved along its course by the energy of the sun, is fated, from the outset, to inevitable dissipation and wreck. The Confidence-Man, a duplicitous avatar of cosmic evil, obscures while helping to fulfill this fate by ever-obfuscating the existence of human and natural evil, both of which reflect the principle of loss governing the cosmos of the 1850s in the form of a dying sun.

Chapter Two: When New and Old Worlds Collide

In the nineteenth century there were two axes upon which the question of the age of the world could be measured. One was the axis of duration. Upon this axis, the question of the world's age was a question about time: how long had the world been in existence? The other was the axis of dissipation. Upon this axis, the question of the world's age was a question about the effects of time: had the world's energies depleted over time, or had they remained constant? The two, of course, intersected. Thus, William Thomson argued against the vast time scales of evolutionary and geological duration based on the dissipative character of mechanical energy emitted by the sun and stored in the earth. Crosbie Smith and Norton Wise argue that "[t]he *prima facie* reason for William Thomson's publication in 1862 of articles 'On the age of the sun's heat' and 'On the secular cooling of the earth' was to provide a critical response to the immense time scales apparently demanded by Charles Darwin's *The origin of species by means of natural selection*" (524). The time scales that thinkers like Darwin and Charles Lyell required for their evolutionary and geological world views went beyond what thermodynamic calculations of the earth's energy store working in accordance with the second law could mathematically affirm. For those views to be accurate, either unknown stores of energy would be required, or the second law would need to be proven false. Thomson left the former option open, writing in his "On the age of the sun's heat," that "inhabitants of the earth cannot continue to enjoy the light and heat essential to their life, for many millions years longer, *unless sources now unknown to us are prepared in the great storehouse of creation*" (393 my emphasis). The discovery of radium and atomic energy in the early twentieth century proved that such sources were, indeed, "prepared," thereby reconciling the vast time scales required by evolutionary and geological phenomena with a law of energetic dissipation.

And yet in the nineteenth century, prior to this discovery, there was a real tension in scientific societies between the temporal and energetic ages of the world. Darwin referred to Thomson as an "odious spectre" (Marchant 268), and Sir Archibald Geikie, a Scottish geologist, complained that "the physicists have been insatiable and inexorable. As remorseless as Lear's daughters, they have cut down their grant of years by successive slices, until some of them have brought the number to something less than ten millions" (369). Thomson, on the other hand, called Darwin's temporal estimations "singularly defective" and James Prescott Joule referred to them, quite plainly, as "rubbish" (qtd. in Smith and Wise 552, 525) For whereas the energetically old world of thermodynamics required a relative youthfulness in terms of temporal duration, the temporally old world of geology and evolution, working within the established physical parameters, required an energetic youthfulness that directly challenged the second law. In other words, the deep time of geology and evolution, lacking the discovery of new energetic sources, required a principle of energetic conservation unhampered by a concomitant law of dissipation. For while the first law of thermodynamics does, indeed, state that the energy in the universe is conserved over time, the second law states that it is slowly degraded into uniform heat. Thus, in "Energy," Thomson and P.G. Tait write, "light, electric motion, and all other forms of energy, ultimately become heat, and … though the progress of energy through these various stages may modify the course of events, it cannot in the least affect their inevitable termination" (607). The Janus-faced laws of thermodynamics foretold the "inevitable termination" of the "course of events" based on the degradation of all energy forms into uniform heat. To extend this process into the interminable pasts of evolutionary and geological history meant that, barring the discovery of new energetic sources, the universe would long ago have reached the state of maximum entropy known as heat death.

This chapter will look at the nineteenth century as a period in which the battle over the age of the world was fought. Though this was a battle fought on many fronts, it will be regarded as, primarily, a battle over energy and its conservative and/or dissipative tendencies. On the one hand, there will be those thinkers of deep time who, energetically speaking, present the world as new, or as-good-as-new. James Hutton and Charles Lyell, two giants of geology, are examples of this position. Hutton, a late eighteenth-century geologist whose work was popularized in the early nineteenth century by John Playfair, devised a theory by which the world operated in a mechanistic manner, cycling through periods of erosion and uplift in an endless process of self-renewal. Referring to Hutton's so-called "world-machine," Stephen Jay Gould writes, "[s]ome machines wear out as their parts fall into irreversible disrepair. But Hutton's world machine worked in a particular way that prevented any aging" (65). Lyell, one of the most renowned geologists of the nineteenth century, also presented an ageless world through his principle of uniformity, according to which the forces of nature remained constant throughout all of time. In his seminal *Principles of Geology* (1830) he argues that "if in any part of the globe the energy of a cause appears to have decreased, it is always probable, that the diminution of intensity in its action is merely local, and that its force is unimpaired, when the whole globe is considered" (189). Neither Hutton nor Lyell believed in the literal eternity of nature, but by sidestepping the issues of a beginning and an end, and presenting the world as never waning in vitality, these thinkers of deep time were paradoxically able to present the ages of the world as essentially ageless. I will refer to this position as "energetically conservative." Relying, as it does, on a cyclical conception of time, its structural temporal metaphor will be "time's cycle."[14] On the

[14] To include Darwin as an example of this position would complicate matters due to the fact that evolution is structured by the metaphor of "time's arrow," rather than "time's cycle." It is still energetically conservative in that it points to what Loren Eiseley calls "*the emergence of the endlessly new,*" but its vision of time is essentially "noncyclic" and "unreturning" (331). To keep matters simple, I have, therefore, restricted myself to using the

other hand, there will be those who, like Thomson and Tait, present the world as energetically old and dissipated. In "Energy," their co-authored article of 1862, Thomson and Tait speak of "the sober scientific certainty that [the] heavens and earth shall 'wax old as doth a garment,'" ominously arguing that "this slow progress must gradually, by natural agencies which we see going on under fixed laws, bring about circumstances in which 'the elements shall melt with fervent heat'" (607). Quoting passages from the bible to affirm the theological orthodoxy of their doctrine of energy, Thomson and Tait emphasize the inevitable aging process of a fallen and finite world. I will refer to this position as "energetically liberal," using the latter term to mean "profligate" or "wasteful." Relying on a directional conception of time, its structural temporal metaphor will be "time's arrow." These two opposing positions will represent the primary positions taken up in the nineteenth-century fight over the energetic age of the world.

In looking at how three nineteenth-century American writers contributed to this fight, this chapter will show that the issue at hand went far beyond merely scientific significance. While physicists, geologists and biologists did, indeed, have major stakes in this fight, so did those wishing to establish the spiritual state of humanity and nature, as did those concerned with the historical standing of a burgeoning nation. When, in his 1836 publication, *Nature,* Emerson proposed to establish "an original relation to the universe" (15), he was really taking a position on the nature of energy and the age of the world. For the very possibility of establishing such a "relation" in nineteenth-century America rests on the belief that the universe does not age and that the material-energetic conditions established at the origin of creation remain constant throughout time. In other words, it rests on the belief that the world is as-good-as-new. In a

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geologists as typical examples of the energetic conservatism I will explore in nineteenth-century American literature.

Judeo-Christian culture, such a belief means that there was no "fall" that diminished the world from its original splendour. And, historically, it means that the project of America is not a last-ditch effort at the end-point of a historical process, but a clean slate for all of Western humanity. Emerson is echoing Thomas Paine's assertion from *Common Sense* (1776) that "[w]e have it in our power to begin the world over again" (45), a belief in the ever-newness of creation marking the difference, for him, between being a revolutionary and a remnant. Emerson's position on the nature of energy and the age of the world, evident in his call for "an original relation to the universe," has major spiritual, as well as socio-historical, ramifications, plainly illustrating the fact that more than scientific formulae were at stake in the battle over the energetic age of the world.

Of course, Emerson's position represents just one side of the divide that I have identified between energetic conservatives and energetic liberals. Not all American authors stood with him, as this chapter will reveal. Emerson and Thoreau will be shown to stake out the energetically conservative side in presenting the world as new, or as-good-as-new, whereas Nathaniel Hawthorne will be shown to stake out the energetically liberal side in presenting the world as old. A journal entry from 1857 discussing the work of Lazare Carnot as well as a lecture from 1862 titled "Perpetual Forces," read in conjunction with other peripheral texts, will be shown to reflect Emerson's energetically conservative position. Sections from *A Week on the Concord and Merrimack Rivers* (1849), as well as the posthumously published essay "Walking" (1962), will be shown to reflect the same position for Thoreau. The counterpart of this position will be shown to be a socio-historical liberalism in which the values of individuality, originality and progress are affirmed. Conversely, Hawthorne's *The House of the Seven Gables* (1851) will be shown to reflect an energetically liberal position. The counterpart of this position will be shown to be a

socio-historical conservatism in which the idea of humanity's transgenerational corruption, or "fallenness," is espoused.

These primary texts, spanning the years of 1849-1862, run parallel to much of the "official" literature of the emerging science of thermodynamics. From William Thomson's 1849 "Account of Carnot's Theory on the Motive Power of Heat," in which Thomson used the term "thermo-dynamic" for the first time (Smith *CE* 93), and in which he first brought the concept of "energy" to bear upon thermodynamic processes (75), to the two aforementioned articles, "On the Age of the Sun's Heat" and "On the Secular Cooling of the Earth," both published in 1862, in which Thomson drew out the consequences of Carnot's insights for the universe as a whole, this span of years saw the development of a natural philosophy based on an energetic principle both conservative and dissipative. This process culminated in 1865 with the formal establishment of the laws of thermodynamics by Rudolph Clausius. By considering a group of literary texts from the same period, this chapter will illustrate the manner in which questions generally thought to arise within the realm of natural philosophy, or physical science, were simultaneously of the greatest human, and thus social, significance. It will consequently illustrate the manner in which three nineteenth-century American authors contributed to the discourse of energy and the age of the world, and how that discourse, going one way or another, gave very different meanings to the idea of "America."

Emerson and Thoreau: Energetic Conservatives (aka Socio-Historical Liberals)

Emerson's journal from 1857 mentions, on numerous occasions, a text by Francois Arago titled *Biographies of Distinguished Men of Science* (1857). Amongst the eighteenth and nineteenth-century scientists to whom the text is devoted is Lazare Carnot, the Napoleonic military engineer and co-founder of the *Ecole Polytechnique* in Paris. Through his research on

machines, which considered such things as force, friction and loss of power, Carnot contributed to the future science of energy. His work also inspired his son, Sadi Carnot, to conduct similar research on the object of heat engines, and thereby to initiate a line of thought and inquiry that would, ultimately, culminate in the emergence of the laws of thermodynamics some years after his death. Emerson's journal contains the following passage from Arago's text summarizing one of Lazare Carnot's mechanical principles: "It must not be imagined that any force or fraction of a force can be ever annihilated. All that which is not found in the useful effect produced by the motive power, nor in the amount of force which it retains after having acted, must have gone towards the shaking & destroying of the machine" (*JMN* 14:160). Carnot and Arago are still speaking in terms of "force," as opposed to "energy," and thus reflecting an eighteenth-century Newtonian vocabulary, but nonetheless, the passage Emerson copied clearly describes a law of energetic conservation and contains a consideration of possible sources of loss in energetic processes.

Above the passage in Emerson's journal is the single word: "All" (160). While, at first glance, this seems rather cryptic, upon further reflection it appears quite fitting. Carnot's work was on machines abstractedly considered. Referring to the former's 1783 *Essay on Machines in General*, Arago writes, "[t]hey who would seek in the essay … the technical description or special study of any one of the machines in particular, simple or composite, from which man has been able to derive so many advantages, would labour to no purpose. Such was not, indeed, the end which the author had in view" (300). He then defines an abstract machine as an "assemblage of a more or less considerable number of fixed or movable pieces, by the aid of which forces of all sorts ordinarily produce effects which their direct action could not bring about" (300). Such was the object of Carnot's thought. Emerson, being Emerson, and living in an age that was governed by a

mechanistic philosophy that construed the universe as one giant machine, is simply taking that thought to new levels of abstraction. In other words, he is making a move in thought formally analogous to that made by Thomson in 1852 when the latter projected Sadi Carnot's axiom of dissipation from the steam engine to the cosmos. In a very similar manner, Emerson is applying Lazare Carnot's principle, as quoted above, to the "All" of the universe, considered as one vast assemblage of parts and forces. This use of a mechanistic model for the "All" affirms Leonard Neufeldt's argument that Emerson "rejects the popular distinction among artists of his time between the mechanical and the natural" (335). It furthermore gives credence to Christopher Windolph's assertion that "the most basic and influential concepts of Emerson's philosophy can clearly be seen to have their roots in the laws of mechanistic science" (42). Windolph is referring to concepts such as "compensation," "polarity," and "circularity" (42). This use of mechanistic concepts and models clearly complicates any reading of Emerson as a typical romantic figure who eschews atomistic mechanism for a new vision of organic unity.

And yet Emerson is always, first and foremost, concerned with the "All." Walls refers to this as Emerson's "rational holism" (1). As opposed to Thoreau who, through the interconnection of detail, inductively arrives at a conception of the "All," Emerson, so Walls argues, always views individual details deductively and in light of a presupposed "All" (1). To imagine this "All" as one of Carnot's machines would seem to imply the eventual destruction of the universe by friction, and thus, the intractability of time's arrow. Emerson would, in that case, be taking an energetically liberal position as opposed to the energetically conservative position that I have identified him with. For, unlike Hutton's "world-machine," the energetic balance of which prevents it from falling into irreversible disrepair, Carnot's abstract machine uses a portion of its energy in destroying itself over time. Yet in transposing Carnot's principle from the physical to

the metaphysical plane, Emerson alters it in a manner that is consonant with the vision of an energetically conservative universe that he shares with thinkers such as Hutton and Lyell.

Emerson's metaphysical position could be characterized as one of idealist pantheism in so far as he views some power commensurate with God as being immanent in nature (pantheism) and goes so far as to question nature's existence as something other than a manifestation of that ideal power (idealism). From such a perspective, the universe has no inside or outside. There is only the ideal power, or force, and its manifestation in nature, as both physical force and material part. What, then, is to be subject to "shaking" and destruction by the ever-undiminished forces of Carnot's mechanistic model? The only possibility is the individual material parts that, along with the forces, both physical and ideal, make up the universal assemblage. This is where Emerson's idealism comes in handy. For if the leftover forces were simply blind forces of nature[15], left to howl unintelligibly in a materialist void, creation would be at an end. But true to his idealism, Emerson situates the creative forces of Mind amongst the forces of nature. Thus, in "Perpetual Forces" he writes, "intellect and morals appear only the material forces on a higher plane" (72). This axiom must be viewed as pertaining to both the "intellect and morals" of individual human minds as well the Mind of that ideal and God-like power of which the former are instantiations. So while the objects, or "parts," of creation may be transient and perishable, subject to friction and destruction, neither the ideal nor the material forces from which they arise can ever be annihilated and thus operate in a cyclical perpetuity, sustaining the "All" through a process of endless creation. This same vision of energetic conservation is expressed as early as "Circles" in the first *Essays* from 1841, where he states that "[t]here are no fixtures in nature. The universe is

[15] In this section on Emerson, "nature" represents physical nature and natural forces (quite possibly illusory), whereas "Nature" represents the pantheistic union of nature and God.

fluid and volatile … The law dissolves the fact and holds it fluid," but also, "there is no end in nature, but every end is a beginning" (189). Gay Wilson Allen has, in fact, pointed out that the principle of circularity as employed by Emerson is essentially a poetic translation of the principle of the "conservation of energy" (445). In 1857, 16 years after publishing the essay, Emerson is seeking concrete confirmation from the world of mechanical engineering for his poetic intuition that death is only for the individual "fact" while the "All" continues its eternal operations with undiminished force.

The perpetual character of the forces of creation, both physical and ideal, is the theme of the 1862 lecture titled "Perpetual Forces." The epigraph poem, presumably spoken by Nature itself, introduces this theme, stating, "[n]o ray is dimmed, no atom worn, / My oldest force is good as new" (Emerson "PF" 68). As previously noted, this "good as new" is the key to Emerson's hope of establishing an "original relation to the universe." For if the forces of nature are dissipated and depleted from what they once were, one's relation to the "All" can only ever be derivative and debased in relation to a former age of health and vitality. Emerson eschews this possibility at every chance. For instance, he writes, "[t]he sun has lost no beams, the earth no elements; gravity is as adhesive, heat as expansive, light as joyful, air as virtuous, water as medicinal as on the first day. There is no loss, only transference" (71). In another reference, referring to the forces of wind, fire and water, he writes, "[t]hey all have certain properties which adhere to them, such as conservation, persisting to be themselves, [the] impossibility of being warped" (71). Both these statements reveal what I am calling an energetically conservative position. The former invokes a cosmic cycle in which "[t]here is no loss, only transference," so that, in terms of energy, things are the same as "on the first day." The second explicitly refers to energetic "conservation," and the persistence of forces that cannot be "warped" over time. Thus, Emerson envisions a total

energetic balance, writing, in one instance, "[t]he coal on your grate gives out in decomposing exactly the same amount of light and heat which was taken from the sunshine in its formation in the leaves and boughs of the antediluvian tree" (71). This describes a compensatory mechanism that, along with the principle of circularity, guarantees a non-linear nature that, literally, goes around in circles. So, while the individual falls victim to time's arrow, the "All" continues its eternal cycles through endless time.

In accordance with his idealist pantheism, Emerson draws an analogy between the material forces of nature and the ideal forces of the mind. While these ideal forces operate at both the level of individual humans and the universal level of God, or what Emerson sometimes calls the "Over-Soul," it is towards the former that the following quote seems aimed. He writes, "[t]he husbandry learned in the economy of heat or light or steam or muscular fibre applies precisely to the use of wit. What I have said of the inexorable persistence of every elemental force to remain itself, the impossibility of tampering with it or warping it, —the same rule applies again strictly to this force of intellect" (72-73). This analogy represents a clear repudiation of the energetically liberal position held by Thomson and Tait. While it is difficult to know whether Emerson was aware of the work of Thomson and Tait and thus explicitly rejecting it in this 1862 lecture, or if he was simply giving new expression to his poetic vision of a circular cosmos, bolstered as it was by his familiarity with both mechanistic and geological world views, by invoking an "economy" of "heat" and "steam" that is not subject to irreversible loss Emerson is presenting an alternative thermodynamic vision. It is not difficult to see the importance of this alternative for his analogy, for which a principle of energetic dissipation would present appalling consequences. Applied to "the use of wit," for instance, the principle of energetic dissipation would foretell a world of "dim-wits," and applied to the "force of intellect," it would predict a time when all of human

knowledge would amount to "hot air." Emerson rejects these possibilities. He espouses man's power and potential, writing, "[l]ook at him; you can give no guess at what power is in him. It never appears directly, but follow him and see his effects, see his productions. He is a planter, a miner, a shipbuilder, a machinist, a musician, a steam-engine, a geometer, an astronomer, a persuader of men, a lawgiver, a builder of towns" (74). Though he compares man to a "steam engine," this is not a vision of dissipation, but one of ingenuity, innovation and work. Emerson does not view the mental forces, any more than the material ones, as degenerative or in decay. They too are always as-good-as-new.

Taken together, these forces go into the "work" of creation. This "work," performed by the ideal and material forces of Nature, must be conceived as occurring at both the relative level of human creation and the absolute level of God's creation. For whereas the former works at the creation of civilization, the latter works at the creation of the natural world. But once again, Emerson's primary concern is the work of human creation, or civilization. This consideration of "work" represents yet another parallel between Emerson's line of thought in "Perpetual Forces" and the subject matter of classical thermodynamics. For energy represents "the capacity to do work" and Emerson frames "Perpetual Forces" as a sort of inventory into the forces that facilitate work, writing, "[n]ever was any man too strong for his proper work. Art is long, and life short, and he must supply this disproportion by borrowing and applying to his task the energies of Nature" (69). He describes some of this work in the previously quoted passage about human ingenuity and innovation. In the following passage he describes several other forms of work, but referring to it here as "labor" (75):

> Labor hides itself in every mode and form. It is massed and blocked away in that stone house, for five hundred years. It is twisted and screwed into fragrant hay which fills the

> barn. It surprises in the perfect form and condition of trees clean of caterpillars and borers, rightly pruned, and loaded with grafted fruit. It is under the house in the well; it is over the house in slates and copper and water-spout; it grows in the corn; it delights us in the flower-bed; it keeps the cow out of the garden, the rain out of the library, the miasma out of the town. (75)

This lengthy description of various forms of labor, appearing in the larger context of "Perpetual Forces," depicts human work as the transformation of Natural forces. Emerson is thus describing what Marx calls labor power. And it is precisely due to the perpetual character of the Natural forces that power human labor that humanity's "capacity to do work," its energetic reserve, is exhaustless.

This vision of humanity's infinite reservoir of energy and endless "capacity to do work" is essential to Emerson's notion of the individual. In what is probably his most renowned essay, "Self-Reliance," Emerson espouses the individual value of "every man," writing of each that, "[t]he power which resides in him is new in nature" (149). This belief levels the playing field of history. Homer, Plato, Newton, are no longer gods above men from golden ages past, but simply "every men" who realized their God-given nature. The equivalence of their work can still be accomplished. This, of course, does not mean mimetic emulation, or critical commentary. Such would be the dross of tradition, that which, according to Emerson, these self-relying men "set at naught" in order to accomplish what they did (148). Thus, Emerson writes, "do your work, and I shall know you. Do your work, and you shall reinforce yourself" (153). Each individual has unique work to accomplish and the power with which to accomplish it in the ideal and material forces at his/her command, forces that remain constant throughout history. If this were not so, if material and ideal forces dissipated over time, no modern poet could capture the equivalent of

Homer's "rose-covered dawn," because the beauty of nature would have faded to something less inspired. Similarly, no modern philosopher could create a metaphysical system equal to the Platonic, because the sharpness of the mind would have dulled, making thought far less precise and confusion predominant. But this is not the case. A nineteenth-century American lives in the same world, energetically speaking, as did Homer and Plato. Thus, he has no need to rely on traditions established by such historical figures, making of himself a footnote to their rare genius, but rather, using them as representative men, can emulate their individuality and originality and bring forth works every bit as vital as an *Iliad* or *Parmenides*, or, for that matter, a nation as vital as ancient Greece.

This does not mean that Emerson believes most individuals are up to the challenge. As he states in "Power" (1860), "the key to all ages is – Imbecility; imbecility in the vast majority of men at all times, and even in heroes in all but certain eminent moments" (54). He refers to these imbeciles as "victims of gravity, custom and fear" all of whom belong to a "multitude hav[ing] no habit of self-reliance or original action" (54). Thus, much like Thoreau, Emerson does believe in the possibility of dwelling in "degenerate days" (*A Week* 211), but they are not degenerate in terms of innate power, or energy, but in terms of humanity's ability or willingness to tap into that energy and perform their God-given work. The major form this unwillingness takes is tradition and custom, a mere aping, in Emerson's estimation, of the work of the dead. Thoreau summarizes this view well in *A Week* when he states, "[a]ll men are partially buried in the grave of custom … Better are the physically dead, for they more lively rot" (132). What is especially significant about this passage is the reference to the "physically dead" who "more lively rot," for it implies an energetic vitality immanent to creation that is somehow smothered by the dead weight of custom. Emerson writes, "[a]ll power is of one kind, a sharing of the nature of the

world. The mind that is parallel with the laws of nature will be in the current of events and strong with their strength" ("Power" 56). But according to Emerson, the majority of humanity lives out of sync with the laws of nature, squandering their energy on dead and redundant works. It is here more than anywhere that we can see Emerson's socio-historical liberalism as the logical counter point to his energetic conservatism. For an individual living in sync with an energetically conservative and creative Nature would only be stifled by historically inherited social forms and norms. His or her natural health and vitality would be replaced by the sickly pallor of social conformity, his or her originality exchanged for imitation. In "Perpetual Forces," Emerson states that "[t]his world belongs to the energetical," (85). The opposite of the "energetical," according to Emerson, are the traditional, to whom the world is something borrowed from dead ages past.

Emerson's energetic conservatism/socio-historical liberalism makes a particular vision of America possible. To Emerson, and many of his contemporaries, America was what Kris Fresonke calls "nature's nation" (119). It was a place where real renewal was possible, where those "essences unchanged by man" (Emerson *Nature* 16) could be encountered first hand. This could occur in two main ways. First, and most obviously, the settling of America and its Western expansion represented a moving frontier ever pushing away from the boundaries of civilization out into a primitive wilderness where natural law was the law of the land. Carolyn Porter notes that "Emerson was born the same year that Jefferson bought the Louisiana territory" (61). This means that "Emerson's America was western-facing" (Fresonke 90). The West, representing untrammelled nature, was, for Emerson and his contemporaries, a constant reference point, identifying national potential with nature's bounty. For Emerson, this equation went back to the discoveries of Columbus (Fresonke 88-89). Though highly critical of the Jacksonian vision of manifest destiny and the vulgar version of progress that it produced (120-121), Emerson firmly

believed in the "genius of American nature" (120) that the reverent could still encounter on the frontier in his day. Secondly, in a manner that is wholly analogous to the western frontier's movement away from European civilization, natural science represented an intellectual frontier and a movement away from the reified forms of European tradition. Fresonke notes, "natural history for Emerson took place primarily in America: the discipline of natural science and the United States possessed a common philosophical lineage and purpose" (91). The American continent and "the discipline of natural science" opened up new frontiers for action and thought, and while the former would be closed with the settlement of the land, the boundary of the latter was the very boundary of knowledge. Thoreau expresses this in *A Week* when he states, "[t]he frontiers are not east or west, north of south; but wherever a man fronts a fact" (304). Science is, of course, the author of "fact", and its frontier, the frontier of all knowledge. To identify America with this virtually exhaustless terrain of future work is to give its purpose nearly infinite scope. Yet as representations of the fullness of primordial Nature and sources of renewal for all of Western humanity, these physical and ideal frontiers depend on an energetically conservative vision in which the material and ideal forces combined in Nature stand undiminished in the flow of time.

While it is unclear the extent to which Emerson was aware of the work of leading figures in the emerging field of thermodynamics such as Thomson, Tait, Clausius and others, his own poetic vision of a circular cosmos, as well as his familiarity with mechanistic and geological currents of thought, brought him to ponder, with the former, the conservative nature of energy, or force. As previously noted, Eric Wilson has argued that Emerson "anticipated the determination that matter is continuous energy while scientists were in the process of establishing this fact" (92). It could equally be said that Emerson anticipated the conservative nature of energy, and

thus, the first law of thermodynamics. “Perpetual Forces” from 1862 may be the most explicit example of this, but as I have shown, many of Emerson’s major themes from much earlier in his career implicitly deal with the same principle. His vision of nature as comprised of “essences unchanged by man,” his vision of the individual as the potential locus of “self-reliance [and] original action,” and his hope of establishing an “original relation to the universe” all depend on a principle of energetic conservation. This parallel shows that these issues were not mere matters of scientific theory, but of the utmost consequence to modern humanity.

Thoreau begins *A Week on the Concord and Merrimack Rivers* by evoking the ideas of the old world and the new. He writes, “[t]he Musketaquid, or Grass-ground River, though probably as old as the Nile or Euphrates, did not begin to have a place in civilized history, until the fame of it grassy meadows and its fish attracted settlers out of England in 1635, when it received the other but kindred name of Concord” (5). In this case, the new world river, the Concord, is new in terms of historical memory only, but “probably as old as the Nile and Euphrates” in reality. This does not mean that the Concord is energetically old or depleted. It is, rather, as one critic notes, an example of “the ever-flowing rivers” that have ever presented themselves to the thoughtful as objects for “extended meditation[s] on the flux of time” (Johnson xvi). This idea is explicitly expressed in verse form in the chapter “Tuesday.” Referring to the Souhegan River, a tributary of the Merrimack, Thoreau muses, “[e]xperienced river, / Hast thou flowed forever? / Souhegan soundeth old, / But the half is not told, / What names hast thou borne / In the ages far gone, / When the Xanthus and Meander / Commenced to wander / Ere the black bear haunted / Thy red forest-floor, / Or Nature had planted / The pines by thy shore” (222). The Xanthus and Meander are rivers from the *Iliad*. Thoreau is implying that the waters of the Souhegan have flowed since

antiquity, and quite possibly forever, though the river may have existed by different names. It is thus an example of time's "enduring cycles" (Johnson xvi). Viewing it as such, and identifying the old world with the new, Thoreau, much like Hutton and Lyell, joins the idea of deep time to a conservative economy of energy that operates on a cyclical basis, keeping the world "as good as new." *A Week on the Concord and Merrimack Rivers* is a meditation, describing in both content and form the cycles embodied in the natural world. The days of *A Week*, overseen by the cycle of the sun, describe the world's natural renewal, creating a vision of an energetically conservative universe that is governed by cyclical time. But whereas Emerson uses the mechanistic concept of "force" to denote the energetic principle driving the cyclical cosmos, Thoreau opts for the vitalist conception of "life."

In the opening chapter of *A Week,* Thoreau presents an interesting passage that combines thoughts on history, time and nature. He writes, "[a]s yesterday and the historical ages are past, as the work of to-day is present, so some flitting perspectives, and demi-experiences of the life that is in nature are, in time, veritably future, or rather outside to time, perennial, young, divine, in the wind and rain which never die" (8). This passage refers to a "life that is in nature" that is experienced as timeless, or "*perennial*," and thus outside of history. This life, forever "young," is embodied in "the wind and rain which never die," and in the "waves" that "keep[] nature fresh" (7). It is the same life that stirred the Xanthus and Meander, and now stirs the Concord's current. The intuitive experience of this life allows Thoreau to exclaim, here at the outset of his narrative, prior to the proper commencement of his week-long journey, that "the last day is not yet at hand" (7). As Laura Dassow Walls describes it, Thoreau is "eliminating history entirely" from nature, "dissolving it in the grand cyclicity of the eternally returning Great Year" (*SNW* 44). A "Great Year" represents the end of one cosmic cycle and the beginning of another (Morris 17-18). To

Thoreau the world is "as good as new" because it is continually being cyclically renewed by this "life" that time does not deplete. A similar idea is expressed in a later chapter in which Thoreau refers to "the natural facts, or perennials, which are ever without date," saying, "[w]hen out of history the truth shall be extracted, it will have shed its dates like withered leaves" (219). Here, the truth of history is described as a "natural fact" that is "without date," or timeless. This is another way of describing the "life that is in nature" that Thoreau introduces at the beginning of the *Week* as his proper object of meditation throughout. The opening chapter closes with an image of Thoreau standing on the bank of the Concord river, "watching the lapse of the current, an emblem of all progress, following the same law with the system, with time, and all that is made" (12). The "law" of the "system," of "time," of "all that is made," is, for Thoreau, the law of energetic conservation, that which sustains the "life that is in nature" through its ever "enduring cycles." Its sovereign rule, in the symbol of the river's lapsing current, is established at the outset of this narrative journey quite purposively it would seem, as though to be a firm foundation to all that follows.

A Week is what Thoreau refers to as a "drama of the day" (320). This is a drama in which the sun plays the leading role, opposite a world of ever encroaching shadow. Thoreau describes this drama in the following manner: "Night forwardly plants her foot even at noonday, and as Day retreats she steps into his trenches, skulking from tree to tree, from fence to fence, until at last she sits in his citadel and draws out her forces into the plain" (320). But because "the last day is not yet at hand," the sun rises again and the dramatic cycle of life begins anew. Following the first chapter, simply titled "Concord River," the cycle of *A Week* is broken down into days. Each chapter is the record of a day. The cycle of each day is determined by the sun: chapters begin at sunrise, or a little earlier, and end at sunset, or a little later. The sun is thus the main source of

energy, or life, for the brothers' journey and a central reference point throughout the entire text. This becomes evident in the opening paragraph of "Saturday," which recounts the beginning of the journey: "[a]t length, on Saturday, the last day of August, 1839, we two brothers, and natives of Concord, weighed anchor in this river port; for Concord, too, lies under the sun, a port of entry and departure for the bodies as well as the souls of men" (15). Describing the "river port" of Concord as lying "under the sun," here, at the very commencement of their journey, is important. The way the passage is formed implies that the brothers "weighed anchor" because Concord "lies under the sun." In other words, the sun is being described as an energetic stimulus to their river journey, as well as to the "bodies" and "souls" of all "men." The sun is, of course, the source of all terrestrial movement. The lapsing current of the previous chapter, like those of the Xanthus and Meander, is dependent on the sun for its life-energy. As Thoreau says elsewhere, "[r]ivers from the sunrise flow" (179). Thoreau is describing a natural economy of energy with the sun at its head. The "souls" of men are included in this economy because, for Thoreau, the "life that is in nature" is "divine" (8). The sun is the ultimate source of this life, this energy, for those who lie beneath it. This does not mean that there is not another, greater energetic source from which the sun receives its energy, for Thoreau does make reference to a "star in Cyngus whither we are bound" that will "pale our sun with heavenly radiance round" (19). What this greater source might be is, however, unclear. It is thus best to heed Thoreau's dying words and focus on "one world at a time" (Richardson 389). For what is clear is that the sun is regularly alluded to throughout the cycle(s) of *A Week* as the main energetic source for all creatures of this world, including, in these examples, the brothers Thoreau and the rivers that carry them ever onwards.

Some of the other earthly creatures that are energized by the sun's radiance throughout the cycle(s) of *A Week* include river-flowers, fish, and fishermen. In "Saturday," Thoreau writes, "I

have passed down the river before sunrise on a summer morning, between fields of lilies still shut in sleep; and when at length the flakes of sunlight from over the bank fell on the surface of the water, whole fields of white blossoms seemed to flash open before me, as I floated along" (21). In this example, river flowers are awakening from sleep upon the rising of the sun. Then, in Thoreau's catalogue of Concord fish, he refers to the "Fresh Water Sun Fish" (26), describing it in the following glowing terms: "[i]t is a perfect jewel of the river, the green, red, coppery, and golden reflections of its mottled sides being the concentration of such rays as struggle through the floating pads and flowers to the sandy bottom" (28). This colorful fish is described as being a sort of concentration of sunlight in the river's depths. And finally, the fisherman, whose only real knowledge is "how to take many fishes before the sun sets" (23) is described as wearing a coat "glittering with so much smothered sunlight" that it has become "naturalized at length" (24), making him "the sun's familiar" (24). Not only is this man's living dependent upon the cycle of the sun, but he has, in a sense, become one with it through his many sunny days upon the river bank. All of these creatures, the flower, the fish and the man, representing the flora, fauna and humanity of nature, are described by Thoreau as being reliant upon the sun for what they do and are. The sun's energy, operating cyclically through the "drama of the day," sustains them in life like a kind of terrestrial god.

Thoreau does, in fact, present the sun as god-like, both directly and indirectly. In this way, he mythologizes the principle of energetic conservation, giving the "drama of the day" a more poetic veneer. In the chapter "Sunday," reflecting on the divinities Western culture has adopted throughout the centuries, he writes, "[i]n my Pantheon, Pan still reigns in his pristine glory … for the great God Pan is not dead, as was rumored. No god ever dies" (65). Pan is the god of nature; he represents nature deified. That he is immortal and still reigning in "his pristine glory" means

that nature, in nineteenth-century America, remains undiminished and ever-new. This "newness" is described in the opening paragraph of the chapter where Thoreau writes, "[i]t was a quiet Sunday morning, with more of the auroral rosy and white than of the yellow light in it, as if it dated from earlier than the fall of man, and still preserved a heathenish integrity" (43). The "fall of man" is, of course, a Christian doctrine according to which the world fell into disorder when "man" fell into sin. In contrast, the "heathenish integrity" that Thoreau sees in nature represents a primordial innocence and harmony that is "still preserved," like Pan in his "pristine glory." The sun, as the energetic source of the natural world, is the preserver of this harmony and "pristine glory" and thus the real, though indirect, object of Thoreau's frequent worship at the shrine of Pan.

A more direct example of sun -worship occurs in "Sunday" when Thoreau is reflecting on the meaning of the Sabbath, the Judeo-Christian prescribed day of rest. Traversing the canal that passes between the Concord and Merrimack rivers, Thoreau and his brother are observed by some locals coming from church. He writes, "[a]s we passed under the last bridge over the canal, just before reaching the Merrimack, the people coming out of church paused to look at us from above, and apparently, so strong is custom, indulged in some heathenish comparisons" (63). In this description, the pious Christians, self-righteous through their identification with "custom," are, literally and figuratively, looking down on the two "heathenish" brothers, or so Thoreau imagines it. But for Thoreau, who identifies with the "heathenish integrity" he associates with unfallen nature, this imagined censure would be less taken as opprobrium than as praise. Thus, he states, "we were the truest observers of this sunny day" (63). For Thoreau, true piety consists in properly observing "this sunny day" as opposed to the strictures of Protestant Christianity. Thoreau, through his observance of the natural world, thinks he has discovered the true meaning

of *Sun*day, and thus quotes Hesiod, poet of the *Theogon*y, who writes, "[t[he seventh day is a holy day, / For then Latona brought forth golden-rayed Apollo" (63). As Stephen Miller notes, "[i]n Thoreau's scheme of things, an ancient Greek writer's account of creation trumps Genesis' account. Thoreau cites Hesiod mainly to stress how important Apollo, the god of the sun, is to him" (189). In other words, Thoreau worships the sun, rather than the Son, as the source of life and all creation.

The most glaring example of this worship is found in Thoreau's reminiscence of a sunrise viewed from atop an observatory on Saddle-Back Mountain recounted in "Tuesday." Due to an extensive cloud cover lying beneath the mountain peak, Thoreau found himself cut off from the world below, and, as it were, suspended in mid-air. He writes, "when [the] sun began to rise on this pure world, I found myself a dweller in the dazzling halls of Aurora, into which poets have had but a partial glance over the eastern hills, —drifting amid the saffron-colored clouds, and playing with the rosy fingers of the dawn, in the very path of the Sun's chariot … enjoying the benignant smile, and near at hand the far-darting glances of the god" (Thoreau 189). The sun is further referred to in this section as "the gracious god," and also "Heaven's sun." These are all obvious terms of worship. Thoreau's choice to employ the English rendering of a Homeric epithet in "rosy fingers of the dawn" is a testament to this god's long-lived fame. For it implies that the same sun shone in Homer's time, illuminating the same world with the same rose-colored light. Thus, the "life that is in nature," embodied in the sun, remains undiminished through the passing of ages. The apotheosis of the sun depicted in these examples represents Thoreau's mythological translation of the principle of energetic conservation, his poetic re-staging of "drama of the day."

These examples in which Thoreau deifies the sun *imply* a sort of immortality for the energetic orb. Thoreau does, however, depict the sun as immortal in more explicit ways. In one instance, referring to the stars of the night sky, he writes, "[t]hese stars are never pal'd, though out of sight, / But like the sun they shine forever bright" (19). Here the sun is described as "shin[ing] forever bright" and thus standing undiminished through the flow of time. In the chapter titled "Monday" he reflects on this theme at length:

> There has always been the same amount of light in the world. The new and missing stars, the comets and eclipses, do not affect the general illumination, for only our glasses appreciate them. The eyes of the oldest fossil remains, they tell us, indicate that the same laws of light prevailed then as now. Always the laws of light are the same, but the modes and degrees of seeing vary. The gods are partial to no era, but steadily shines their light in the heavens, while the eye of the beholder is turned to stone. There was but the sun and the eye from the first. The ages have not added a new ray to the one, nor altered a fibre of the other. (157)

While this passage was written in the context of an argument in which Thoreau is attempting to dispel the notion of the "dark ages" and thus argue that there was as much light in the past as there is in the present, it should be read as an argument for the undiminished nature of light over time in general. Thoreau says that "there has always been the same amount of light in the world" and that the gods, "partial to no era … *steadily* shine[] their light in the heavens." It would be a mistake to assume that Thoreau, in referring to the light of the gods, is referring to a greater energetic source than the sun in this case. In Thoreau's Greek-inspired cosmology, the sun is a god, whether identified with Phoebus (shining) Apollo, as in the previous quote from Hesiod, or with "Helius … the Sun" (244). It is this light that "steadily shines" throughout all eras, giving

to each “the same amount of light,” and thereby causing the “general illumination” of the natural world. Thoreau ends the passage by stating, “[t]here was but the sun and the eye from the first. The ages have not added a new ray to the one, nor altered a fibre of the other.” This passage states that the sun was the only source of illumination from the beginning of time. And while the “ages have not added a new ray” to its energetic store, for Thoreau, neither have they subtracted one.

As for Emerson, so for Thoreau, much of the action of this energetic drama is bound up with the question of work. Because energy is “the capacity to do work,” work is the natural flowering of energy. Thus, Thoreau calls hunting and fishing “honorable trades as the sun and moon and winds pursue” (57). Just as the “sun and moon and winds” work by expending and transforming energy, so the fisherman and hunter pursue their work honorably and energetically, transforming creation. Thoreau extols the virtue of “steady labor with the hands,” admonishing his reader, who may have fallen into the vice of “idle learning,” to go and “[l]earn to split wood, at least” (105). He praises “rude and sturdy, experienced and wise men, keeping their castles, or teaming up their summer’s wood, or chopping alone in the woods, men fuller of talk and rare adventure in the sun and wind and rain, than a chestnut is of meat” (8). These are men “who were out not only in ’75 and 1812, but have been out every day of their lives; greater men than Homer, or Chaucer, or Shakespeare, only they never got to say so; they never took to the way of writing” (8). Yet Thoreau argues, “what have they not written on the face of the earth already, clearing, and burning, and scratching, and harrowing, and plowing, and subsoiling, in and in, and out and out, and over and over, again and again” (8). This is a great description of the cycle of work which follows the cycles of the “sun and wind and rain.” These men, warrior-yeomen, are an integral part of Thoreau’s “drama of the day.” As workers, or creators of form, they are compared to

some of the greatest of poets the West has produced. And conversely, poets are described as workers. Thus, Thoreau writes, "[a] sentence should read as if its author, had he held a plow instead of a pen, could have drawn a furrow deep and straight to the end" (107). The harvest that such a writer reaps is the "natural fruit" of poetry (91). Commenting on the poetry of Virgil, for instance, who wrote extensively on farming in his *Georgics*, Thoreau writes, "[t]hese are such sentences as were written while grass grew and water ran," further adding, "[i]t is no small recommendation when a book will stand the test of mere unobstructed sunshine and daylight" (90). Here Virgil's poetry is described as being like a crop raised in the sun light and thus embodying an amount of natural energy. Similarly, in referring to Homer, Thoreau writes, "[h]is more memorable passages are as naturally bright as gleams of sunshine in misty weather" (92). The *Iliad*, he claims, "embodies still all the sunlight that fell on Asia Minor" (94). Thus "the rays of Greek poetry … mingle with the sunbeams of the recent day" (95). All these references to Homer describe his poetry as a "natural fruit" that has absorbed the sunlight, transforming it and presenting it anew in a unique piece of energetic work. Thus, the poet is a husbandman, tilling and seeding the ground for his crop and letting nature do the rest. Thoreau says that "all works pass directly out of the hands of the architect into the hands of Nature, to be perfected" (62). Nature can perfect those works because Nature, itself, is perfect, having an "enduring existence" (379) that cycles endlessly through time.

Also like Emerson, Thoreau believes that workers such as these, who are actually able to tap into the "enduring" energies of nature and create original work, are more the exception than the rule. Thus, he writes, "[m]en nowhere, east or west, live yet a natural life, round which the vine clings, and which the elm willingly shadows" (379). Evoking an image that bears resemblance to Nietzsche's Zarathustra coming down the mountain to confront benighted human kind, Thoreau

writes, "[w]hen we come down into the distant village, visible from the mountain top, the nobler inhabitants with whom we peopled it have departed, and left only vermin in its desolate streets" (379). In this rather harsh passage, the "sturdy" and "rude" men of Thoreau's yeoman ideal have turned into "village" "vermin," unnatural and debased. These are those who are "partially buried in the grave of custom," lesser men than the "physically dead," who, as previously noted, "more lively rot" (132). Thoreau makes it clear, however, that the problem is not humanity, as such, but rather, the "institutions of the dead" (130) that present obstacles to those who would otherwise live according to nature. Thus, on the sunny Sabbath of "Sunday," he writes, "[i]f I should ask the minister of Middlesex to let me speak in his pulpit on a Sunday, he would object, because I do not pray as he does, or because I am not ordained. *What under the sun are these things*?" (76 my emphasis). Thoreau is asking: in the order of nature, governed by the sun, what authority can artifices such as rote prayer and ecclesiastical hierarchy really have? For Thoreau believes that, "[a] man's life should be constantly as fresh as this river" (132). This means that, like the river that ever flows according to the law of energetic conservation, refreshing itself continually with new waters, "a man" should be continually renewed in life's interminable flow, and not have his life dammed and damned by the "institutions of the dead." Yet as Thoreau argues, "[m]ost men have no inclination, no rapids, no cascades, but marshes, and alligators, and miasma instead" (132). Despite Thoreau's professed love of swamps, the life of the unnatural and conventional man is here described as stagnant and swamp-like, symbolizing the burden of tradition, time's rotting corpse. Thus, Thoreau laments, "[e]very generation makes the discovery, that its divine vigor has been dissipated" (382). The phrase "divine vigor" is here synonymous with "natural energy" or "life." For Thoreau, each generation's life is dissipated by its reliance on tradition and its lack of "self-reliance [and] original action," or work, not on anything intrinsic to nature. Thus,

a form of socio-historical liberalism is the counterpoint to his energetic conservatism as well. He, like Emerson, sees a "limitless horizon" (46) in the natural world, but one that is, nonetheless continually limited by human "imbecility," or tradition.

Yet precisely because this energetic dissipation is not intrinsic to nature, but the product of humankind's reliance on the dead forms of tradition, Thoreau has hope. He states, "[h]e who hears the rippling of rivers in these degenerate days will not utterly despair" (334). The "rippling of rivers" is the sound that the current makes as it forever flows according to the law of energetic conservation, bringing the attentive listener back from the living death of habit and custom to "the life that is in nature," immortal and ever-new. Describing just such an experience, Thoreau writes that, "[s]ometimes a mortal feels in himself Nature … he becomes immortal with her immortality" (378). In such moments as these Thoreau can poetically affirm, "I am the autumnal sun" (378). In other words, in these rare moments Thoreau is one with the energy of nature that passes cyclically through the seasons and days of the years. This hope is even more pronounced in Thoreau's essay "Walking," which concludes with a description of the sun breaking through the cloud cover of a "cold" and "gray" November day, making a "paradise" of the "meadow" in which Thoreau saunters on his way (225). Thoreau reflects, after the fact, that "this was not a solitary phenomenon, never to happen again, but it would happen forever and ever, an infinite number of evenings" (225). He thus attributes immortality to the sunlight and nature's cycle of days. Continuing to walk, if only in imagination, he writes, "[s]o we saunter toward the Holy Land, till one day the sun shall shine more brightly than ever he has done, shall perchance shine into our minds and hearts, and light up our whole lives with a great awakening light" (226). In this passage, it is the sun, not God, or the spirit, that shines a "great awakening light," or energy, into the hearts and minds of humankind, thereby naturalizing rather than spiritualizing them, a

distinction that Thoreau explicitly makes in *A Week* (379). Thoreau even proposes that there may be an energetic increase in nature, writing, "one day the sun shall shine more brightly than ever he has done." The entire passage from "Walking" is in sentiment very similar to a quote from Tennyson's "Locksley Hall" which Thoreau includes in "Monday" of *A Week*, and which reads, "[y]et I doubt not thro's the ages one increasing / purpose runs, / And the thoughts of men are widen'd with / the process of the Sunns" (124). In this passage, the energetic "process of the Sunns" broadens the minds of "men," and is part of an "increasing" "purpose" running through time. In other words, Tennyson is presenting an image of hope and progress that is intrinsically connected to the energy of nature, much like Thoreau does in both "Walking" and *A Week*. Being both directional and cyclical, this progressive purpose forms a sort of spiral, ascending through nature's cycles to some unknown point or pinnacle that will, itself, be swallowed up, marking both a beginning and an end.

Thoreau very much connects this hope and vision to the idea of a "new world," and thus, to "America," if only as an ideal. In "Friday," the last day of *A Week*, he writes, "[i]t is easier to discover another such a new world as Columbus did than to go within one fold of this which we appear to know so well" (383). In this passage Thoreau is saying that it is easier to discover a "new world" in the manner in which Columbus discovered America than to see nature directly through the fog of historical knowledge and tradition. Yet, he writes, "there is only necessary a moment's sanity and sound senses, to teach us that there is a nature behind the ordinary, in which we have only some vague preemption right and western reserve as yet. We live on the outskirts of that region" (383). Here Thoreau is saying that "behind the ordinary" nature subsists as a sort of "western reserve." Throughout our "ordinary" lives, we are ever skirting the edges of "that region," and thus living on a sort of frontier line between dissipated custom and immortal nature,

between the old world and the new. As Thoreau states elsewhere in *A Week*, "[t]he frontiers are not east or west, north or south, but wherever a man fronts a fact" (304). In other words, the frontier is potentially everywhere, and in order to be materialized demands only the shedding of customary knowledge and the direct apprehension of a "western" wilderness that is ubiquitous. As Thoreau puts it in "Walking," [t]he West of which I speak is but another name for the Wild" (209). And this "Wild" is not only to be found in the territories of the Louisiana Purchase, but "behind the ordinary" of everyday life. In his journal, Thoreau associates this western "Wild," or "new world," with America. He writes, "[h]ow novel and original must be each new man's view of the universe—for though the world is so old—& so many books have been written—each object appears wholly undescribed to our experience … The whole world is an America—a *New World*" (*Journal* 421). In this passage Thoreau identifies America with the experience of seeing the world anew, without the mediation of accumulated knowledge which can only ever describe or represent nature, but never present it in the unadorned purity of the "Wild". So, in a sense, as Kris Fresonke argues, "America is not America" for Thoreau (138). It is rather the ideal of the "Wild" as an ubiquitous and eternal presence, for, "in Wildness is the preservation of the World" ("Walking" 209).

A Week concludes "far in the evening" (393) when the curtains are falling on the "drama of the day." This "evening" thus marks the end of a day and the end of *A Week* and the end of the journey recounted therein: all natural cycles embedded in each other like a microcosm of the very "life that is in nature." On the shore of their "native port," the brothers tie their boat to a "wild apple tree" (390), a standing sentinel of that ubiquitous "Wild" that skirts every town like a frontier line encircling all. Having commended himself for *A Week* to "[t]he routine which is in the sunshine and the finest days" (217), Thoreau returns to civilization. "Friday" is the final day

of *A Week*. Yet, owing to the "apparent solidity and necessity" (217) of that daily "routine," for Thoreau, "the last day is not yet at hand."

Hawthorne: Energetic Liberal (aka Socio-Historical Conservative)

In *The House of the Seven Gables*, Holgrave, the daguerreotypist-reformer who inhabits a remote gable of the house, represents the energetic conservative/socio-historical liberal position that I have identified with Emerson and Thoreau. While his transformation to a more moderate position towards the story's end does qualify this characterization somewhat, it is nonetheless fitting for the most part. In one instance, conversing in the garden with Phoebe, he says, "what a good world we live in! How good, and beautiful! How young it is, too, with nothing really rotten or age-worn in it!" (Hawthorne *HOSG* 214). He further adds, "[c]ould I keep the feeling that now possesses me, the garden would every day be virgin soil, with the earth's first freshness in the flavor of its beans and squashes; and the house!—it would be like a bower in Eden, blossoming with the earliest roses that God ever made" (214). Holgrave, like Emerson and Thoreau, feels that the world has preserved its youthfulness from the "first day" of creation to the nineteenth century C.E, and, consequently, that no fall from grace has taken place. Like them, he is an energetic conservative. This position is reflected in his role as a daguerreotypist who uses the sunlight to capture and preserve images of the world. Holgrave's conservatism and desire to preserve does not, however, extend into the socio-historical realm. Elsewhere, he says that, "in this age, more than ever before, the moss-grown and rotten Past is to be torn down, and lifeless institutions to be thrust out of the way, and their dead corpses buried" (179). Also, like Emerson and Thoreau, he views dissipation and decay as the result of socio-historical stagnation, easily reversible through liberal action. This combination of energetic conservatism and socio-historical liberalism, promising, on the one hand, an undiminished natural world, and, on the other, the

possibility of a clean socio-historical slate, leads Holgrave to optimistically affirm, along with Emerson and Paine, that "everything [will] begin anew" (179).

Hawthorne does not share Holgrave's optimism. To the former, as one critic bluntly puts it, "[m]an is a fallen creature in a fallen world" and "[a]ny redemption possible for him is offered only on condition that he recognize this fact" (Waggoner 408). This description of Hawthorne resonates well with Melville's early contention that Hawthorne is possessed of a "Calvinistic sense of Innate depravity and Original Sin" which lends to his work its "mystical blackness" ("HHM" 374). For Waggoner, however, this "mystical blackness" has all the weight of "fact," an interesting choice of words in so far as it contrasts sharply with the "feeling" upon which Holgrave's vision of Eden depends. For the latter says that the world will bear the aspect of a new creation as long as "*I keep the feeling that now possesses me*." Taking both characterizations of Hawthorne as basically accurate, it is thus not difficult to hear the author, himself, when his narrator proceeds to reflect upon the subjective nature of Holgrave's perception of the world: "[m]an's own youth is the world's youth; at least, he feels as if it were, and imagines that the earth's granite substance is something not yet hardened, and which he can mold into whatever shape he likes. So it was with Holgrave" (Hawthorne 179). The youthfulness that Holgrave sees in the world is the result of his feeling and imagination. It is not objectively the case. Hawthorne further writes, "he [Holgrave] was a young man still, and therefore looked upon the world—*that gray-bearded and wrinkled profligate, decrepit, without being venerable*—as a tender stripling, capable of being improved into all that it ought to be, but scarcely yet had shown the remotest promise of becoming" (179 my emphasis). Holgrave's perception of the world is that of a "tender stripling" that is capable of improvement through human action, though all of history belies such a prospect. The reality, as represented in the novel, is that the world is a "gray-

bearded and wrinkled profligate." In other words, it is old and wasted. Hawthorne's position is that of an energetic liberal. The counterpoint of this position is a socio-historical conservatism that can be seen in the connection that he draws between the world's "decrepit" and "profligate" state and the Christian doctrine of original sin, the latter representing both a religious tradition and a theory of succession that brings the past ever to bear upon the present. This connection also represents, for Hawthorne, the only true source of promise for creation.

Like William Thomson, also of a strict Calvinist background, Hawthorne does believe in the possibility of a new creation. But such a prospect depends entirely on the grace of a transcendent God and on humanity's recognition of its own insufficiency, as well as that of the natural world. This is a far humbler vision of world renewal than that espoused by Holgrave in the previous quote. The latter, based as it is on the energetic conservatism of nature and progressive human action, has no need of God, and thus elevates humanity and nature in His stead. Hawthorne, through his narrator, does not condemn Holgrave for seeing things this way. Rather, he chalks it up to youthful error that will likely be corrected in time. With the tempering of age, Hawthorne believes that Holgrave, and, consequently, Emerson and Thoreau, will "still have faith in man's brightening destiny, and perhaps love him all the better, as he should recognize his helplessness in his own behalf" (180). Then, he/they will realize that "man's best-directed effort accomplishes a kind of dream, while God is the sole worker of realities" (180). Here, again, there is a contrast between a subjective perception, in this case, a "dream," and objective reality. In the former instance, a perception of the world's youthfulness was the product of feeling and imagination, whereas its decrepitude and profligacy were the true state of affairs. In this instance, humanity's natural "effort" results in a "dream" of world renewal, while God accomplishes the actual work.

The House of the Seven Gables is about this work of renewal that can only be realized through God's grace. Roy R. Male has argued that the "central metaphor" of the novel "is drawn from the process of evolution" (429). According to Male, Hawthorne's main concern is with the "moral aspects of what in modern terms would be called the 'ontogenetic problem'" (431). This means that Hawthorne is primarily concerned with how moral deviancy is transmitted from generation to generation and how regeneration is to be achieved. While moral regeneration is similar to the renewal that God "works" in the novel, the focus on the evolutionary process as applied to moral deviancy overlooks the centrality of energy as both a physical and moral force in the world of the novel. A close reading of the text clearly reveals an energetic undercurrent that is given more credence by the theological dimension of the doctrine of energy as formulated throughout the 1850s and 60s. It will be recalled that William Thomson's axiom of dissipation was intrinsically linked to the doctrine of original sin and the world's consequent fallen state. *The House of the Seven Gables*, published in 1851, just a year prior to Thomson's publication of "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy," also relates these phenomena, making the "central metaphor" of the text derivative of the process of energetic dissipation rather than that of evolution.

The House of the Seven Gables should be read as an energetic allegory in which the Pyncheon family, represented most fully in the characters of Hepzibah and Clifford Pyncheon, play the role of a dissipated race that has fallen from God's grace. Described with adjectives such as "torpid" (31), "sluggish[]" (76), and "[f]eeble" (Hawthorne 107), these central characters are energetically depleted, lacking the full force of action. This contrasts with the "iron energy of purpose" (7) of their earliest progenitor in the novel, Col. Pyncheon, the author of the original Pyncheon sin. Hepzibah and Clifford are living at the end of an energetic process that was set on its dissipative

course by Col. Pyncheon at the time of the Salem witch trials, a period closely connected with America's genesis. The Pyncheon house, built by the Col. on cursed ground, is the fallen world that this dissipated race fatefully inhabits. Originally cursed as it is, this world comes down to each new generation as an evil inheritance in a direct line of succession having all the "energy of disease" (23). Because it is a closed world, lacking natural sources of energetic renewal, the latter must come from outside in the form of supernatural grace. This comes, primarily, through Phoebe, a distant relative, who is described throughout much of the novel in spiritual terms. Though she is often associated with sunlight, and though this association is strengthened by her name, derived as it is from *Phoebus Apollo*, Phoebe is an agent of spiritual restoration helping to return the world to its original splendour from the darkness of dissipation. It must be noted that this darkness is not simply of a socio-historical nature and, thus, renewal is not simply a matter of returning to some "heathenish integrity." In the world of the novel, energetic dissipation runs much deeper than socio-historical forms and norms. Phoebe's association with sunlight and the pagan god is simply meant to emphasize the fact that the new creation she represents is not *another* creation, but this creation, renewed by grace. For Hawthorne, as for William Thomson, it is only this supernatural energy that can properly restore a dissipated world.

The idea of ancestral succession, and so of "time's arrow," is at the forefront of the novel. In the opening chapter, Hawthorne describes the story's moral in the following terms: "the act of the passing generation is the germ which may and must produce good or evil fruit, in a far distant time … together with the seed of a merely temporary crop, which mortals term expediency, they inevitably sow the acorns of a more enduring growth, which may darkly overshadow their posterity" (6). This explicit statement of the theme of ancestral succession, alluding to "fruit" of "good and evil," evokes the idea of the "fall of man," that pivotal "act" that forever darkened the

horizon of posterity, symbolically associating it with the fall of the Pyncheon race. In the novel, the darkened horizon of ancestral succession that this fall produced belongs to both the human and the natural world as manifested in and around the Pyncheon estate. Thus, in preparation of opening her shop, Hepzibah is described as wiping away "festoons of cobweb, which it had cost a long ancestral succession of spiders their life's labor to spin and weave" (35). In this seemingly insignificant description, the life's work of generations of spiders comes to nothing at a stroke. An example that is dwelt upon at more length and is more indicative of the flight of time's arrow is seen in the chickens which are kept in the Pyncheon garden. These chickens represent "a breed which had been transmitted down as an heirloom in the Pyncheon family, and were said, in their prime to have attained almost the size of turkeys" (88). However, "the hens were now scarcely larger than pigeons, and had a queer, rusty, withered aspect, and a gouty kind of movement, and a sleepy melancholy tone" (88-89). As a "race," they have "degenerated" (89). While the term "degenerated" does evoke the idea of heredity through evolutionary lines, the description of the hens' "gouty movement" and "sleepy melancholy tone" clearly connotes the idea of energetic dissipation. Male argues that, "[l]ike Hepzibah, the chickens have degenerated because they have been kept too pure as a species" (431). For evidence, he quotes Hawthorne who writes, "[t]hese feathered people had existed too long in their distinct variety" (89). Male thus surmises that Hawthorne has adopted an "essentially genetic point of view" (431). I would argue, rather, that Hawthorne has adopted an essentially energetic point of view. For Hepzibah and the chickens belong to what, in the language of classical thermodynamics, is called a "closed system," which means an isolated environment lacking means of natural renewal. According to thermodynamic thinkers such as William Thomson, the universe itself was just such a system, and, for this reason, was tending towards a state of maximum entropy, dependent for renewal on transcendent

grace. As an energetic allegory of a fallen world, the Pynchon property represents such a closed system in which both humanity and nature, "fallen" from a former state of grandeur or grace, are trapped in a process of energetic dissipation that, if left unredeemed by grace, will lead through ancestral lines to a state of complete dissipation.

The Pyncheon house, symbol of a fallen world, is the closed system that Hepzibah inhabits on her dissipative trajectory. Upon introducing her to the reader, Hawthorne writes, "[t]he old maid was alone in the old house" (30). This short passage emphasizes both Hepzibah's isolation, as well as the fact that both she and the house are "old." It is then said that "for above a quarter of a century gone-by, [Hepzibah] has dwelt in strict seclusion; taking no part in the business of life, and just as little in its intercourse and pleasures" (31). This is followed by a description of her as a "torpid recluse, looking forward to the cold sunless, stagnant calm of a day that is to be like innumerable yesterdays" (31). As a consequence of her "strict seclusion," Hepizbah is "torpid," meaning "inactive." Looking forward to her day, she sees only the "cold, sunless, stagnant calm" that has characterized so many of her days. This almost seems like a description of heat death, in which the sun has spent all of its energy, leading to the "cold" and "stagnant calm" of energetic exhaustion. Elsewhere in the novel Hepzibah laments, "[t]he world is too chill and hard—and I am too old, and too feeble, and too hopeless" (44). In this instance, her feebleness and hopelessness lead her to sadly exclaim, "I wish I were dead, and in the old family tomb, with all my forefathers" (44). But on the first day of her story, when she is to open her little cent-shop for the first time, she beseeches grace from on high, sending forth an "agony of prayer—now whispered, now a groan, now a struggling silence" (30-31). For left to her own natural course, Hepzibah is on a path of "inevitable doom" (34), in which she will indeed be just another corpse in her "family tomb," joining all those who have tread a similar path of dissipation to death. She

is very close to being one now. But in this instance, though she is "scarcely friends with Him above" (168), with a dissipating prayer she seeks "[d]ivine assistance through the day" (31). In other words, in her feeble and fallen state she asks a transcendent God for the supernatural energy, or grace, she needs to get through the day's work.

Hepzibah's prayer does seem to receive an answer, insofar as her first day in business sees her, at times, enlivened and renewed. Behind the counter of her cent-shop, Hepzibah feels "the novelty of her position," and "the thrill of almost youthful enjoyment" from the "invigorating breath of a fresh outward atmosphere, after the long torpor and monotonous seclusion of her life" (51). In this description, Hepzibah, the "old maid," feels "youthful enjoyment" and "novelty" from the "invigorating breath of a fresh outward atmosphere" (51). I would argue that the latter phrase is an allusion to the transcendent God who, in the creation story of Genesis, gives to man the animating breath of life. For in the novel, transcendence is the only "outward atmosphere" capable of penetrating an isolation as moral as it is social. And since Hepzibah's cent-shop is still very much in the Pynchon house, she has not really opened herself to any outside influence, except through her feeble morning prayer. While her experience of "novelty" does follow her first business transaction, this alone, and taken at face value, would not have such an "invigorating" effect. Following the transaction, Hepzibah feels that "[t]he structure of ancient aristocracy had been demolished," that her first customer "had torn down the seven-gabled mansion," freeing her from "the empty breath of her ancestral traditions" (51). Marius Bewley argues that the novel contains a "kind of debate between the respective claims, on the one hand, of the past, inherited wealth, and aristocratic status; on the other, of the present, and of democratic equality, both financial and social" (442). From this perspective, Hepzibah's sense of renewal would stem from the shedding of aristocratic strictures and the venturing forth into the

democratic atmosphere of social equality and financial independence. Yet in light of Hawthorne's views on sin and the weight of history, such an experience, on Hepzibah's part, would have to be delusive. Unlike Emerson and Thoreau, Hawthorne believes that stagnation and decay are not merely the result of dead socio-historical forms, the shedding of which will reveal the full vitality of an ever-new creation. Such a view would make Hawthorne an energetic conservative/socio-historical liberal. Rather, death and dissipation, the result of original sin, are embedded in the world represented by the House of the Seven Gables. So, though Hepzibah duly feels that "[t]he structure of ancient aristocracy had been demolished," this must be read in light of the following references to the destruction of the "seven-gabled mansion" and freedom from the "empty breath of her ancestral traditions." The latter, embodied in the former "structure," and founded on the original sin of Col. Pyncheon, represents a legacy of sin, a long emptying of breath. The "invigorating breath" that frees her from this can only come from God, though He uses a school-boy to deliver it. For it is further said that Hepzibah's first transaction "inspired her with energy" (Hawthorne 52). "Inspiration" is etymologically connected to both "spirit" and "breath," and in this passage, both are connected to "energy." Thus, the energy that reinvigorates Hepzibah on her first day of work comes from the spirit or breath of God. In other words, God bestows grace upon Hepzibah in response to her feeble prayer for assistance.

The most important agent of God's supernatural energy in the novel is, however, Phoebe, Hepzibah's distant cousin who also arrives on Hepzibah's first day of work as a further answer to her prayer. As previously mentioned, Phoebe's name is etymologically connected to *Phoebus Apollo* and, thus, to sunlight. Throughout the novel, she is often associated with images of sunlight. In fact, when she first arrives at the Pynchon house and is standing at the doorway of the gloomy abode, she is compared to a sun beam: "even as a ray of sunshine, fall into what

dismal place it may, instantaneously creates for itself a propriety in being there—so did it seem altogether fit that the girl should be standing at the threshold" (68-69). She is further described as being "as pleasant, about the house, as a gleam of sunshine falling on the floor through a shadow of twinkling leaves" (80). By connecting this imagery with the description of Phoebe's "active temperament, finding joy in its activity," it is easy to fall into the error of associating her with purely natural energy or work. Yet she clearly represents God's supernatural energy, as evident in the following:

> There was a spiritual quality in Phoebe's activity. The life of the long and busy day—spent in occupations that might so easily have taken a squalid and ugly aspect—had been made pleasant, and even lovely, by the spontaneous grace with which these homely duties seemed to bloom out of her character; so that labor, while she dealt with it, had the easy and flexible charm of play. Angels do not toil, but let their good works grow out of them; and so did Phoebe. (82)

In this passage, Phoebe is described as performing her work through "spontaneous grace." Much like the "Angels" whose "good works grow out of them," Phoebe's "duties seem to bloom of out her character." In both these descriptions, work is regarded as the flower of supernatural energy. Phoebe's "activity" is said to possess a "spiritual quality." Uncle Venner says, "I never knew a human creature do her work so much like one of God's angels, as this child Phoebe" (82). The "spiritual" work she is performing is the renewal of a dissipated and fallen world. Her connection to sunlight and the pagan god is, once again, meant to emphasize that it is not *another* creation but this creation that she is set to renew through grace.

An example of this work of renewal can be seen on the first morning of Clifford's return from prison. Upon rising, Phoebe finds Hepzibah "ablaze with heat and hurry," preparing breakfast for

the yet mysterious guest (100). Hawthorne writes, "[b]y way of contributing what grace she could, Phoebe gathered some roses and a few other flowers, possessing either scent or beauty, and arranged them in a glass pitcher, which, having long ago lost its handle, was so much fitter for a flower vase" (101). The passage states that Phoebe was "contributing what grace she could" to the scene of Clifford's arrival. While on a superficial level, "grace," in this case, simply refers to the flower arrangements that Phoebe produces, on a deeper level, Hawthorne is referring to God's renewing energy. For directly following this passage is one that contains an obvious allusion to the Garden of Eden: "[t]he early sunshine—as fresh as that which peeped into Eve's bower, while she and Adam sat at breakfast there—came twinkling through the branches of the pear-tree, and fell quite across the table" (101). There is no question that Hawthorne believes in original sin. As previously stated, to Hawthorne, "man is a fallen creature in a fallen world." In light of this "fact," how is the sunshine, on the first morning of Clifford's home coming, "as fresh" as that of Eden, humanity's dwelling place prior to the fall? The only possible answer that is in keeping with the world Hawthorne portrays in the novel is that it is the direct result of Phoebe's work of renewal accomplished through supernatural grace. This seems further alluded to by the fact that the "early sunshine" is said to fall "*quite across* the table." Though easily overlooked, this sentence is extremely rich in symbolism. Using the term "quite" before "across" is meant to draw attention to the latter, which, as "a cross," is the symbol of grace and renewal. Thus, the "early sunshine" of Eden, subject to a fall, is then returned to its splendor through "a cross," a symbol of grace, like Phoebe.

Clifford represents an energetically dissipated being to an even greater extent than Hepzibah. Having returned home from prison, which, for him, was part and parcel of the Pyncheon family curse, he becomes an ever-lethargic presence in the already gloomy mansion. Much of his time is

spent in slumber. The rest of it is spent sitting around the house, or in the garden, "with a dim veil of decay and ruin betwixt him and the world" (106). Yet even upon this most ruined of men, the "graceful" (80) Phoebe has an enlivening effect. Throughout the day, as she performs her work, Phoebe falls into song, while Clifford "sit[s] quietly, with a gentle pleasure gleaming over his face, brighter now, and now a little dimmer, as the song happened to float near him, or was more remotely heard" (138). The proximity of Phoebe's voice in song determines the brightness of the gleam, or light, shining forth from Clifford's darkened visage. To Clifford it seems that "God, in requital of his bleak and dismal lot, had permitted some angel, that most pitied him, to warble through the house" (142). The energy that Phoebe transmits to Clifford through song is thus given spiritual significance. Elsewhere it is said that "Phoebe's presence, and the contiguity of her fresh life to his blighted one, was usually all that he [Clifford] required" (139). In other words, Phoebe's youthfulness, imbued as it is with "spiritual force" (137) and "heaven-directed freedom" (143), helps revive Clifford from his "half-lifeless" (142) state. As an agent of grace, Phoebe helps renew Clifford's dissipated life.

One way Phoebe effects this renewal in Clifford's life is by encouraging him to take in some of the life of Pyncheon Street from an arched window on the second story of the house. There, partially cloaked by a curtain, Clifford observes the street life from which he has, for so long, been estranged. One day, he observes a scene which the author uses as an opportunity to reflect upon the theme of energy and its dissipation. An Italian street performer with a monkey and a barrel organ, the case of which contains a scene of miniature figurines which respond to the organ's music, sets up in front of the Pyncheon house. The figurines are described in the following way: "[i]n all their variety of occupation—the cobbler, the blacksmith, the soldier, the lady with her fan, the toper with his bottle, the milk-maid sitting by her cow—this fortunate little

society might truly be said to enjoy a harmonious existence, and to make life literally a dance" (163). For, "[t]he Italian turned a crank; and behold! every one of these small individuals started into the most curious vivacity" (163). Though this miniature world is described as "harmonious" and vivacious, it is essentially a mechanical contrivance. In so far as it is a symbol of life, it is one of mechanical life. Hawthorne uses this scene to reflect more darkly upon life, work and the expenditure of energy. Referring to the unknown creator of the contrivance, he writes:

> Possibly, some cynic, at once merry and bitter, had desired to signify, in this pantomimic scene, that we mortals, whatever our business or amusement—however serious, however trifling—all dance to one identical tune, and, in spite of our ridiculous activity, bring nothing finally to pass. For the most remarkable aspect off the affair was, that, at the cessation of the music, everybody was petrified at once, from the most extravagant life into a dead torpor. (163)

The scene of mechanical motion in which all "mortals" "dance to one identical tune" is depicted, in this grim reflection, as one of utter futility. All activity, the result of purely mechanical energy, finally comes to nothing but a "dead torpor." The "cessation of the music," which is to say, the cessation of energy, equals the cessation of all phenomena. This is essentially a metaphor for entropy. Why, then, if Hawthorne is an energetic liberal, for whom something like the second law applies, does he end the reflection by "reject[ing] the whole moral of the show" (163)? It is important to note that, in the novel, this scene comes shortly after the episode in which Clifford is enlivened by Phoebe's music. It thus forms a point of comparison with the earlier scene. In both scenes, music is a form of energy that animates inanimate or practically inanimate beings. The major difference is that in the latter scene the energy of the music is mechanical, meaning natural. In the earlier scene, Phoebe, who is likened to an "angel" "warbl[ing] through the

house," infuses her song" with "spiritual force." The energy that animates Clifford is, therefore, supernatural, at least in part. In the latter scene, Hawthorne is not rejecting the idea of energetic dissipation, but, rather, the reduction of the universe to blind mechanism. Such a view of the universe would make energetic dissipation a simple matter of course, rather than the result of some original sin, with the attendant hope of renewal/redemption. In such a case, God would be either nonexistent, or a "cynic," humans would be little more than monkeys, and hope of renewal would be out of the question.

The final scene of renewal occurs when Phoebe returns from her trip to the country to find Hepzibah and Clifford gone and Holgrave alone in the house with the corpse of Jaffrey, or Judge Pyncheon, Clifford's merciless persecutor. Holgrave describes the experience of being alone in the house with the dead judge: "[t]he presence of yonder dead man threw a great black shadow over everything; he made the universe, so far as my perception could reach, a scene of guilt, and of retribution more dreadful than guilt. The sense of it took away my youth. I never hoped to feel young again!" (306). Unlike Holgrave's previous experience of the world as "good," "beautiful" and "young," he here views it as something "dreadful" which causes him to feel old. He looks into the future and sees nothing but "a shapeless gloom" (306). Furthermore, this sudden sense of dissipation and deformation of the world around him is connected to "guilt." For upon seeing the corpse of Jaffrey Pyncheon, the universe, he says, had become a "scene of guilt." This is an obvious allusion to original sin. It is evoked through the character of Jaffrey because he is the contemporary type of Col. Pyncheon, the progenitor of the dissipative New England Pyncheon line. Holgrave has stepped over the energetic divide and seen the world as old and dissipated as a result of the fallen state of humanity and nature. And yet Holgrave says, "Pheobe, you crossed the threshold; and hope, warmth, and joy, came in with you! The black moment became at once a

blissful one. It must not pass without the spoken word. I love you!" (306). When Holgrave says that "[t]he black moment became at once a blissful one," he is evoking the Christian idea of *felix culpa*, or "happy fault." According to Saint Augustine, a Catholic whose ideas on original sin greatly informed Calvinist theology, it is the idea that God "judged it better to bring good out of evil than not to permit any evil to exist" (33). In other words, God allowed the fall for the sake of redemption, dissipation for the sake of renewal. Without the "black moment" of dissipation there could be no "blissful one" of renewal. This bliss is articulated in Holgrave's profession of love. Not only is love the supreme theological virtue, surpassing those of hope and faith, but Holgrave is secretly a descendent of Matthew Maule, the victim of Col. Pyncheon, and can, therefore, be an agent of forgiveness. In other words, the love that Holgrave professes for Phoebe represents the reconciliation of the Maules and the Pyncheons, and thus, reverses the effects of the original Pyncheon sin. This love is actually described as changing the natural world: "They transfigured the earth, and made it Eden again, and themselves the two first dwellers in it. The dead man, so close beside them was forgotten. At such a crisis, there is no Death; for Immortality is revealed anew, and embraces everything in its hallowed atmosphere" (Hawthorne 307). Like Emerson, Thoreau, and the immature Holgrave, the couple finds the natural world as it was on the first day of creation, before the fall of man. And yet unlike in the visions of the former three, this was not affected by social reform and the revelation of a natural world that actually remained unchanged, but by passing through the "black moment," when the world was seen as old and dissipated, to the "blissful one," when forgiveness and love transfigured creation. In this instance, the narrator offers no caveat explaining the experience away as subjective. In fact, directly following the previous quote, we read, "[b]ut how soon the heavy earth-dream settled down again" (307). A clear reversal has taken place so that now the "heavy" world of earthly death and dissipation is

the dream, whereas reality is the "hallowed atmosphere" of a new creation. To this new creation, Hepzibah and Clifford return from their wayward journey and begin life anew with the happy couple, leaving the Pyncheon house to live in the country.

Hawthorne's energetic vision has implications for the idea of "America." In viewing both humanity and nature as dissipated, Hawthorne opposes the American visions of Emerson and Thoreau. Both the latter, as previously shown, view dissipation as the result of stagnant socio-historical forms associated with custom and tradition. Nature, on the other hand, including human nature, is ever-vital and new. In identifying America with this nature, either as a nation (Emerson) or an ideal (Thoreau), the energetic conservative authors associate America with the world's renewal. For Hawthorne, the world's renewal can only be accomplished through the supernatural grace of a transcendent God. This means America is not exceptional for Hawthorne in the sense in which it is for Emerson and Thoreau. For Hawthorne, it is not enough to throw off the yoke of old socio-historical forms and identify yourself with nature in order to be renewed. For nature itself and especially human nature, is terribly old. As "the dark-visaged stranger" from "Earth's Holocaust" says of the "human heart" after having witnessed the purification of the world of every conceivable social ill, "unless they hit upon some method of purifying that foul cavern, forth from it will re-issue all the shapes of wrong and misery—the same old shapes, or worse ones—which they have taken such a vast deal of trouble to consume to ashes … Oh, take my word for it, it will be the *old world* yet" (197 my emphasis). This "stranger" is obviously the devil and the "old world" he predicts is the fallen world that cannot be so easily renewed. For as Hawthorne subsequently argues, man's "endeavor for perfection" is forever hampered by "the fatal circumstance of an error at the very root of the matter" (197). This "error at the very root of the matter," original sin, is also the error at the root of matter, giving the material world, and thus

America, a far darker significance. Whether the world was “old” and the product of energetic dissipation, or “as good as new” and the product of energetic conservation, meant literally a world of difference to nineteenth-century American writers trying to make sense of their place and time.

Chapter Three: Mechanical Labor and Wasted Life

Just as nineteenth-century physicists, under the influence of the emerging science of thermodynamics, used the metaphor of the motor, or heat engine, to understand the energetic processes of conversion and loss at work in the universe[16], so physiologists and social scientists used it to understand the processes at work in humans and society at large. In an essay from 1854 titled "The Interaction of Natural Forces," Hermann von Helmholtz writes, "[s]ince. . . we have learned to discern in the steam-engine this origin of mechanical force, we must inquire whether something similar does not hold good with regard to men" (36). Helmholtz goes on to describe the process of metabolism as a form of combustion which generates heat which can then be transformed into human labor. He thus concludes that "[t]he animal body … does not differ from the steam-engine as regards the manner in which it obtains heat and force, but does differ from it in the manner in which the force gained is to be made use of" (37). While Helmholtz is still using the Newtonian language of "force," rather than the new language of "energy," he is essentially describing the energetic processes common to living beings and machines, while merely noting that the energy, or force, common to both must be harnessed by different means. Taking a broader view, Marx sees "[l]abour power [as] the motor of history" (Rabinbach 79). Defining labor-power as the "capacity for labour" (Marx *Capital* 1: 270), and labor itself as the process by which humanity acts upon nature "as a force of nature" (283), he draws upon the concept of energy as the "capacity to do work" and work as the conversion of force through mechanical action. Thus, as Anson Rabinbach notes, "Marx's philosophy of history is largely indifferent to the qualitative distinction between human labour power . . . and any other 'inorganic' productive

[16] This is best exemplified in Thomson's "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy" which extrapolated from Carnot's findings about heat engines to elaborate an energetic cosmology of inevitable dissipation.

force in nature or in technology" (78). Marx, like Helmholtz, views humans and machines analogously as mediators of natural force but elevates this view to one of greater historical significance.

In order to be intelligible, this analogy between humans and machines relied on the new physical quantity of energy as the universal measurement of all work. According to the "energeticist model of mechanical work," "[t]he work performed by any mechanism, from the fingers of the hand, to the gears of an engine, or the motion of the planets, was essentially the same" (47). Due to the fact that all natural forces were energetically equivalent, any mechanical motion, whether human, technological, or cosmic, represented a form of energetic conversion. Yet as a result of the Janus-faced character of the laws of thermodynamics, this equivalency between humans, machines, and the cosmos at large, could only be a blessing and a curse. For just as the energetic output of the sun, as noted by William Thomson, included a definite quantity of wasted heat, and just as the cycle of the steam engine, as described by Sadi Carnot, included the same, so, as Marx argued, humans could not labor mechanically without being subject to an analogous form of energetic loss. Through the process of laboring, "a certain amount of the worker's muscular force etc. is . . . expended, so that he exhausts himself" (*Capital* 1: 300). The "etc." that Marx refers to is what, in *Capital*, he calls "the aggregate of those mental and physical capabilities existing in the physical form, the living personality, of a human being, capabilities which he sets in motion whenever he produces a use-value of any kind" (1: 270). It is these "mental and physical capabilitites" that, according to Marx, are exhausted through the process of mechanical labor in a way that is analogous to the waste generated by the mechanical processes of machines.

This chapter is about the wasted life of humans that labor like machines. It focuses both on the waste described by Marx as the physical/psychological result of mechanical labor and on what, lacking a better term, could be described as the spiritual waste that is the result of reducing humans to mechanical beings. As Nicolas Bromell has pointed out, the nineteenth century was a period in which the categories of matter and mind, or body and spirit, largely determined the discourse on work and its human meaning (22). That being the case, it makes sense that the same categories would apply to the discourse on waste, work's negative corollary. The dominance of these categories, in turn, reflects the fact that the nineteenth-century was a period of transition in which a predominantly idealist worldview was giving way to a predominantly materialist one. In "The Transcendentalist" of 1842, Emerson presents the two worldviews as perennially on equal ground, writing, "mankind have ever divided into two sects, Materialists and Idealists; the first class founding on experience, the second on consciousness" (93). Yet Emerson's observation notwithstanding, there is no doubt that the nineteenth century was a period in which materialism was fast gaining ground. Marx describes this gain negatively in *The German Ideology* (1932) as the "putrescence of the absolute spirit" (27), the latter referring to the ideal substance/subject of consciousness that determines the course of history in Hegelian philosophy. For Emerson it becomes the far less thought-out "Over-Soul." Its "putrescence" marks an inversion according to which "[l]ife is [no longer] determined by consciousness, but consciousness by life" (38), by which Marx means the material conditions of life's reproduction.

Because of this tension between idealism and materialism that, in many ways, defines the nineteenth century, I have decided to present the idea of wasted life in two ways, both of them pertaining to the dissipation of energy, and both resulting from mechanical labor, but one according to a generally idealist, and one, a generally materialist worldview. In the first case,

wasted life will be contrasted with the classical idea of the good life, which, essentially, means the contemplative life, or life of the mind. The Aristotelean category of *energeia* will be used to describe the realization of the human form in intellectual contemplation through a life of leisure. Energetic dissipation will refer to the deformation of the human soul, or mind, through excessive labor. This type of dissipation is the result of reducing humans to machines rather than the result of their mechanical labor as machines. While it may appear somewhat anachronistic to use the Aristotelean category of *energeia* in this manner, it is not so. Thoreau, to whom this category of ideal energy will largely be applied, was not only quite familiar with Aristotelean philosophy, but has begun to be read alongside thinkers such as Aristotle as a virtue ethicist concerned with the question of the good life[17]. Furthermore, the concept of *energeia,* as employed by Aristotle*,* is the metaphysical original from which our concept of physical energy is derived.[18] Using it thus gives something of a genealogy of the concept that is especially noteworthy in the context of the nineteenth-century tension between mind and matter as foundational principles. For it is as if the reduction of humanity to machinery and the reduction of energy to a physical quantity occurred in tandem. It is thus worthwhile to examine them accordingly. So, establishing the relevance of Aristotelian *energeia* in the context of nineteenth-century thought on work and waste in the first section on Thoreau, the dissipation of this ideal energy, resulting from the reduction of humanity to machinery, will function, to varying degrees, as a background supposition in the other sections of the chapter which will focus, largely, on the experience of humans as machines. Having this background supposition will help provide a common framework for the critique of humanity's

[17] See Philp Cafaro's *Thoreau's Living Ethics* (2004) and Brian Treanor's "The Virtue of Simplicity: Reading Thoreau with Aristotle" (2007),

[18] *Energeia*, as used by Aristotle, refers to the "being-at-work" of a thing. While this "being-at-work" is irreducible to mechanical labor, involving, as it does, the actualization of intelligible form, it is easy to see how the modern concept of energy as the "capacity to do work" is derivative therefrom.

reduction to machinery which is present, whether explicitly or implicitly, in the all the texts that will be examined. In its second form, wasted life will be viewed in contrast to a physically and mentally fit life, which, basically, means a materially productive life. In this form, energetic dissipation will refer to physical/psychological exhaustion of the body/brain through the process of mechanical labor. This is the energetic dissipation that occurs to humans as machines. Noting this difference in how wasted human life is viewed in relation to labor will reflect the complexity of the transitional period between idealist and materialist worldviews in the nineteenth century as well as illustrate the manner in which notions of energetic waste applied to human experience prior to the advent of industrial modernity and continued to inflect the latter's energetic models through literary culture well into its reign.

The chapter will begin by looking at sections of Thoreau's *Walden* (1854), mostly limited to the first chapter, "Economy," in which Thoreau discusses the machine-like labor of his fellow citizens and the wasted life that follows therefrom. Sections of "Life Without Principle" (1863) and "Resistance to Civil Government" (1849) will also be discussed, but largely as secondary material to strengthen the primary argument about *Walden* and wasted life. Thoreau's conception of wasted life centers on the loss of freedom and the pursuit of intellectual contemplation, and thus contrasts with the classical notion of a "good life," albeit modified by his various modern influences.[19] Thoreau mixes idealism and vitalism so that the "good life" really means life at its fullest whereas wasted life means a mechanical non-life. The fullness of life is also described by Thoreau as a form of wakefulness, which I will link to Aristotle's notion of the actualization of the mind's energy. While Thoreau does briefly mention "manufacturers" (*Walden* 17) and the

[19] Philip Cafaro, for instance, notes that the Romantic concept of *Bildung*, or "self-culture," is a central aspect of Thoreau's conception of the "good life." He writes, "[t]o the ancient ethicists' emphasis on knowledge and virtue, the romantics added a new stress on individuality, authenticity, and creativity" (23).

"factory system" (18), his observations are, for the most, limited to agrarian forms of labor that are only beginning to intersect with the market economy, but are no less relentlessly mechanical for that. The chapter will then look at *Life in the Iron Mills* (1861) by Rebecca Harding Davis, which depicts the mechanical labor of mill workers in a nineteenth-century iron-works. The wasted life that Davis describes partakes of both forms of waste mentioned above. The lives of iron workers are viewed as wasted both in terms of the loss of higher human ends associated with beauty, truth, and the like, as well as in terms of the physical/psychological exhaustion of the body/brain. A third form of waste is seen throughout the text in the form of self-destruction ("wasting" oneself, or getting "wasted"), a reaction to the two primary forms of wasted life. This threefold sense of wasted life reflects a period of change in which a growing industrial economy, reflecting the newly materialistic basis of society, is incorporating "[m]asses of men" (Davis 12) into the "machinery of system" (19), thereby turning the good life into an impossible dream for many, and life itself into a hellish nightmare from which to escape. Finally, the chapter will look at two pieces by Melville, "The Paradise of Bachelors and the Tartarus of Maids" (1855) and "Bartleby, the Scrivener" (1853), both of which continue the theme of the hellish nature of mechanical labor, the former focusing on a factory setting and the latter on the setting of a Wall Street legal firm. The maids in Melville's Tartarean (hellish) paper-mill are incorporated into the machinery of industrial production and display the energetic dissipation that accompanies all mechanical work. The spiritual waste of their lives is inversely mirrored by the degenerate leisure of bachelors in "Paradise," creating a juxtaposition that exposes the spiritual wasteland created by a division of labor by which one class is reduced to machinery of production, and another, to machinery of consumption. Bartleby, a Wall Street scrivener, no less than the maids, represents humanity reduced to a mechanical function. His energetic dissipation in a middle-

class setting conveys the ubiquity of human mechanization and wasted life in the world of industrial modernity. At a time when the natural and social forces of the world were being redefined as manifestations of a multiform and ubiquitous energy that was to be harnessed in the service of modernity's relentless regimen of material production, these authors, through the exhausted figures they produced, reminded readers of the energetic loss that accompanies all mechanical processes, and of the greater loss of reducing humanity to such terms.

Walden and Wasted Life

Early in *Walden* Thoreau discusses the energetic process whereby nourishment is metabolised and turned into heat in the human body. Rather than evoking the image of an engine, though, Thoreau borrows a metaphor from the German chemist Justus von Liebig, according to whom "man's body is a stove, and food the fuel which keeps up the internal combustion in the lungs" (*Walden* 8). Though a stove differs from a steam engine, Thoreau's metaphor recalls that of Helmholtz in that both describe human metabolism as a form of combustion which generates the heat that is essential for humans. There is a slight difference in their emphasis, however. For whereas Helmholtz refers to "force" as the corollary of such heat, Thoreau refers to "life." He writes, "the expression, *animal life*, is nearly synonymous with the expression, *animal heat*" (8). He also joins the terms in referring to "vital heat" (8), that is, the heat that accompanies vitality, or life. In so far as Thoreau is describing "*animal heat*" as a cause of "*animal life,*" he is simply describing a mechanical process. And yet his concern with "life" and "vitality" as opposed to mere "force," as well as his declaration of the "nearly synonymous" relation of the two terms, raising the proverbial question of the chicken and the egg, points towards an underlying strain of vitalism in his thought. While there are many variants of vitalism, as a philosophy of life it generally does not deny the mechanical processes of nature, but, rather, views life as irreducible

to those processes. Robert Mitchell describes a particular Romantic strain of vitalism as being characterized by the belief that "life ha[s] laws separate from those of physics and chemistry" (5). If "physics and chemistry" represent the domain of mechanical processes, then life, governed by "separate" "laws," must be irreducible thereto. This is the position that Thoreau is expressing in his choice of words. He says the same thing more directly when he writes that modern man "has no time to be anything but a machine" (3). For this to be the case, he must, first, be more than a machine.

The vitalism in Thoreau's thought has been well noted. Branka Arsić argues that Thoreau is a "thinker obsessed with the problem of life in a properly ontological sense" (*BR* 19). She also argues that "in his philosophy life is afforded the status of a force[20] that precedes and generates all individuations and into which individual forms dissolve" (19). In Arsić's interpretation of Thoreau, life exists prior to and after all individual life forms, which may partake of mechanical processes, but are, nonetheless, also endued with this formless life force. In the introduction to the second part of *Bird Relics: Grief and Vitalism in Thoreau* (2016), Arsić discusses Thoreau's treatment of Aeschylus's *Prometheus Unbound,* where she contrasts a modern mechanical view of humanity with Thoreau's more classically vitalist conception. She notes that "[m]odernity has transformed Prometheus into a hero who, in stealing fire from the gods, brings technology and crafts to still natural humans" (117). Arsić points out that Thoreau, in contrast with this modern view, "accurately evoked Prometheus as a figure who, in the variety of formulations from Hesiod to Plato to Aeschylus, revives an earth devitalized by the gods, bringing life back to humankind," thereby making Prometheus "a vital force that restores life" (117). Thus, whereas industrialized

[20] Here, "life" is, itself, a "force." Arsić, however, does not mean mechanical "force" as does Helmholtz. Here, "force" means a fecund and generative self-organizing principle.

modernity views the Promethean fire as a sign of technology, or mechanical work, thereby betraying its reduction of life to work, and humans to machines, Thoreau, in accordance with a classical tradition, views the same as a sign of vitality, or life, which includes work, but rightly subordinates the latter to a higher dimension in which, alone, humanity's fullest potential can be realized**.**

It is the eclipse of this dimension and the loss of this potential through a life wholly consumed by mechanical labor that defines Thoreau's conception of wasted life. As noted, I have decided to designate this higher dimension "leisure" (Thoreau sometimes calls it "freedom"), and the life of which it is a part the "good life," thereby associating Thoreau with another classical tradition. In "The Virtue of Simplicity: Reading Thoreau with Aristotle" (2007), Brian Treanor makes a case for treating Thoreau as a "*virtue ethicist*" worthy of being read "alongside more canonical philosophers" (66). Treanor specifically reads Thoreau alongside Aristotle's *Nicomachean Ethics*, a text that poses the question of the good life. As such, Arsić' s earlier comment must be reworded to the effect that Thoreau represents a "thinker obsessed with the problem of life in a properly [ethical] sense." This ethical sense presupposes an "ontological sense," but much like Emerson, the question that Thoreau poses for himself and seeks to answer in much of his writing is as much "[h]ow shall I live?" ("Fate" 261) as "[w]hat is life?." This can clearly be seen in "Life Without Principle," where he proposes to consider "the way in which we spend our lives," arguing that the world "is nothing but work, work, work" and that "[i]t would be glorious to see mankind at *leisure* for once" (Thoreau 284 my emphasis). In fact, for Thoreau, knowledge of life as such and ethical living cannot be separated. Thus, in the same essay, he writes, "[h]ow can one be a wise man, if he does not know any better how to live than other men?" (289). The object of wisdom is right knowledge, and here it is inseparable from a good life. In *Thoreau's*

Living Ethics: Walden and the Pursuit of Virtue (2004), a title that joins the vital and the ethical, Philip Cafaro notes that, for Thoreau, a "knowledgeable relationship to nature" is "central to living a good life" (17). Here knowledge of the "life that is in nature"[21] and how to live are intrinsically related, the former being a means to the latter. But the relationship is not one of instrumentality, as though one acquired such knowledge and then went about one's business leading a good life. In fact, one could say that such knowledge is the good life in so far as the latter is a life of contemplation, as Aristotle famously formulates it:

> If happiness is activity in accordance with virtue, it is reasonable to expect that it is in accordance with the highest virtue, and this will be the virtue of the best element . . . That this activity is that of contemplation we have already said . . . For this is the highest activity, intellect being the highest element in us, and its objects are the highest objects of knowledge.[22] (*NE* 194-195)

Here "happiness," which is synonymous with the "good life,"[23] is described as a form of active knowledge. It is the pursuit of such active (energetic) knowledge, facilitated through leisure, that marks the difference, for Thoreau, between a good life and a wasted life. Whereas in the former

[21] It should be recalled that this is the term Thoreau uses for the vital principle in *Life on the Concord and Merrimack Rivers.*

[22] Contemplation, as I am using the term throughout the chapter, is not limited to the mystical and non-discursive contemplation that Hannah Arendt associates with the term, opposing it to all forms of activity, including speech, thinking and writing. Rather, as an engagement with the objects of the intellect, it includes those activities that Arendt views as outside its purview. In her terms, I am placing humanity's highest activities (thought, reading etc.) and contemplation together under the label of "contemplation" (which, as Aristotle argues, is an activity) and opposing them to labor, work and lower human activities, all of which are subsumed under the label "mechanical work/labor."

[23] Both are translations of *eudaimonia*.

ideal energy is conserved and realized as knowledge through leisure, in the latter it is wasted through excessive mechanical labor.

Thus, in a good life, labor is subordinated to leisure. Or as Aristotle puts it, "we work to have leisure" (195). It is not that labor is to be neglected or disparaged, for it is the necessary and natural basis of all leisure. As Hannah Arendt describes it, the classical good life "was 'good' to the extent that by having mastered the necessities of sheer life, by being freed from labor and work, and by overcoming the innate urge of all living creatures for their own survival, it was no longer bound to the biological life process" (37). [24] Thus, labor, or work, is a prerequisite for the leisure of the good life in so far as the latter depends on having first met one's basic biological needs. But if labor is not to be neglected or disparaged, neither is it to be elevated to an end-in-itself, consuming the better part of human lives, which, in so far as they are slaves of necessity, forsake the realm of human freedom, becoming mere machines.

These themes, that labor represents an important part of human life, but that it has its proper place in relation to higher pursuits, are both dwelt upon in some depth by Thoreau in the first chapter of *Walden,* aptly titled "Economy." In fact, much of "Economy" is spent delineating what Thoreau calls the "necessar[ies] of life" (*Walden* 7) in order to determine the degree to which life must be consumed by labor. These Thoreau reduces to "Food, Shelter, Clothing, and

[24] Though it is not obvious in this quotation, Arendt differentiates between labor and work so that the former represents the basic maintenance of biological life through the production of objects of consumption, whereas the latter represents the creation of durable goods which introduce a specifically human element into the world. In what follows (and in what has gone before), this distinction is not strictly maintained. The reason for this is that energy is defined as the "capacity to do work," with "work" referring to mechanical action. When applied to humans this category of "work" is often described as "labor." Furthermore, the terms are not distinguished by the primary authors I am examining. For instance, when Thoreau complains that the world "is nothing but work, work, work," it is hard to imagine that he is only referring to the production of durable goods and not to the production of objects of consumption as well. For these reasons the terms will be used interchangeably to denote mechanical action.

Fuel" (8). While such "necessaries" may be consumed to a greater or lesser degree according to human appetite, Thoreau is interested in delineating the bare "necessaries" that no human being could do without. He thus writes, "[b]y the words, *necessary of life*, I mean whatever, of all that man obtains by his own exertions, has been from the first, or from long use has become, so important to human life that few, if any, whether from savageness, or poverty, or philosophy, ever attempt to do without it" (7). Later, addressing the question of excess, he rhetorically asks, "[s]hall we always study to obtain more of these things, and not sometimes be content with less?" (24). And in "Life Without Principle," he goes so far as to say, "[c]old and hunger seem more friendly to my nature than those methods which men have adopted and advise to ward them off" (289). By so defining and restricting life's "necessaries," and being "content with less," to the point, at times, of "cold and hunger," Thoreau is able to determine the minimum amount of labor that a human life must perform, and conversely, the maximum amount of leisure that such a life may partake of.

William A. Gleason argues that, in *Walden,* Thoreau effectively collapses the categories of labor and leisure, the latter of which Gleason calls "play." Referring to an episode in "Spring" in which Thoreau alludes to the identity of God's work (creation) and play, Gleason argues that it "represents Thoreau's narrowing of the semantic gap between the two activities" (44). While it is certainly true that Thoreau brings a contemplative quality to his labor, as is evident in "The Bean Field" where he writes, "[i]t was a singular experience that long acquaintance which I cultivated with beans . . . I was determined to know beans" (*Walden* 108), this quality is likely the direct result of Thoreau's dedication to leisure and circumscription of labor. In other words, through so much time spent in leisure, which, as Gleason notes, was "anything but idle" (43) for Thoreau, the latter developed an intellectual quality which he could then bring to his labor. Furthermore,

using God as a prototype for humanity in terms of work/play is extremely problematic. Even if Thoreau cannot be regarded as an orthodox Christian (or, for the matter, Jew), the God-ordained necessity to earn your bread by "the sweat of your brow" is a biblical injunction (Gen 3:19) he obviously takes seriously. While he does seemingly contradict this injunction when he writes that "[i]t is not necessary that a man should earn his living by the sweat of his brow, unless he sweats easier than I do" (Thoreau *Walden* 48), he is not equating labor with leisure and thereby freeing man from the curse of necessity. If this were so, his descriptions of labor as "drudgery" (109), "penance" (2), and a form of self-slavery (4) would be meaningless. His meaning, rather, is that by needing less, one needs to labor less, and thus has more time free to "entertain the true problems of life" (8), which, for Thoreau, are intellectual in nature. In "Life Without Principle," he writes, "[t]hose slight labors which afford me a livelihood . . . are as yet commonly a pleasure to me, and I am not often reminded that they are a necessity . . . But I foresee that if my wants should be much increased, the labor required to supply them would become a drudgery" (287). There is here a direct correlation between the "slight[ness]" of labor and the pleasure it affords. For Thoreau limits labor to what, in *Walden,* is called *"*Morning work," adding in "Life Without Principle" that "[i]f I should sell both my forenoons and afternoons to society [through labor], as most appear to do, I am sure that for me there would be nothing left worth living for" (287). This is because, on the one hand, labor is meant to facilitate leisure, the fullest form of life, and on the other hand, leisure lightens the burden of labor.

Thoreau's criticism of his neighbors centers on the accusation that through mimetic and over-inflated appetites they have created necessities where there are, in reality, none, and have thus condemned themselves to lives consumed by unnecessary mechanical labor, at the expense of higher human pursuits. Thus, he writes, "[m]ost men, even in this comparatively free country,

through mere ignorance and mistake, are so occupied with the factitious cares and superfluously coarse labors of life that its finer fruits cannot be plucked by them. Their fingers from excessive toil, are too clumsy and tremble too much for that" (Thoreau *Walden* 3). It is important to take note of the adjectives that Thoreau uses to modify the various synonyms of work that he uses, such as "superfluous," "excessive," and "factitious." It is not labor that he is condemning, but unnecessary labor.[25] Thoreau, in fact, takes great pride in stating in the first sentence of *Walden* that, during his sojourn at Walden Pond, he lived in a house which he himself had built, and elsewhere laments the fact that "I never in all my walks came across a man engaged in so simple and natural occupation as building his house" (31). Building a modest dwelling place for oneself is natural and necessary, while acquiring large amounts of property, like the farmers Thoreau encounters, whether as a source of luxury or capital, is unnecessary and cumbersome. Thoreau writes, "I see young men, my townsmen, whose misfortune it is to have inherited farms, houses, barns, cattle, and farming tools; for these are more easily acquired than got rid of" (2). Viewing these people, he adds, "[t]he twelve labors of Hercules were trifling in comparison with those which my neighbors have undertaken; for they were only twelve, and had an end" (2). It is the "endless" (15) nature of his neighbors' labor that he decries, whether it is the result of luxury and dissipation (24), greed (3), or the "'industrious' . . . love [of] labor for its own sake" (47-48). In all such cases, "men have become the tools of their tools" (25), and thereby, become machine-like, wasting their lives in mechanical labor and so deforming their souls.

Unlike his neighbors, Thoreau, by being willing to make do with less, is forced to do far less. He writes, "[f]or more than five years I maintained myself . . . solely by the labor of my hands,

[25] "Unnecessary labor" is, of course, a contradiction in terms if we follow Arendt's logic too strictly, "labor" belonging to the realm of "necessity." And yet, the realm of necessity can seem greater or smaller depending on human appetite and greed, which seems to be Thoreau's point in criticizing his neighbors.

and I found, that by working about six weeks in a year, I could meet all the expenses of living" (47). This, he writes, left him largely "free and clear for study" (47). "Study," as used by Thoreau, includes the study of literature, the study of nature, and the study of self. As Jedediah Purdy writes, for Thoreau, "'the highest reality' came in contemplation, both of the self and of the world's natural wonders" (127). If we add to this the contemplation of great books, to which Thoreau devotes a whole chapter of *Walden,* we get a good picture of the life of the mind that, for Thoreau, man's labor is meant to facilitate. He says as much when he writes, "[w]hen [man] has obtained those things which are necessary to life, there is another alternative than to obtain the superfluities; and that is, to adventure on life now, his vacation from humbler toil having commenced" (Thoreau *Walden* 10). Here Thoreau describes two dimensions of "life," that of necessity, and that of freedom, the latter taking the form of an "adventure," or "vacation." For Arendt, "life" strictly refers to the life process, that is bare life, or *zoe*, that which necessitates endless labor. The extent to which humans free themselves from such is the extent to which they have risen above life,[26] that is, the extent to which they have risen above the level of animality. For Thoreau, on the other hand, life possesses a higher dimension to which humans may aspire once the minimum of labor has been fulfilled. This, once again, points towards the vitalism in his thought. Thoreau even defines the "cost of thing" as "the amount of what I will call life which is required to be exchanged for it" (21), and in "Life Without Principle," argues that "[t]here is no more fatal blunderer than he who consumes the greater part of his life getting his living" (288). By being willing to have fewer things, Thoreau is able to spend less time getting a living and thus more time studying, or contemplating, life.

[26] This could be done in the manner of Thoreau, that is, by reducing life's necessities, or through the exploitation of others (slaves, working class, etc.).

Another way that Thoreau discusses this abundance of life which is the obverse of material abundance is in terms of wakefulness. He announces in his epigraph that "I do not propose to write an ode to dejection, but to brag as lustily as chanticleer in the morning, standing on his roost, if only to wake my neighbors up" (Thoreau *Walden* 1). Elsewhere he states that "[t]he millions are awake enough for physical labor; but only one in a million is awake enough for effective intellectual exertion, only one in a hundred millions to a poetic or divine life. To be awake is to be alive" (61). Here Thoreau equates life and wakefulness and presents a sort of scale of wakefulness, with the "millions," that is, the masses, which obviously includes his neighbors, only possessing enough wakefulness for mechanical labor, and who are, thus, barely alive. He refers to them as "slumbering," and "overcome with drowsiness" (61). He writes that "[m]oral reform is the effort to throw off [such] sleep" (61). This entails aspiring to the good life, which, as Thoreau views it, is, first of all, a life of "intellectual exertion," and beyond that, "a poetic or divine life." Here all the aspects of contemplation, as I have described it, are grouped together in an ascending order, with discursive intellectual activity at the bottom, above which is poetic creation and full divine awareness. Thoreau admits that "I have never yet met a man who was quite awake" (61), and yet his sojourn at Walden pond represents the attempt to become just such a man. He writes, "I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived" (61). To "live deliberately" is to live "consciously," or "wakefully," and, for Thoreau, the only way to avoid the redundant death that necessarily follows from a life wasted in mechanical labor.

At its worst, then, the wasted life, for Thoreau, is a life in which the divine is forsaken for the mundane, the vital for the mechanical. Thus, sarcastically, he writes, "[t]alk of a divinity in man!

Look at the teamster on the highway, wending to market by day or night; does any divinity stir within him? His highest duty to fodder and water his horses!" (4). The fact is that, for Thoreau, divinity does inhabit the teamster, only it is in a state of slumber, stupefied by excessive material concerns. Aristotle also conceives of the mind as partaking of divinity. In the *Ethics,* he refers to intellect as "the most divine element within us" (194). And in the *Metaphysics* he writes, "the actuality of thought is life, and God is that actuality" (880). "Actuality," in this case, translates the Aristotelian category of *energeia*. It thus refers to the energy of the human mind, which, in its most active state, becomes identical with divinity and all life. Arendt describes this intellectual activity as one that "does not pursue an end" (206) whether as a product of labor (subsistence), or one of work (artifact), but is its own end, as well as the end of every human means (labor/work). In Thomas Aquinas it becomes the beatific vision of the saint, and in Thoreau, as we have seen, it becomes "wakefulness." Based on a classical conception of energy that is not mechanical, but ideal and vital, this "chief end of man" (*Walden* 5), as Thoreau puts it, quoting the catechism of the *New England Primer,* represents a state of energetic potency that is wasted in lives devoted solely to material production.

In defining Thoreau's conception of the "chief end of man" as the actualizing of ideal/vital energy through contemplation I am going against the grain of certain trends in recent criticism. Arsić, for instance, argues that "Thoreau's notion of life is formulated in complete opposition to idealistic vitalism" (122). Here, she has Aristotle in mind, though she is not referring to his ethics, but rather, his metaphysics. She writes, "[i]n Aristotle . . . vitalism is a force (*dynamos*) that, different from inert matter, is the source of all change and movement" (121). Arsić views Thoreau's vitalism as precisely trying to "overcome the [idealistic] divide between life and living, animation and matter, form and what is embodied" (122). From my perspective, Arsić is

trying too hard to purify Thoreau of any metaphysical dimension in order to turn him into a sort of proto-new materialist for whom matter is its own self-generating cause and end. While it is true that Thoreau has been read as having more reverence for the particular details of nature than Emerson, whose concern was, first and foremost, "the All," that is, the transcendent dimension of unity presiding over the chaos of particularity, the latter dimension, which Laura Dassow Walls describes as that of "truth," as opposed to "fact" (*SNW* 15), is still integral to Thoreau's world view. Describing the shift in Thoreau's thought which brought him to so closely regard the world of particulars, Walls writes, "Thoreau transformed not from an Emersonian transcendental poet to a fragmented empirical scientist, but from a transcendental holist[27] to something new which combined transcendentalism with empiricism" (5). The latter she calls "empirical holism" (5), which is essentially an inductive approach to reality, working its way up to the metaphysical "All" from the physical world of particularity, as opposed to a deductive approach which regards the particular through the "All" as first principle. In her recent biography of Thoreau, Walls characterizes this approach as the ability "to see the Cosmos in a grain of sand" (*HDT* 289). One could rephrase this slightly as the ability "to see [life] in a grain of sand." To the extent that life, for Thoreau, is both a part of and separate from every individual life form, as Arsić notes, his reverence of the material is also a passage way to the ideal.

Furthermore, any attempt to purge the ideal elements from Thoreau's thought demands that one ignore many of his most blatant statements. For instance, in *Walden,* using an analogy that plainly illustrates the inductive approach described by Walls, he writes, "[t]he soil, it appears, is suited to the seed, for it has sent its radicle downward, and it may now send its shoot upward also with confidence. Why has man rooted himself thus firmly in the earth, but that he may rise in the

[27] In *Emerson's Life in Science,* Walls refers to this as "rational holism," as quoted in chapter two.

same proportion into the heavens above?" (10). While there is a balance struck here between the ideal and the material, there is very little ambiguity regarding which is the final and which the efficient cause in humanity's *telos.* And in "Resistance to Civil Government" even such balance is absent. There Thoreau refers to the drone-like servants of the state as "machines" who "put themselves on a level with wood and earth and stones," adding, "[s]uch [men] command no more respect than men of straw, or a lump of dirt. They have the same sort of worth only as horses and dogs" (228). The reason such men are the object of Thoreau's opprobrium is that, as cogs in the machinery of state, they serve "with their bodies" alone (228). In other words they are purely material beings like "dirt," "wood," "stone" and "earth," never exercising the ideal faculties of "judgement" or the "moral sense," making them in Thoreau's estimation a mere "reminiscence of humanity" (228). While this far more unbalanced view of the material and the ideal may fall well before the "shift" Walls notes in Thoreau's thought, to go from this view to the materialist perspective that Arsić favors would constitute far more than a mere shift. I am thus inclined to take the balanced viewed of *Walden* in which humanity's rootedness in the material facilitates an approach to the ideal as representative of Thoreau's position. Human "rootedness" is represented both in the fact of incarnation and in the necessity of labor. Conversely, the human approach to the ideal is represented both in the awakening of the energy of consciousness and in the emancipation from labor that is required for the former to ensue.

Comparing Marx's perspective on the question of human emancipation from labor to that of Thoreau's helps highlight the difference between a materialist and idealist conception of human fulfillment and waste. In the third volume of *Capital* Marx addresses the realms of freedom and necessity, writing, "the realm of freedom actually begins only where labour which is determined by necessity and mundane considerations ceases; thus in the very nature of things it lies beyond

the sphere of actual material production" (820). Yet while the realm of freedom lies beyond the realm of necessity, the former "can blossom forth only with the realm of necessity as its basis" (820). This is precisely what we see in Thoreau, where freedom, a prerequisite of leisure, lies beyond material considerations, but depends on first fulfilling life's "necessaries." For Thoreau, however, the means to such fulfillment is through minimizing those "necessaries" and is, thus, largely ascetic. Marx, on the other hand, notes that, while civilized living has expanded the realm of necessity through the creation of new and hitherto unknown human appetites, this expansion of "wants" can be met with a concomitant development of "the forces of production which satisfy these wants" (820). This is very different from the course of action Thoreau is modelling. Marx is saying that the increase in human "wants" that has resulted in an increase in human work (for some), and that is the result of industrial progress, can be satisfied with more progress. This is to be the fate of "socialized man" who will one day "rationally regulate [his] interchange with Nature . . . achieving this with the *least expenditure of energy* and under conditions most favourable to, and worthy of, [his] human nature" (820 my emphasis). Thus, the energy-saving rational regulation of the process of material production is, for Marx, the key to freedom for the laboring masses.

Marx describes this freedom in very familiar terms as "that development of human energy which is an end in itself" (820). Thus, the energy saved through the rational regulation of the economy can then be developed as an "end in itself." As I have argued, freedom, for Thoreau, facilitates the full development of intellectual energy through the act of contemplation which is *an end in itself*. The similarities between the two are striking. And yet what does Marx mean by the "development of human energy"? In the *Grundrisse* (1857), Marx refers to the same as "the full development of the individual" (711). This "development," which is the result of free time,

is, according to Marx, "identical with development of the productive force" (711). He explains this more plainly when he writes that "[t]he saving of labour time [is] equal to an increase of free time, ie. time for the full development of the individual, which in turn reacts back upon the productive power of labour as itself the greatest productive power" (711). Another way he puts it is: "[f]ree time—which is both idle time and time for higher activity—has naturally transformed its possessor into a different subject, and he then enters into the direct production process as this different subject" (712). Nowhere in these passages does Marx describe the "development of human energy" as an end in itself. Rather, he describes a process whereby "human energy," meaning the "productive force" of the human, is strengthened in order to be fed back into the production process. The only way that this represents an end-in-itself is if the production process is the "chief end of man." It must be granted that Marx's vision was of a scale of productivity equal to meeting the needs of humanity as a whole and that, once met, universal need would give way to universal freedom as human labor was replaced by machine labor in a future socialist utopia.

But what can freedom from necessity mean when the bare meeting of necessity through material production represents the full development of human energy? In *The Human Condition,* Arendt describes "a society of laborers which is about to be liberated from the fetters of labor" (5). She is thereby describing the freedom of a society that, through its own monstrous appetite, has devoted itself solely to necessity, one that, consequently, "no longer know[s] of those other higher and more meaningful activities for the sake of which . . . freedom would deserve to be won" (5). Faced with the prospect of such freedom, she exclaims, "[s]urely, nothing could be worse" (5). Rather than "leisure" in the classical sense, this freedom becomes mere consumption. For Arendt argues, "labor and consumption are but two stages of the same process, imposed

upon man by the necessity of life" (126). Thus, "a society of laborers" is a society of consumers. But can consumption, being intrinsically tied to production and labor, ever be an end in itself? Or is it this relationship between labor and consumption that gives leisure-as-consumption the work-like aspect Thoreau notes when he refers to the "unconscious despair" (*Walden* 5), "tedium and ennui" (6) that infect the pastimes of modern humanity? Through such pastimes material means are made into human ends. Such a society, according to Arendt, is built on a "*waste economy*" (134 my emphasis). While she is referring to the way in which material things are produced only to be "devoured and discarded" (134), the same phrase could be applied to Thoreau's conception of a society of laborers/consumers if "waste" is taken to mean the amount of ideal energy that is dissipated through the endless cycles of production and consumption, becoming the "despair," "tedium and ennui" that would soon blight the intellectual horizon of the modern wasteland.

Life* [Wasted] *in the Iron Mills

In *Life in the Iron Mills,* wasted life resulting from mechanical labor is viewed both in terms of the deformation of the soul and the exhaustion of the body. A third kind of wasted life, in the form of self-destruction ("wasting" oneself, getting "wasted"), is also seen as a response to the two primary forms of waste. The working "[m]asses of men" that comprise the "slow stream of human life" outside the narrator's window and whom she compares to the "sluggish[] river" with its "heavy weight of boats and coal barges" are subject, daily, to a "vileness for soul and body" (Davis 12). To make a scant living, they will work themselves to death, finally being "stowed away, after [their] grimy work is done, in a hole in the muddy graveyard" (13). For a Christian narrator, there is a surprising lack of mention of the destiny of their souls in the latter passage, as though spiritual death came first, leaving the body vacant and machine-like, to die the redundant death Thoreau sought to avoid. Maybe she means to imply by it that any lasting spirit would be a

torment to such men, as it is to Hugh Wolfe, who, with his "groping passion for whatever [is] beautiful and pure" (22), is driven to theft and suicide. Kirby, the son of one of the owners of the mill where Hugh works, says as much when he tells Doctor May, "[i]f I had the making of men, these men who do the lowest part of the world's work should be machines—,nothing more, —hands. It would be kindness. God help them! What are taste, reason, to creatures who must live such lives as that?" (34). In lives completely devoid of beauty (the object of taste) and truth (the object of reason), and that are, consequently, so machine-like, it would be a mercy to really be a machine, argues Kirby, and not be subject to "stray gleams of mind and soul" (34) that will never be realized. The tragedy of Hugh Wolfe is that amid the "vast machinery of system by which the bodies of workmen are governed" (19), he possesses a "finer nature," making him "among his fellow-workmen something unique, set apart" (22). Being subject to "stray gleams of mind and soul," he cannot bend his will completely to the "incessant labor" (15) of mechanical industry. While his body is wasted as component machinery, his mind is made dimly aware of the spiritual waste in a life sacrificed to mechanical labor, so that wasting himself, his final act, becomes something akin to salvation.

Hugh's uniqueness, however, is largely a matter of degree. It should not be thought that he represents some artistic genius wrongly condemned to a life of mechanical labor while his fellow workmen, lacking such genius, are wholly expendable thereto. The theme of the book, much like the first chapter of *Walden,* could be summarized by the narrator's comment, "[m]an cannot live by work alone" (17). [28] This comment refers to all men, and women, for the comment is directed at Deborah who, we are told, is able to live through the mindless monotony of mechanical toil

[28] This comment is essentially the same as the implied statement in Thoreau's comment that modern man "has no time to be anything but a machine," the implication being that he is more than a machine.

only due to some form of "love or hope" acting as a spiritual "stimulant" in her otherwise depressed life. The narrator adds that, "[w]hen the stimulant was gone, she [Deb] would take to whiskey" (17). Because men and women are not literally machines, they need something more than meaningless mechanical labor to sustain them, even if, like Deborah, they possess a "stupid intellect" (23). In the absence of any such spiritual "stimulant," whiskey will dull full awareness of the misery of "incessant labor." Seeming to stimulate, it will actually depress to the point of insensibility. In such cases, workers really approach Kirby's ideal of inanimate machines. Marx famously argued that religion is the "opium of the people," or "the soul of soulless conditions" ("Contribution" 54). More recently, Slavoj Zizek has argued that "the opium of and for the people is today . . . more and more opium itself, drugs" (301). The narrator is making a similar observation to the effect that whiskey is the *spirit* of a spiritless condition, and thus the "opium of the people" in Marx's sense. This idea, that whiskey represents a sort of counterfeit salvation, is seen again when Hugh is asked about the object of his korl woman's manifest hunger. After exclaiming that it is not for meat, he is asked, "[w]hat then? Whiskey?" (Davis 33). He responds, "I dunno . . . Summat to make her live, I think—like you. Whiskey ull do it in a way" (33). Here Hugh says that whiskey will make you live "in a way." He is saying the same thing as the narrator when she says that in the absence of all hope and love Deborah will take to whiskey. Love and hope represent reasons to live, and, in their absence, whiskey will blot out awareness that there is no such reason. In such cases, getting "wasted" is analogous to Hugh's final act of wasting himself, though, obviously, less fatal (in the short term). Both are reactions to a wasted life of mechanical labor and spiritual in the same negative sense. So though Hugh is "unique," he still represents the general worker whose deformation and dissipation lead, in many instances, to self-destruction as the only possible form of salvation from an intolerable situation.

The theme that a life completely consumed by mechanical labor wastes ideal energy thereby deforming the soul, or human form, is embodied in the sculpture that Hugh creates, which is the object of the novel's alternative title, *The Korl Woman.* Korl is "a light, porous substance, of a delicate, waxen flesh-colored tinge" that is "the refuse from the ore after the pig-metal is run" (24). With his "artist['s] sense" (29), and his God-given "thirst for beauty" (25), Hugh spent his "off-hours" (24) moulding this material into the likeness of a woman that is said to possess "not one line of beauty or grace" (32). As a symbol of *life in the iron mills*, so that the one title alludes to the other, the korl woman, with her lack of "beauty," is highly significant. A good life, in the classical sense, is both a virtuous life and a beautiful life, insofar as virtue and beauty are related. Richard Kraut argues that, to Aristotle, ethical action, the fullest realization of the *energeia* of the human form in a good life, is necessarily *kalon,* that is, beautiful (231). Emerson says something similar in *Nature w*hen he writes that "[a] virtuous man is in unison with her [Nature's] works, and makes the central figure of the visible sphere" (25). Consequently, a lack of beauty implies a lack of goodness, in the sense of failing to live up to life's purpose, and thus the deformation of the human. Hugh's inability to realize the ideal of beauty in his korl woman, and in other figures that he has destroyed in "fit[s] of disappointment" (Davis 25), represents his inability to realize the ideal of beauty in his life, which, as the refuse of industrial modernity, is anything but good. The "waxen-flesh colored korl" of his woman, the refuse of industrial production, represents the wasted life of the iron-worker, devoid of beauty and goodness, "[a] reality of soul-starvation" (23.) This "reality," or void, reflecting Hugh's failure as an artist and a human, more importantly reflects humanity's failure to create the space and time (leisure) for beauty and goodness to be realized (for some). It is not just that people like Hugh are "exposed to . . . wastes" (206) as Jill Gatlin argues, but they, themselves, are the waste of industrial production, as typified by Hugh's

statue. The korl woman, with her hunger for life and her brute strength (Doctor May comments on the muscular contour of the sculpture (32)), represents a deformed humanity, sacrificed to mechanical labor, good for nothing but incorporation into the "vast machinery of system" and eventual exhaustion through relentless industrial processes.

If a lack of beauty and goodness, representing the waste of ideal energy in the lives of iron workers, is central to the text, it only represents part of the waste with which the text is finally preoccupied. The wasting away of bodies and dissipation of physical energy is a theme that runs throughout the entire story. As Caroline Miles notes, "[i]t is the laborer's body that captures Davis's artistic imagination" (90). I would only alter this statement to say that it is the reduction of humans to laboring bodies that is the object of Davis's "artistic imagination." Davis is first concerned with the deformation of human beings by which men and women are reduced to nothing more than laboring bodies in "the vast machinery of system" of industrial modernity, and secondly with describing the purely physical effects of this reduction. Furthermore, these effects bear the trace of this reduction in that the descriptions of physical dissipation contain the spiritual deformation that turns humans into machine-like objects in the first place. This is not to say that Davis is not truly concerned with physical suffering, but that such physical suffering must be seen in relation to the spiritual suffering that it presupposes in the context of the story. When Hugh compares himself to Mitchell, the former is disgusted by his own "filthy body, [and] more stained soul" (Davis 30). There is thus a relationship between the degradation of bodies and the degradation of souls. Doctor May even thinks of the laboring bodies that he encounters at the mill as "degraded souls" (39). Thus, in the descriptions of physical dissipation which follow, it is important to bear in mind this spiritual dimension which Miles seems to pass over in her statement.

The theme of physical energetic dissipation from mechanical labor is present in the text from the start. The men in the opening scene, bound for their shifts at the mill, are described as having "dull [and] besotted faces [that are] bent to the ground" (12). Their "skin and muscle and flesh" are described as being "begrimed with smoke and ashes," the result of "stooping all night over boiling cauldrons of metal" (12). These men are quite obviously physically depleted as a result of the daily grind of labor. The cloak of "smoke and ashes" that they wear represents their slow return to ash (as in, ashes to ashes), a process of dissolution and decay through work that the narrator foretells in the previously quoted passage about their final resting place "in the muddy grave yard" (13). Working the night shift at the mill, by day these men are "laired … in dens of drunkenness and infamy" (12). They have "take[n] to whiskey" in the absence of all spiritual good, and now tread a path to physical and psychological exhaustion. Nicolas Bromell states the obvious when he notes, "Davis sees that the body is as much the victim as the agent of manual labor" (113). This is made quite clear from the very opening scene in which these men, going to perform manual labor and thus, its "agent[s]," are also its hapless victims, wasting their life's energy in its service like machines.

When the narrator moves on to describe the specifically Welsh emigrants, to whom Deborah and Hugh Wolfe belong, she says that "[t]hey are a trifle more filthy; their muscles are not so brawny; they stoop more" (Davis 15). This, we are told, is the result of "incessant labor, sleeping in kennel-like rooms, eating rank pork and molasses, [and] drinking—God and the distillers only know what" (15). The Welsh workers, like those in the opening scene, have sought refuge in whiskey, the spirit of a spiritless condition. Perhaps the conjoining of "God" with the "distillers" is meant to allude to this spirituality of self-destruction by which wasted life seeks to waste itself. Deborah, we know, has not yet taken this path. And Hugh, we are told, "drank but seldom" (24).

The former, with her secret "love or hope," and the latter, with his "groping passion for whatever [is] beautiful and pure," have not succumbed to complete spiritual desolation, though they, like their fellow emigrants, are complete physical wrecks. Deborah, who is "almost a hunchback," is described as being physically "deformed" (17). She is said to be "pale," with "bleared eyes, and [a] dull, washed-out-looking face," all the result of "her low, torpid life" (22). "Torpid" means "lifeless," that is, lacking vitality and vigour. Nowhere does Deborah's life seem more lifeless, or "torpid," than when, lying on an ash heap in the mill, she is described as resembling "a limp, dirty rag" (21). Reference is also made to "her thwarted woman's form," which, as Bromell notes, implies some kind of sexual injury (113). In other words, her sexuality, as a life-giving power, has been somehow "thwarted", adding yet a deeper dimension to her lifelessness. Her existence is thus rightly described as a "waking stupor" (21). For his part, Hugh is said to have "already lost the strength and instinct vigor of a man" (24). We are told that "his muscles [are] thin, his nerves weak, his face (a meek, woman's face) haggard, yellow with consumption" (24). While he sometimes fights other men, he is "always thrashed, pommelled to a jelly" (24). The image of a man as "jelly" conveys the idea of an utter absence of physical strength. Hugh, like Deborah, in constantly spending his labor power in the service of industrial work, is physically dissipated.

The idea, already seen in Helmholtz and Thoreau, that food supplies the energy essential for human labor in a way that is analogous to the manner in which the combustion of fuel produces mechanical effect in the engine (or stove) is also present in Davis's text. After returning from a shift at the cotton mill, rather than going drinking with her fellow workers, Deborah prepares some food to bring to Hugh who is working a late shift at the mill. This gesture, on the one hand, represents the "love or hope" that is spiritually sustaining Deborah, who sacrifices "her own

measure of ale" for Hugh's meagre repast (18). But it also represents Hugh's purely physical sustenance as a human incorporated into the vast "machinery of system" of the iron mill. Marx has argued that the main difference between the worker and the machine is that "the worker consumes his provisions during pauses in the labor process, whereas the *machine* consumes what is essential to it *while it is still functioning*" (qtd. in Rabinbach 78). While Hugh is not literally a machine, the way in which he "consumes his provisions" illustrates how close he really is to being one by Marx's standard. When Deborah brings him his dinner, Hugh eats it quickly at his work station and then immediately "turn[s] to his work" (Davis 21). There is barely a pause, and then it is back to "grinding labor" with "no hope that it will ever end" (25). In bringing Hugh his dinner, Deborah is providing fuel for a human reduced to machine-like conditions, and thereby countering the dissipation of energy, if only temporarily, by facilitating the generation of "animal heat," which, through the combustion of metabolism, will provide Hugh with the energy needed to continue laboring, a process that will only end, for him, when life does.

While Hugh's suicide is undoubtedly a reaction against the nineteen-year prison sentence he faces for theft, the description of the human toll exacted by the penitentiary makes it seem but an extension of the iron mill. Hugh, knowing "what it [is] to be in the penitentiary," thinks that "in [those] long years he [will] slowly die, but not until soul and body ha[ve] become corrupt and rotten," and that "if he live[s] to come out, even the lowest of the mill-hands [will] jeer him" because "his hands [will] be weak, and his brain senseless and stupid" (55). This is a description of spiritual, physical and psychological decay terminating in a state of utter dissipation that will either be fulfilled in prison, or, should he live to be released from the former, back in the iron mill. Contemplating this future image of himself, Hugh realizes that "he [is] almost that [way] now" (56). In other words, he has almost reached the state of energetic dissipation, both spiritual

and physical, that he sees as his inevitable end. Either the penitentiary will finish the process that the mill started, or he will find himself back in the mill at the end of his nineteen-year sentence, both spiritually and physically depleted, but still forced to go on as the last of his life's energy is spent. The penitentiary and the mill are, thus, the same, from Hugh's standpoint, representing the impossibility of freedom in the face of a brutal necessity that will eventually drain him of all vitality, whether physical or spiritual. In wasting his wasted life, Hugh's suicide both cuts short and accomplishes a process of spiritual and physical exhaustion, escaping mill and prison, but, ironically, bringing their work to its logical conclusion.

This fact, that in "wasting" himself Hugh brings the process of energetic dissipation to its conclusion can, be seen in some of the images surrounding his death. While bleeding to death in his jail cell from a self-inflicted wound Hugh thinks that "[h]e had been so hot and tired there always in the mills! [But] [t]here [is] coming now quiet and coolness and sleep" (60). In this description Hugh is like a cooling engine as the heat that kept him working for so long in the mill, his "animal heat," to use Thoreau's phrase, is slowly dissipating into the surrounding cool of night. Then, finally, "[h]is tense limbs relax[], and settle[] in a calm languor" (60), leaving a "dead figure that never should move again" (61). Heat is motive power, as Sadi Carnot revealed, so as his life's heat dissipates, Hugh loses all capacity for motion as he reaches energetic stasis in death. Consequently, Hugh's death must be viewed as both a form of degradation and salvation. It is a degradation in so far as his humanity has been deformed and his body exhausted in the service of industrial production, but it is a salvation in so far as, being unable to move again, he will also *never have to work again*.

The narrator's brief reference to the judgement of Hugh's soul by God may complicate the use of the word "salvation". And yet the mill was hell on earth, and Hugh has escaped from this

hell. So, in this respect, at least, he is "saved." One of the visitors to the mill notes its hellish character when he tells Kirby that the latter's "works look like Dante's Inferno" (27). And when Deborah brings Hugh his meal, she sees "a city of fires," made up of "[f]ire in every horrible form," and filled with "crowds of half-clad men, looking like revengeful ghosts in the red light" (20). The scene is described as looking "like a street in Hell," and Deborah exclaims to herself that it "looks like t'Devil's place" (20). The idea of the industrial mill or factory as an inferno is not unique to Davis's vision. As Cecelia Tichi notes in her introduction to the Bedford edition of Davis's novel, "[t]he darker side of industrialism began to make its way into American literature in the nineteenth century as writers judged material progress to be at the expense of moral and ethical concern over the condition of the industrial working class" (20). Among others, Tichi specifically mentions Melville, whose "Try-Works" chapter of *Moby Dick* (1851) represents the factory as an inferno, as does his "Tartarus of Maids" (20). More recently, William Roberts has argued that in *Capital,* Marx sought to "rewrite [Dante's] *Inferno* as a descent into the modern social Hell of capital" (26), which would necessarily include the factory, or mill. Roberts traces the trope of "Social Hell" (30) back to early socialists such as Charles Fourier, but shows how Marx employs the trope in his political economy in a novel way by "de-personaliz[ing] and de-moraliz[ing]" the evils of the inferno, and thereby arguing that "it is capital, as a system of all-around domination, that is responsible for these evils, [and] not the individuals dominated" (3). This is a novel understanding of Hell in so far as the damned are no longer responsible for their "evil" condition: neither for belonging to the exploited working class in the first place, nor for the living conditions that arise amongst them, fertile ground for such things as vice, villainy, and in Hugh's case, suicide. This means that Hugh is not morally censurable for the course his life has taken, nor for his choice to end it. Rather, his fatal decision represents a fully justifiable

human revolt against the waste of lives under the hellish conditions of industrial capitalism. In the end Hugh reaches a point where, as Theodor Adorno puts it, "[f]reedom has contracted to pure negativity," so that, in killing himself, Hugh wastes his life while simultaneously saving it from "the infinite abasement of living and the infinite torment of dying, in a world where there are far worse things to fear than death" (38).

The Wasted Life of Melville's "Maids"

In Melville's "The Paradise of Bachelors and The Tartarus of Maids," it is a paper mill rather than an iron mill that represents Hell. But much like Davis's iron mill, Melville's paper mill is a Hell of mechanical labor where humans are treated like machines, working monotonously and incessantly in the service of modern industrial production and thereby wasting their lives, both spiritually and physically. On his way to the paper mill, the narrator rides through a mountain pass called the "Bellows'-pipe" where he hears the wind "shriek[] … as if laden with lost spirits bound to the unhappy world" (Melville "Paradise/Tartarus" 85). The "unhappy world" is the industrial world, here represented by the Tartarean mill, and the "lost spirits" are the maids who have been turned into industrial machinery. To use Friedrich Engels' metaphor, the maids face a "miserable routine of endless drudgery and toil in which the same mechanical process is gone through over and over again," much like "the labour of Sisyphus" in so far as "[t]he burden of labour, like the rock, keeps ever falling back on the worn-out labourer" (qtd in Marx, *Capital* 1: 409). Melville may even have had Sisyphus in mind when he created the title of the piece, for the latter was sentenced to Tartarus to live out his eternal torment of mechanical labor. Unlike Sisyphus, however, the maids will be "worn-out" through a process of energetic dissipation, mercifully making their laborious misery something less than eternal. As the narrator notes, "through consumptive pallors of this blank, raggy life, go these white girls to death" (Melville

91). Like Hugh, they will escape their Hell in death, but only once they have wasted their life's energy in monotonous mechanical labor.

The "counterpart" (86) to this Tartarus is the "Paradise of Bachelors," to all appearances a world of pure scholarly leisure transcending the "care-worn world" (74) of necessity. Yet it is a degenerate form of leisure as the narrator implies when he refers to the "worm of luxury" (75) that has turned it rotten. As a result of the social division of labor, the balance that we saw extolled by Thoreau in *Walden*, according to which labor is a precursor to leisure and leisure the true end of labor, is entirely absent in the lives of the subjects of this piece. On the one hand, there are lives sacrificed to necessity that are wholly lacking in leisure, and on the other hand, there are lives of leisure that know nothing of necessity, and consequently cast suspicion on the very leisure that they possess. Melville mocks this lack of balance in the leisurely class in one instance by having the narrator refer to the arduous ascent he is forced to make to the dinning-room of the Bachelors, saying, "a good dinner, with famous company, should be well earned. No doubt our host had his dinning-room so high with a view to secure the prior exercise necessary to the due relishing and digesting of it" (78). In the absence of physical work, climbing the stairs to the dinning room forms the necessary basis of the bachelor's leisure. For the point of the piece's central juxtaposition is that, in the modern economic order, the leisure of one class is materially sustained by the labor of another. Thus, the bachelors fail to follow Thoreau's dictum that one's leisurely "pursuits and contemplations" should not be "pursue[d] … sitting upon another man's [or, woman's] shoulders" ("Resistance" 232). Nor do they heed Emerson's advice that "[w]e must have a basis for our higher accomplishments, our delicate entertainments of poetry and philosophy, in the work of our hands" (qtd in Bromell 16). All their so-called "good living" (Melville 81) depends upon the terrible living of others. Like a physical system exporting its

entropy elsewhere so that, on the whole, the lawful increase of entropy obtains, these bachelors maintain themselves at the expense of those whose lives are wasted in the mechanical service of industrial production.

The division of labor has traditionally been associated with an increase in productivity and is thus a hallmark of the industrial era. Adam Smith opens the first book of his *Wealth of Nations* (1776) by stating that "[t]he greatest improvement in the productive powers of labor, and the greater part of the skill, dexterity, and judgement with which it is anywhere directed, or applied, seem to have been the effects of the division of labor" (5). And in "Wage Labour and Capital" (1849), Marx writes that "the productive power of labour is raised, above all, by a *greater division of labour*, by a more universal introduction and continual improvement of *machinery*" (212). Here Marx equates the division of labor with technological progress, the combination of which results in increased productivity. In "Paradise/Tartarus" technological progress also accompanies the division of labor. Cupid, the boy who gives the narrator a tour of the paper-mill, takes great pride in displaying the machinery of production used in the mill which is attended by female workers who specialize in its various operations. In one instance he says to the narrator, "I suppose you want to see our great machine, which cost us twelve thousand dollars only last autumn," adding that it is "the machine that makes the paper" (Melville 91). After initially marvelling at the mechanical process of the "great machine," the narrator notices a "sad-looking woman standing by" whose job it is to "tend[] the machine-end," no less mechanically "piling" the paper that is produced (93). She is, essentially, a human appendage of the machine. In the first volume of *Capital* Marx notes, "[t]he labour of women and children was . . . the first thing sought for by capitalists who used machinery" because "machinery dispenses with muscular power" and thereby "becomes a means of employing labourers of slight muscular strength"

(404). Michael Rogin, writing about the Melvillean text in question, notes that "[t]he new mills appropriated both the women's work of household manufacture, and the women who engaged in it" (203). Read alongside Marx and Rogin's assertions, the maids and machinery of Melville's Tartarean paper-mill, representing the division of labor and technological progress respectively, become the twin factors in a new economic order of industrial scale productivity.

This productivity is best described by the list that the narrator gives of the various market needs the "now vacant paper" (Melville 94) will meet. He says that the paper will be used for "sermons, lawyers' briefs, physicians' prescriptions, love-letters, marriage certificates, bills of divorce, registers of births, death-warrants, and so on, without end" (94). The reader can also make a connection between this seemingly endless supply of paper and the texts that line the library in the Bachelors' Paradise, not to mention Melville's own text. The Bachelors, along with church ministers, lawyers, doctors, writers and the entire professional world, depend on the productivity that is made possible by the division of labor and technological progress manifest in the paper mill. And yet the early modern industrial world was very much defined by a tension between progress and decline, productivity and sterility, energy and entropy. As Rabinbach notes, the "paradoxical relationship between energy and entropy is at the core of the nineteenth-century revolution in modernity" so that "[t]he powerful and protean world of work, production, and performance [was] set against the decrescent order of fatigue, exhaustion, and decline" (63). This tension is also at the center of Melville's text: following industrial productivity like a shadow is a proportionate level of dissipation and waste.

Previous readings of this text have viewed this tension largely in terms of mechanical production and natural sterility: while the machinery of the paper mill is productive, the maids are reproductively sterile. Marvin Fisher argues that Melville "contrasted factory production . . .

with human reproduction," thereby "setting the factory and its machines in opposition to the warmth and fertility of both nature and women" (93). Rogin, looking at both sides of the sexual divide, notes that "[t]he bachelors in Paradise and the Tartarus maids, separated from each other [through the division of labour], remain virgins," but that "[g]enerative power is appropriated by the machine" (203). Both of these quotes point towards a fundamental tension between natural sterility on the one hand, and mechanical production on the other. Through the foregrounding of this particular tension, these readings emphasize what Thomas Allen calls "the conflict between technological and pastoral ideals" (47). They thus depend on a clear distinction between nature and technology, or what Leo Marx calls the "Two Kingdoms of Force" (227).

From an energetic perspective, this distinction between "Kingdoms of Force" is problematic. Rabinbach notes that "[t]he discovery of energy as the quintessential element of all experience, both organic and inorganic, made society and nature virtually indistinguishable" (46). Here it is "nature" and "society" rather than nature and technology that are "indistinguishable," but as the sphere of "inorganic" production, society is being described as technological. Rabinbach is thus saying that, by reducing all forces to a single underlying principle, "energy" rendered nature and technological society part of a single physical economy. Thus, the maids must be viewed as both a part of nature and the machinery of industrial society, and their sterility, or dissipation, equally natural and socio-technological, part of an overall economy of energetic work and waste that physically equates humans and machines. This is precisely the view we see in Melville's text, which, as Jonathan Cook notes, "is consonant with many workers' reported discontents with the historical condition of the mills" (88). Cook notes that, in the nineteenth-century, "[i]ndustrial workers felt that their repetitive tasks were numbing to their spirits . . . [that] they were becoming slaves to the machines they tended" (88-89). Cook adds that "[a]t the heart of many of these

complaints was the reduction of workers to the status of machines" (89). Accordingly, Melville's critique of modernity is far more radical than previous critics have surmised. It is not simply that he sees industrial civilization as encroaching on some idyllic nature in a very clichéd Romantic way, but that industrialism, along with the rise of scientific materialism, alters the ontological status of human beings, denying them a spirit/form/human nature so as to turn them into the machine-like slaves of a process of industrial production that must necessarily end in energetic death.

This identity, between the maids and machines, is stated most plainly when the narrator says that the factory girls "did not so much seem accessory wheels to the general machinery as mere cogs to the wheels" (Melville "Paradise/Tartarus" 88). The maids are here described as the lesser parts, but parts nonetheless, of the machinery of paper production. Several individual factory girls are described in detail. For instance, upon entering the mill, the narrator notices a "huge frame of ponderous iron, with a vertical thing like a piston periodically rising and falling upon a heavy wooden block" (88). In front of this machine stands "a tall girl, feeding the iron animal with half-quires of rose-hued note paper" (88). The narrator then notes two girls seated at either end of "a long apparatus, strung with long slender strings like a harp," one girl "feeding it with foolscap," while the other girl receives the lined paper that has passed through the machine (88). In *Capital* Marx writes that "[t]o work at a machine, the workman [or woman] should be taught from childhood, in order that he [or she] may learn to adapt his [or her] own movements to the uniform and unceasing motion of the automaton" (1: 408). The women in Melville's mill are doing exactly that, adapting their movements to the movements of the machinery, and thereby becoming its component parts. In both instances, the narrator notes the physical aspect of these workers, comparing the first girl's "pallid check" to the "rosy paper" that she relentlessly feeds

into the machine. He also notes the difference between the two girls at the harp-like machine, one looking "young and fair," the other "wrinkled" and old (Melville "Paradise/Tartarus" 88). When these two girls change places, the narrator only notes that "where had stood the young, fair brow, now stood the ruled and wrinkled one," and not vice versa, as though to emphasize the dissipative character of mechanical labor. The narrator also notes, "[n]ot a syllable was breathed. Nothing was heard but the low steady, overruling hum of the iron animals. The human voice was banished from the spot" (88). Thus, one of the defining characteristics of humanity, speech, is denied to the maids, or just rendered superfluous. These girls have become part of the machinery of the mill. As such, their physical dissipation should not be read as something separate from the mechanical process of production, as though it stood for the invasion of nature by technology. Rather, as part of modernity's physical economy of energy, it stands for the waste that, in the 1850s, became the negative corollary of all work, foretelling the eventual end of all regimens of production, whether ostensibly natural or social.

The fact that the maids' energetic dissipation is as much socio-technological as natural makes the narrator's awe of, and Cupid's pride in, the "metallic necessity" (94) of the mill's machinery something like the false faith of the pilgrims aboard the *Fidele* in *The Confidence-Man.* Asking Cupid about the machinery, the narrator says, "[d]oes it never stop—get clogged," to which Cupid replies, "[n]o. It *must* go" (94). The narrator then looks upon the machine as a "panting Behemoth" of "unbudging fatality" (94). Elsewhere he refers to the "unvarying punctuality and precision" of the machine (93). But just as the "factory girls," when viewed through the lens of energetic science, are both natural and socio-technological, so the machinery, viewed through the same, is both socio-technological and natural. That is, working in the service of technological society, the machinery nonetheless mediates a nature that is governed by a law of one-way

dissipation. This is apparent in the previous description of the machines as "iron animals." It is even more apparent in the fact that what is described as a "Blood River" turns the "dark colossal water-wheel" that keeps all the mill's "machinery a-going" (89). Blood is a natural symbol of both the ebb and flow of life.[29] Its ebbing, in the form of the "pallid" (95) faces of the mill maids, is a constant symbol of decline and waste used throughout the text. The first girl that the narrator meets is described as "pale with work" (87). Associating "pale" with "work," this phrase points towards waste as work's negative corollary. While the narrator views many similarly "pallid" girls the most notable instance is when he observes the paper on the conveyor belt of the "great machine" and "seem[s] to see, glued to the pallid incipience of the pulp, the yet more pallid faces of all the pallid girls [he] had eyed that heavy day" (95). Describing the scene further, he states: "[s]lowly, mournfully, beseechingly, yet unresistingly, they gleamed along, their agony dimly outlined on the imperfect paper, like the print of the tormented face on the handkerchief of Saint Veronica" (95). In this vision, the narrator sees the "pallid" maids as both part of the mechanical process and the "imperfect" product of the machinery. As such, the waste that is evident in their bloodless faces, a product of the process of work, is immanent to the machinery. This evident ebbing of the "Blood River" that runs through maids and machinery alike gives the latter a very different "fatality" than that implied by the narrator's blind faith. Contrary to his belief in its "unvarying punctuality and precision," the machinery, of which the maids are a part, must follow the law of energetic dissipation and eventually grind to a halt.

[29] The "Blood River" has often been interpreted as a symbol of menstrual blood. This is consonant with a reading that focuses on the gendered division of labor and on the productive contrast between the socio-technological machinery and the natural "maids." As I have already argued, from an energetic perspective this distinction is impossible to make. The "Blood River" is, in my reading, a symbol of the life-energy that runs through machinery and maids alike, tying them together in an energetic economy of work and waste.

The reference to the shroud of Turin, which, supposedly, bears the impress of Christ's face from the day of his crucifixion, further points towards the nature of the diminishment that Melville wishes to convey through his sketch of these mechanical maids. Christ was a human with a divine nature, and so, the maids, in Melville's ontology, possess a spiritual or ideal dimension which has gone to waste through their reduction to component parts of industrial machinery. It is due to this reduction that they are "lost spirits" inhabiting a realm of spiritual darkness, an underworld which represents a descent from their proper state. The first girl that the narrator comes upon, already mentioned for her "pallid" countenance, is said to possess "an eye supernatural with unrelated misery" (87). This reference to the "supernatural," conjoined with the idea of a "misery" that is "unrelated," describes a state of spiritual isolation and forlornness that seems the very antithesis of the sort of spiritual connection to the world fostered through contemplative wakefulness by someone like Thoreau. Though Melville does not use energetic language to describe this reduction and forlornness, such as Thoreau's metaphor of "slumber," or Davis's metaphor of "stupor," both of which connote an idea of energetic lack, he is essentially describing the same thing. He, perhaps, comes closest to this language when he describes the maids as simply "blank" (88). This occurs when, upon entering the paper mill, the narrator sees, "rows of blank-looking girls, with blank, white folders in their blank hands, all blanky folding blank paper" (88). Here, the maids are described as "blank" in both their being and their action, as though something essential were missing from each. In Marx's terminology, these women are alienated from their labor, and thus from their being. This is because, for Marx, at least at one point in his thought, work defines humanity, so that the "*animal rationale"* of Aristotle becomes the "*animal laborans*" (Arendt 86). According to this view, meaningful labor would entail a meaningful life. But to Melville, for whom the spiritual or ideal world is more than the product

of mystifying ideology, meaningful labor would be that which facilitated meaningful leisure, an idea of which can be inferred, negatively, from the false leisure modelled by the "Bachelors" in their so-called "Paradise."

The way that the "Paradise" inhabited by the bachelors is initially described makes it seem like the home of a contemplative religious order. For instance, to arrive at this "Paradise" from "the mud of Fleet Street" where business rules the day, one must "turn a mystic corner" and "glide down a dim, monastic way" (74). Having arrived, one may "pace the cloisters . . . [i]n mild meditation," or "go worship in the sculptured chapel" (74). The more scholarly may "go linger in the ancient library" (74). These descriptions present an ideal world of contemplative activity. By subordinating such activity to the experience of a luxurious dinner, Melville intends to satirize the "good living" (81) of these bachelors. The fact that, for them, the good life has been reduced to what is basically hedonism ("good drinking, good feeling, and good talk" (81)), as opposed to those higher contemplative activities, emphasizes their decadence. Melville refers to this decadence more directly by having the narrator, somewhat facetiously, trace the descent of the bachelors from the medieval Templars, a military religious order, whose headquarters in London, in the Temple district, became the site of the legal profession's Inns of Court. The Templars, as "monk-knights" (75), represent a balance between action and contemplation, work and leisure. This balance is conveyed most clearly in the description of a Templar kneeling in full chain mail "before the consecrated Host" (75). This image emphasizes both war (work) and prayer (contemplation). In fact, the work of a Templar, as the "vowed opener and clearer of all highways leading to the Holy Sepulchre" (75), was to facilitate the prayerful contemplation of pilgrims to Jerusalem by defending them from enemies, making him even more exemplary of this balance by which work is to be the facilitator of leisure in the classical sense. In Aristotle's

ethical economy, all lesser virtues aim at the highest virtue, all actions at the highest action,[30] both of which are consummated in the realization of intellectual *energeia*, which, as we have seen, involves the contemplation of the absolute. This ethical paradigm is thus applicable to the Templars, whose courage in battle is for the sake of contemplative prayer and worship, the highest good for all medieval Christians. But as the narrator notes, "a moral blight tainted at last this sacred Brotherhood" (75). He further explains that "the worm of luxury crawled beneath their guard, gnawing the core of knightly troth, nibbling the monastic vow, till at last the monk's austerity relaxed to wassailing, and the sworn knights-bachelors grew to be but hypocrites and rakes" (75). In this description, both the "knightly troth," associated with a knight's work, and the "monastic vow," associated with his life of prayer, are undermined by the "worm of luxury" (75). Tracing this course of degeneration down to the present day of the text, the narrator says that "these degenerate Templars . . . were so entirely secularized as to be reduced from carving out immortal fame in glorious battling for the Holy Land, to the carving of roast-mutton at the dinner board . . . think[ing] it sweeter far to fall in banquet than in war" (75). It is important to note that the source of the present-day bachelors' decadence is their "seculariz[ation]." This means that their work is no longer for the sake of what medieval Templars regarded as the highest good, but, according to their description, for the sake of pleasure, a degenerate form of the good. This, according to Aristotle's ethics, entails the waste of intellectual *energeia* and the deformation of the human soul.

[30] In this section, I am not using "action" in the sense that Arendt uses it, to describe that which, along with speech, distinguishes human uniqueness. Rather, I am, relying on the medieval Christian distinction between the active life and contemplative life. "Action," therefore, refers to worldly labor, or work, whereas "contemplation" refers to things such as meditation and prayer. This distinction fits the text well as the Templars were a medieval order of Christian knights. Of course, this distinction is complicated somewhat by the fact that Aristotle, on whom I am also relying (as did many medieval Christian thinkers), describes contemplation as the "highest activity." But if I am referring to contemplation as a form of activity or action it will be qualified accordingly.

While, as previously mentioned, Melville is being somewhat facetious in having the narrator trace the bachelors' descent from the medieval order of the Templars, there is a genuine critique of a loss of values contained therein. From a place of "meditation," and "worship" for men who defended their religion for a living, the Temple has become a place of pleasurable living for lawyers. Thus, leisure, in the classical sense, has become pleasure, and the defence of the Holy Land and Church, the defence of Law. Alfred S. Konefsky argues that Melville was very critical of the institution of law, viewing is as the bolster for a "regime of hierarchy, obedience, and dependence" (1181). He writes, "for Melville, law's dominion takes place against the backdrop of decaying aristocracies clinging to illegitimate hierarchy through a socially constructed structure of obedience" (1183). According to this view, Melville's "Bachelors" would represent the remnants of aristocratic culture, an old-world curse that those in the new world were loathe to inherit. And yet by juxtaposing these old-world bachelors with the new-world maids, Melville is implying some form of a relation. Charles Sellers argues that, in America, "[l]awyers were the shock troops of capitalism," that is "the main purveyors of capitalist ideology" (47). According to Sellers, it was lawyers who freed social relations "from traditional norms of truth and equity," because "if ethical principles governed, 'there could be no such Thing as buying and selling'" (47-48). Alexis Tocqueville, quoted by Sellers, describes such lawyers as a form of "American aristocracy . . . secretly opposed to the instincts of democracy" (47). According to this view, as defenders of law, the bachelors are defenders of an economic order divested of ethical principles, which allows them to maintain a quasi-aristocratic position, subjugating the masses by turning them into machine-like laboring bodies and making the good life an impossibility for all: for the working class for reasons we have already seen, and for the leisure class, because, in the absence of ethical principles and a common good, the capitalist world order creates only producers and

consumers. The bachelors thus represent leisure as consumption, a degenerate modern form of leisure that Melville, much like Thoreau, means to condemn. Even taking the Templar ideal as somewhat facetious, it can be inferred from this latent condemnation that Melville is extolling a balance of work and leisure, the latter of which must be guided by ethical principles and an idea of the common good beyond material consumption, which, when it is elevated to a human end by capitalism, represents the waste of ideal energy and the deformation of the human soul in the same way as does a life dedicated to material production.

From this analysis it can be seen that the lives of both bachelors and maids are spiritually wasted. Just as the maids have become part of the machinery of industrial production, so the bachelors have become part of the machinery of capitalist consumption. And it is their inordinate consumption that allows them to defer their own physical dissipation, exporting the necessary waste elsewhere, if only temporarily. In their freedom from work they are akin to those Arendt describes as being "liberated from the fetters of labor," but who have no "higher and more meaningful activities for the sake of which . . . freedom would deserve to be won." Physical comfort, which cannot last, is all that they have to live for. While this seems like a lot more than the maids have to live for, it is precisely those "higher and more meaningful activities" that the leisure of the bachelors and the labor of the maids would need to facilitate to make their lives more than processes of physical waste, whether deferred or direct.

Wall Street Wasteland

Describing the moment when he first discovered Bartleby dead in the Tombs, the narrator of the story exclaims, "I saw the wasted Bartleby" (Melville "Bartleby" 40). Bartleby had been wasting away in the jail for some time at this point, preferring not to eat. In death, his already cadaverous appearance was, thus, likely far more pronounced. And yet this allusion to death by

starvation does not in any way exhaust the significance of the narrator's precise choice of words. Bartleby, like the maids in Melville's Tartarus, represents humanity reduced to machinery. While Bartleby works in an office on Wall Street as opposed to a New England paper mill, representing middle class as opposed to lower class labor, he is, none the less, part of a process of mechanical production. His life, like those of the maids, is thus wasted twofold: first, because his humanity has been reduced to machinery, and second, because, as a machine, he dissipates energy which is wasted for the purposes of material production. As a scrivener Bartleby is just one step beyond the maids in the production process, using the paper produced by their likes to make copies of legal documents pertaining to such things as property rights, which form the basis of capitalist enterprise and exploitation. Thus, his work, no less than that of the maids, supports an economic order, enshrined in law, which reduces part of humanity to the status of machinery in the service of industrial production. His waste, however, taking the form of a crippled will to work, both subverts that order and reveals its inherent limitations.

From the beginning of the story, the narrator and owner of the legal business that comes to employ Bartleby among his other scriveners uses energetic metaphors to describe both his work and his workers. He says that his "profession" is "proverbially energetic" (3). Introducing one of his scriveners, Turkey, he describes the latter's face as sometimes "blaz[ing] like a grate full of Christmas coals" and, at other times, "as if cannel coal had been heaped on anthracite" (5). In both cases, the relative blaze affects the work of the scrivener, in the latter instance making him "altogether too energetic" (5). The face of the scrivener, reflecting his energetic state, is also said to "gain[] its meridian with the sun" (5), the source of the world's mechanical energy. Another scrivener, Nippers, is described as being "of a very ingenious mechanical turn" (7). The narrator also refers, in one instance, to the "heat of business" (7), giving his whole enterprise further

energetic connotations. While he does claim to prefer peaceable steady work to the "turbulence" (3) or "recklessness" (5) that can result from energetic overabundance, the narrator's choice of language nonetheless reflects modern humanity's faith in the material-energetic state of the world as forming a firm basis for the mechanical efficiency demanded by modern productivity. Enter Bartleby.

There is quite a bit of evidence to suggest that Bartleby represents humanity reduced to machinery. At the outset of the story, this status is conveyed through his unnatural productivity as opposed to his later inactivity. Andrew Lyndon Knighton rightly notes that, "[t]hough it is Bartleby's uncommon listlessness in the story's latter movement that usually draws the most sustained critical attention, it is necessary to notice how initial descriptions of the scrivener attribute to him an equally uncommon productivity" (33). This "productivity," described by the narrator in the following quote, is certainly "uncommon" for a human, but not so for a machine:

> At first Bartleby did an extraordinary quantity of writing. As if long famishing for something to copy, he seemed to gorge himself on my documents. There was no pause for digestion. He ran a day and night line, copying by sun-light and by candle-light. I should have been quite delighted with his application, had he been cheerfully industrious. But he wrote on silently, palely, mechanically. (Melville "Bartleby" 11)

Here Bartleby is described as working day and night, with no pause for rest, thus displaying the efficiency of a machine. While the narrator is referring to Bartleby's consumption of documents, and thus speaking metaphorically, his comment about Bartleby taking "no pause for digestion" also connotes an idea of machine-like efficiency. As previously noted, according to Marx, the

main difference between a human and machine is that whereas the former must pause in order to consume the fuel necessary to sustain work, the latter can consume its fuel while working. When, later, the narrator describes the daily occurrence of Ginger Nut, the office boy, bringing ginger cakes to Bartleby's cubicle, the similitude between the consumption process of Bartleby and a machine is made even clearer. The narrator says, "he [Bartleby] never went to dinner," but was "a perpetual sentry in the corner," eating ginger cakes to sustain his labor (14-15). Thus, there really was "no pause for digestion," making Bartleby machine-like in both his production and consumption.

Bartleby's initial resistance to his boss's requests that he do something other than copying also points towards Bartleby's status as a human reduced to machinery. A machine can only perform one kind of work, whether it is lining paper or copying text. Thus, when Bartleby's boss asks him to come and compare copies, Bartleby's disinclination to do so simply expresses the logic of human mechanization. As previously noted, mechanical innovation grew in tandem with the division of labor. Bartleby's preference to perform one mechanical task applies this trend to humans whose labor became increasingly mechanical over the course of the nineteenth century. We have already seen how the workers in Melville's Tartarean paper mill, in attending to various machines, each performed a single repetitive task in the production process. Bartleby is doing the same, though there is no machine to speak of. Rather, he is the machine. The narrator even notes that there is nothing "ordinarily human" (12) about Bartleby, and by comparing the latter to a bust of Cicero, the narrator compares Bartleby to an inanimate, inhuman thing that only resembles humanity. The reason Turkey and Nippers do not display this same tendency, and thus submit to their boss's requests to perform variable tasks, though, as we have seen, they are described in mechanical-energetic terms, is that they are not meant to represent the absolute

diminishment of humanity that is represented in Bartleby. It is the stark contrast, both for the reader and narrator, between the mechanical Bartleby and the more or less human others (including the narrator, for the reader) that conveys the magnitude of this diminishment. If all the office workers were like Bartleby, though the story would be nightmarish in some Kafkaesque sense, it would not convey the sense of pathos and loss that should accompany a tale about humanity's gradual enslavement to mechanical processes.

When Bartleby begins to refuse his employer's requests, replying to each one that he would "prefer not to," he makes his boss understand that "his decision[s] [are] irreversible" (13). While Bartleby is still being productive at this point, displaying "incessant industry" and "freedom from all dissipation" (18) in the work of copying, this reference to an irreversible process taking place at the level of his will foretells the dissipative process that will soon play out. As early as 1851, when William Thomson published his work on Sadi Carnot and James Prescott Joule, it became widely known within the scientific community that processes of work are irreversible due to the dissipation of energy. The will is, of course, the centre of action in the human, and, thus, the centre of work. When Marx describes human labor as the process by which "the aggregate of those mental and physical capabilities existing in the physical form, the living personality, of a human being" are "set[] in motion," such mobilization occurs through an act of the will. The will is thus a mediator of force, taking the "capabilities" latent in the "physical form" of a human and applying them to the task at hand. Bartleby's will, applied to the mechanical task of copying, and, therefore, preferring not to perform other subsidiary tasks, and making "decision[s]" in keeping with this strict application, is engaged in an irreversible process in so far as the energy expended can never be fully recouped. His "decision," reflecting his mechanical task, also

reflects the dissipative character of willful action according to a mechanical-energetic model of humanity.

There has been quite a bit of speculation about Bartleby and his dissipative tendencies. Dan McCall has called this speculative business the "Bartleby Industry" (30). In the second chapter of his book *The Silence of Bartleby* (1989), McCall catalogues some of the afflictions that have been ascribed to Bartleby ranging from from "catatonic schizophrenia" (47) to autism (48). Ultimately, McCall rejects these readings, adhering to his own interpretation of Bartleby as a figure of inscrutable silence. This silence both emphasizes the futility of the "Bartleby Industry" and facilitates its continuance by those who stubbornly insist on some degree of understanding, however partial it may be. Being such a one, I would like to propose an interpretation of Bartleby that does not in anyway pretend to be the definitive diagnosis that would forever obliterate that mysterious silence, but simply sheds some light on what may be going on with this otherwise inscrutable being. Furthermore, this interpretation is hinted at by McCall's own comparison of Melville's disordered state during the period of Bartleby's creation and what the narrator comes to call Bartleby's "incurable disorder" (22). Both Melville, according to McCall's reading, and Bartleby, according to mine, suffer from nervous exhaustion due to overwork, a state that in the 1860s would come to be called *neurasthenia,* essentially an analogue of physical energetic dissipation applied to the human nervous system and will.

Neurasthenia, or nervous exhaustion, a "fatigue disorder[]" representing a "relentless attack on the core of psychic and physical energy," was viewed, in the latter half of the nineteenth century, as a particularly modern affliction resulting from the excessive stimuli of urban living and the increase in sedentary, though intellectually demanding, labor (Rabinbach 153-154). It essentially represented the dissipation of the energy of the nervous system, which, in keeping

with the second law of thermodynamics, accompanied intellectual work. The result of this dissipation was, ultimately, a weakened will "that pathologically inhibited action" (15). Thus, action became inhibited through its excess, the latter of which can be seen in the unnatural productivity of Bartleby keeping machine-like vigils at the office early in the story. Excessive action is also something that McCall identifies in Melville's "heroic work" of the early 1850s when he [Melville] produced both *Moby-Dick* and *Pierre* (37). The result of this "heroic work" according to McCall, was, for Melville, "disorientation and despair" and "a morbid state of mind" which led Melville straight to his famed resignation "to be annihilated" (37). It is not difficult to see a resemblance to Bartleby in this description. For he too becomes a figure of "disorientation and despair." It has often been assumed that Bartleby's refusal to inform his employer about his past and background is an act of willful obstinacy. But perhaps Bartleby refuses to inform the latter because Bartley, himself, no longer knows who he is or where he comes from in any meaningful sense as a direct result of his nervous exhaustion. This would certainly entail a form of "disorientation" and explain why Bartleby fails to leave the Wall Street office until he is lead away to the Tombs. His "despair" is clearly evident in that, throughout this period, he has basically given up on life and merely awaits his own annihilation, which comes to him in the literal and figurative Tomb that he inhabits while still living. Of course, the analogy only goes so far: Melville's "heroic work" cannot be regarded as mechanical in the way that Bartleby's can. But both reveal what McCall describes, using the narrator's words, as "an 'innate and incurable disorder' at the very centre of things" (39). This "disorder" is the dissipation of energy that operates on the cosmic, physiological and psychic level, making all the world, if left to its own devices, a lost cause, like Bartleby.

Another reason to suppose that Bartleby is suffering from neurasthenia or a similar nervous disorder, besides the primary reason of his ever-growing inaction, is his tendency to dwell within enclosed spaces. In his famous study *Suicide* (1897), sociologist Emile Durkheim argues that the sufferer of neurasthenia "may live with a minimum of suffering when he can live in retirement and create a special environment only partially accessible to the outer tumult" (15). It must be recalled that, besides intellectually taxing labor, the external stimuli associated with urban living was viewed as a primary cause of nervous exhaustion. If Bartleby was already exhausted from work, excessive external stimulation would only have made a painful condition all the more intolerable. He would have lacked the will power to buffer the shocks to the nervous system that a New York City street would surely have produced. It is, perhaps, for this reason that he never leaves the office, at first remaining in his cubicle to work, and, later, to stare out the window in what the narrator calls a "dead-wall revery" (Melville "Bartleby" 25). The narrator describes Bartleby's inaction in this manner because the view from Bartleby's window affords no view at all, but merely looks out on a grimy brick wall across an alley. Bartleby is as if dead, limiting his perception as much as possible because life has become so painful for him. This continues when the narrator quits his office for another and Bartleby remains in the hallways of the building by day and night, and finally, in the Tombs where "in the quietest of the yards," Bartleby stands with "his face towards a high wall" (38). This latter situation is truly tomb-like in that there is not even a window to the outer world to disturb Bartleby. Bartleby is thus truly insulated from the "outer tumult." One can only imagine, if this reading is correct, the absolute horror that Bartleby experienced on his way to the Tombs, in what is called a "silent procession . . . through all the noise, and heat, and joy of the roaring thoroughfares at noon" (37). The contrast between the silent, cool and joyless Bartleby and what the narrator describes as the "noise, and heat, and joy"

of the "roaring" street would have produced the greatest effect on Bartleby's passive and exhausted system.

This interpretation of Bartleby implies that he cannot be regarded primarily as a figure of idleness. In *Idle Threats: Men and the Limits of Productivity in 19^{tt} Century America* (2012), Knighton interprets "Bartleby" through the phenomenon of idleness, arguing that Melville's story "conducts an exceptionally sustained and subtle inquiry into just what nineteenth-century idleness is and what it means" (26). Knighton defines idleness as "unproductive activity [which] constitutes a limit for the imperatives of the work ethic" (26). Yet to view Bartleby's inaction as such is, in my view, to displace the locus of the "incurable disorder" that Melville views "at the very centre of things" (McCall 39). It is not simply that Bartleby wastes time, but, rather, that he *wastes away* as a result of a universal tendency to dissipation and decay that makes humanistic faith in material progress a form of delusion. Bartleby is primarily a figure of exhaustion. As a physical/psychological state exhaustion may resemble idleness, but they are not the same thing. Rabinbach notes the resemblance when he writes, "[n]eurasthenia was a kind of inverted work ethic, an ethic of resistance to work or activity in all its forms" (167). Neurasthenia is, in this case, likened to an inversion of the work ethic, which resonates with Knighton's definition of idleness. And yet in the next sentence, noting the difference, Rabinbach writes, "[t]he lack of will or energy manifested by neurasthenics is the incapacity to work productively" (167). There is a major difference between an "inverted ethic" amounting to a "resistance to work" and a lack of "will or energy" amounting to an "incapacity to work." One implies an act of will, whereas the other implies a lack of will. Rabinbach's initial description must be interpreted as an instance of analogy, which, when applied to Bartleby, leads to the conclusion that, while the latter may appear to be idle, he really lacks the "will or energy" to be productive. The only gesture his will

can make is his preference not to, which, as the gesture of a will dissipated through mechanical labor, masks his utter debility to both himself and us as readers, though this becomes apparent in the "wasted" figure he leaves behind in the Tombs.

Ultimately, the difference between idleness and exhaustion amounts to a difference between an extrinsic and intrinsic threat to order and efficiency. Whereas idleness implies an extrinsic threat from outside the system, and, thus, the possibility of reform, exhaustion implies that the system is threatened from within, exhausting itself through its own expenditure of energy as a matter of course. Though Knighton views the scrivener business as a mechanical operation, referring to the scriveners as part of the "copying machinery of the office" (29), he views their "bungling and waste" as the result of "unavoidable tendencies toward unproductivity" that he associates with the "seductions of ease" (43). Such waste is the product of laziness rather than the concomitant product of mechanical work. It can therefore be lessened through moral reform. Such a paradigm may be applicable to someone like Turkey, whose alcohol consumption at lunch invariably leads to an unproductive afternoon, but with Bartleby we are faced with an entirely different situation. Initially, he is a model of mechanical productivity. Over time, his productivity is spent through energetic dissipation, leaving a wasted and exhausted hulk of a man. Branka Arsić describes this as "activity that negates its result—as if the heart of the law transforms itself into a lawless pulsation that cannot inscribe itself" (*Passive* 35). While the reference to law is to the law of the office, Arsić's description is a near perfect summation of the laws of thermodynamics which describe the chaotic dissipation of energy as occurring within energy's lawful conservation. Elsewhere in *Passive Constitutions, or, 7 ½ Times Bartleby* (2007), Arsić discusses Melville's likely engagement with Benjamin Rush's *Medical Inquiries and Observations upon the Diseases of the Mind* published in 1812 (35). Discussing Rush's

theory on the work and will of slaves, she argues that "slaves suffer the madness caused by submission to the will of the master that destroys their own will and makes them something similar to the paralytic limb, turning them into a condition of absolute passivity" (45). As a result, "[s]laves who are enslaved in order to be transformed into the mechanical activity of labor . . . become its absence" (45). This seems like a very apt description of Bartleby, who submits his will to the mechanical efficiency of the modern regime of production, thus becoming a slave to the master of Capital, until, like Rush's slaves, his enslavement results in his nervous exhaustion and death, whereby he "subvert[s] the master" (45). It is important to note here that the law of the master contains its own subversion, just like the law of energetic conservation that fueled industrial productivity. As Arsić notes, the "madness that escapes the law . . . is caused by submission to the law" (44). Bartleby's madness is nervous exhaustion, a lawful outgrowth of mechanical efficiency, making him both something more and something less than an idle threat: something more because he represents a threat latent within the system of production itself, which, consequently, cannot be sustained regardless of all moral reform, and something less because his inaction is the result of submission rather than resistance.

Bartleby, accordingly, cannot be a figure of political revolt, though he is often interpreted as one. At the beginning of *Ugly Feelings* (2005), Sianne Ngai asks, "[i]s Bartleby's unyielding passivity, even in the polemical act of withholding his labor ("I prefer not to"), radical or reactionary? Should we read his inertness as part of a volitional strategy that anticipates styles of nonviolent political activism to come . . . ?" (1). Many interpreters would answer positively to these questions. For instance, Giorgio Agamben argues that Bartleby represents "the strongest objection against the principle of sovereignty" (48). And Zizek has coined the phrase "Bartleby Politics" to designate a "refus[al] to participate" as "the necessary first step which, as it were,

clears the ground, opens up the place, for true activity, for an act that will actually change the coordinates of the constellation" (342). And yet these interpretations of Bartleby totally miss the point that Bartleby signifies the death of all action. Melville's story is thus far more cynical but simultaneously more subversive than these authors realize. It is more subversive because it views resistance as built into the fabric of the world, so that the system will, ultimately, consume itself. Yet it is more cynical because this resistance offers no hope for alternative systems based on the same material-energetic conditions, and thus for humanistic progress of any kind. This is the meaning of the narrator's final lament, "Ah Bartleby! Ah humanity!,' which ends his epilogue about Bartleby's time in the "Dead Letter Office" (41). A dead letter is a letter that goes nowhere in that it is sent but never arrives. In the larger context of the story, the letter must be associated with the letter of the law, which, literally, represents the material of Bartleby's mechanical labor. The metaphor that ends the story thus implies that the work of Bartleby, representing the work of modern humanity, is going nowhere. This does not, however, mean than some alternative course of human action could, conceivably, arrive at its destination. All human action, in a mechanical world, can only amount to work wasted.

In subtle ways Melville does imply that this vision of humanity represents a diminished state, thus offering a glimmer of hope in an otherwise dark world. I have already commented upon the sense of pathos and loss that is evoked by the contrast between the mechanical Bartleby and the more or less human others who work around him. This is not to say that any of them represent a human ideal, but simply that the negative weight that Bartleby creates in the story is partially a result of his standing out amongst the other characters. More telling are certain comments that the narrator makes that allow one to infer a fuller conception of humanity. For instance, the narrator says that Bartleby seems "absolutely alone in the universe" (Melville "Bartleby" 26).

The linking of Bartleby with "humanity" in the final line allows us to read backwards here and see Bartleby as the representative of a Godless humanity whose only reality is the mechanized universe of scientific materialism and the world of material production and consumption that it authorizes. Completely alone in a universe reduced to rote mechanical processes, Bartleby, as humanity, negatively implies the loss of a spiritual dimension in human life. This loss is all the more tragic in that the mechanical processes that form the basis of this reality are governed by a law of one-way dissipation, making the widespread belief in progress a form of mass delusion. While it is true that the narrator attends Church, his religion is likely intended as a source of criticism in so far as it permits, practically if not theoretically, the mechanical enslavement of humanity. Furthermore, on the Sunday he discovers Bartleby living in the office, he exclaims, "[s]omehow, the things I had seen disqualified me for the time from church-going" (22). It is as though he sees in Bartleby a spiritual chasm that routine church attendance could not answer for. He says something similar when he states that Bartleby's "soul . . . could not [be] reached" (22). Bartleby represents a sort of spiritual death that challenges the narrator's religious principles because, as far as the narrator can judge, Bartleby leads a morally exemplary life. The narrator even states, "[i]t was not to be thought for a moment that Bartleby was an immoral person" (19). Though the narrator is a kind man, his religion is complicit in an unjust and spiritually deadening socio-economic order because it does not condemn it outright and because it fosters the illusion of spiritual life where there is none. Having reduced the spiritual life to moralism in the service of law and order to sustain commercial productivity, it blinds its followers to their own spiritual vacuity. Bartleby mirrors this vacuity for the narrator, and for Melville's readers, who are given the opportunity of recognizing themselves in the wasted figure. Bartleby's negativity thus

becomes affirmative in so far as the recognition of a wasted life facilitates the possibility of conceiving of its opposite.

Chapter Four: Manifest Entropy

"Humans are always immersed in order and disorder, in war and peace" --René Girard, *Battling to the End* (2010)

The work and waste that were quantified in the laws of energy and entropy and that equally belonged to the ostensibly natural world of the cosmos and the ostensibly social world of humanity were reinterpreted in the 1870s as measures of atomic order and disorder, respectively. Building on the work of Rudolph Clausius, who helped establish a link between heat and ordered atomic motion, thinkers such as James Clerk Maxwell and Ludwig Boltzmann were able to devise a theory of heat's dissipation, or energetic waste, as a manifestation of growing atomic disorder. This development was able to reconcile the emerging science of thermodynamics with the Newtonian mechanics that had hitherto dominated the natural sciences, the two previously having been at odds over the directionality of physical processes. For whereas the former had originally posited the irreversibility of energetic dissipation, thereby introducing "time's arrow" into the physical sciences, the latter posited the reversibility of all mechanical motion. Starting with Maxwell's famous thought experiment of a being[31] capable of manipulating atoms and thus reversing the flow of heat without contravening any of the laws of mechanical motion and concluding with Boltzmann's innovative thought on the tendency of all physical systems to spontaneously move towards the most probable distribution of their constituent parts, the new interpretation of entropy was based solely on statistical probability, rather than any inviolable certainty. Henceforth it was only probable that heat would flow from hot to cold and not vice versa, and that atoms would move from a highly ordered to a disordered state rather than the opposite. This probability was based on the fact that the dissipated or disordered state was the

[31] This is Maxwell's demon.

more probable state for a system to be in, there being more ways for the constituent parts of any given system to be disordered than ordered. Ilya Prigogine notes that "the most probable state available to a system is the one in which the multitude of events taking place simultaneously in the system *compensates for one another statistically*" (124 his emphasis). This means that in the "most probable," and, thus, most disordered state, difference is cancelled out, something that is easy enough to see in the case of heat's flow into the cool whereby a temperature gradient is annulled. But it is equally the case atomically, whereby atoms become interchangeable within the over-all system. The new interpretation of entropy that emerged in the 1870s meant that the universe was probabilistically tending towards disorder, undifferentiation, chaos.

This new interpretation of entropy had far-reaching consequences. As Katherine Hayles notes, "to think of entropy as a statistical measure of disorder allows its extension to systems that have nothing to do with heat engines" (41). Henceforth social, historical and economic phenomena could be analyzed using the concept of entropy-as-disorder, something that continues to this day. For example, in a recent book titled *How Will Capitalism End? Essays on a Failing System* (2016), economic sociologist Wolfgang Streek predicts "a prolonged period of social entropy, or disorder" as the capitalist system, which he defines as one of "improbable order," reaches its final stages (13). Yet it would be a mistake to view this application as a simple case of scientism in which an expert outside the field of the physical sciences borrows concepts therefrom out of some sort of intellectual impoverishment. Very much like the tension between productivity and exhaustion which was discussed in chapter three, the tension between order and disorder has been a hallmark of modernity. Marshall Berman describes the modern industrial world as "a maelstrom of perpetual disintegration and renewal" in which, quoting Marx, "all that is solid melts into air" (15). Throughout this period, physical science, no less than social analysis and

literature, was the product of a "cultural field" of endless upheaval. The fact that physical science is not the original from which all other considerations of order/disorder are derivative can clearly be seen in the fact that the statistical analysis of gases undertaken by Maxwell and Boltzmann in the 1850s which eventually lead to the statistical definition of entropy as a measure of disorder was partially inspired by the work of Belgian mathematician Adolphe Quetelet who developed a theory of "social physics" based on statistics which he used to calculate social probabilities. As Norton Wise notes, "James Clerk Maxwell first obtained the normal distribution for molecular velocities in a gas directly through the gas-crowd analogy after having become familiar with Quetelet's normal curve for social statistics" (53). The atoms, or molecules, in a gas as imagined by Maxwell and Boltzmann were, from the first, analogues of people in a crowd. In other words, the theory of entropy as atomic disorder was, in part, a product of the imagination inspired by studies of social phenomena. Much like Thomson's theory of energetic dissipation, Boltzmann's theory of statistical entropy was a "hybrid," arising from and extending to "any system where there was some measure of order or disorder" (Lindley 93), whether ostensibly natural or social.

This chapter will look at literature of the American frontier as representing just such a system of order and disorder. This representation was equally a product of and contribution to a vision of modernity as a continuous tension between chaos and creation. The settling of the American West, beginning with the Atlantic seaboard (West of Europe) and extending across the continent, was, perhaps, the quintessential modern experiment, entailing the shedding of old socio-political forms and the creation of new ones, all in an effort to prove the hypothesis that the world could be recreated without the inequalities and injustices that history had bequeathed (at least for those of European decent). And the crux of this process was repeated with every westward push, as Frederick Jackson Turner notes, writing that, "American development has exhibited not merely

advance along a single line, but a return to primitive conditions on a continually advancing frontier" (2). Those who represented this human experiment in literature were doing something very similar to what Boltzmann and Maxwell did through their project of imagining the atomic, or molecular, proclivities of gases. Both groups were imagining the trajectory of the modern world. And both imagined it as a tension between an "improbable order" and the disorder that would otherwise ensue.

Order and Disorder in the World of the Settler

Despite the fact that early English settlers, in leaving the old world to settle the new, were breaking with certain socio-political forms, they brought with them a nascent cultural identity that gave a certain sense of order to their pursuit. Roy Harvey Pearce argues that the earliest settlers of America were, in fact, "sustained by an idea of order" that was bound up with their "specifically civilized heritage" (3). The settlers, in other words, self-identified as "civilized" Europeans, and in confronting what could only appear to them as the uncivilized expanse of the American continent, felt themselves to be on the verge of a vast natural chaos inhabited solely by natural, and therefore, "savage," human beings. The opposition that they came to feel between what they conceived of as the civilized European identity and the natural American identity solidified this "idea of order" into ideology in their collective consciousness by highlighting a fundamental difference. Richard Slotkin notes that "[i]n societies that are still in the process of achieving a sense of identity, the establishment of a normative, characteristic image of the group's character is a psychological necessity; and the simplest means of defining or expressing the sense of such a norm is by rejecting some other group whose character is deemed to be the opposite" (68). This "other group" was, for the early settlers, the American "Indian." As Pearce explains, "[t]he Indian became important for the English mind, not for what he was in and of

himself, but rather for what he showed civilized men they were not and must not be" (5). Even as this initially rigid opposition of identities became more fluid as folk-heroes such as Daniel Boone became hybrids of the "civilized" European and the "natural" American, a fundamental difference was maintained. As Slotkin notes, though Boone may have developed some of the natural ability of the native American, to the European mind he "remain[ed] superior to the Indians," having "master[ed] their technique of living, without surrendering his consciousness of 'white' social values" (287). Coming from European stock, Boone was viewed as fundamentally different from the "Indians." He was dedicated to the cause of Western civilization, and though he would fight when necessary, in war "he took no scalps." (286).

One of the ways the settlers differentiated themselves from American natives was through what they identified as the groups' respective modes of combat. Referring to some of the earliest American literature, Slotkin notes that "Indian wars proved to be the most acceptable metaphor for the American experience. To all the complexities of that experience, it offered the simplicity of dramatic contrast and direct confrontation of opposites" (68). The settlers viewed American natives as engaging in "animallike savagery in combat" (76), butchering women and children along with men and engaging in such gratuitously violent practices as scalping their fallen foes. In one early account of the Indian Wars, George Hubbard contrasts the "barbarous inhumane Outrages" committed by the native tribes to true acts of "War" (15). This fundamental difference eventually became enshrined in the Declaration of Independence, in which Jefferson accuses King George III of "endeavor[ing] to bring on the inhabitants of our frontiers, the merciless Indian savages, whose known rule of warfare is an undistinguished destruction of all ages, sexes and conditions of existence" (665). Jodi Byrd explains the logic behind Jefferson's statement when she notes that, in his words, "[t]he non-discriminating, proto-inclusive 'merciless Indian

savage' stands as the terrorist, externalized from 'our frontiers,' and functions as abjected horror through whom civilization is articulated oppositionally" (xxi). Thus, civilizational order in the world of the settler is predicated on a racialized rhetoric that imputes a fundamental difference, the defining characteristic of which is the savagery identified with "Indian" terror. And yet the settlers were ever fearful of the possibility of their decent to the level of savagery that they identified with "Indian" violence. Slotkin argues that the settler was unsure "of his ability to conquer the wilderness in a righteous manner" and "felt himself weak enough to be debased by the wilderness to the level of the depraved natural man" (99). Certainly, incidents from such historical battles as the Pequot War and King Philip's War attested to the fact that the "barbarous inhumane Outrages" that settlers identified with "Indian" warfare could equally be committed by persons of European decent. To commit such "Outrages" was to be mastered by the wilderness, forsaking the law of civilized humanity for the law of nature which was the only law that the "Indian" observed (as far as settler was concerned). When this occurred, order gave way to disorder in the world of the settler as he became the mirror image of his "Indian" Other.

This measure of order and disorder, or difference and sameness, taken between settlers and American natives extended into later eighteenth and nineteenth-century thought, being greatly informed by models of social progress developed in Scotland and France. George Dekker shows how the "stadialist" model of social progress, according to which humans develop through a four-stage process, starting with savagery, passing through barbarity, and then onto varying levels of civilization, influenced American thinking about human differences. Thus, Jefferson refers to "the earliest stage of association living under no law but that of nature," contrasting it with the "pastoral state," and then going on to note the "gradual shades of improving man," concluding in the "most improved state in our seaport towns" (qtd in Dekker 81). According to

this model, the "Indian" is a savage, governed solely by the law of nature, whereas the American of European descent is a representative of civilization and human progress. The march westward from the Atlantic's "seaport towns" thereby becomes the effort of improved man to eradicate savagery in the name of civilization. But while the "[s]tadialists generally stressed the ascendant rather than the descendent phases of social change" (95), viewing human progress "unilinearly" (Pearce 83), nineteenth-century literary representations of this so-called march of progress are haunted by the possibility of a descent from the civilized state into savagery.

Mimesis and Social Chaos

According to the anthropology of René Girard, the dissolution of cultural prohibitions (such as would be found along the western frontier) leads to an escalation of mimetic violence in which cultural differences are effaced. Girard defines this "pure state of reciprocity" as one in which "everyone occupies all the positions, one after another and then simultaneously" until "there are no longer any distinct positions" (*TH* 299). This is the description of an undifferentiated state of statistical compensation in which violence renders different subject positions alike, creating a state of social chaos. This is precisely what can be seen in certain nineteenth-century literary representations of the American frontier. In the texts that will be examined in this chapter such subjective undifferentiation can be seen as occurring, specifically, between European settlers and American natives, and, more generally, between representatives of the law and those outside the law. These two forms of subjective undifferentiation are clearly related in so far as the original dichotomy between European settlers and American natives was frequently conceived as that between civilized law and nature's law, respectively, the latter, to the European mind, being no law at all and invariably leading to "the unruliness and atomism of the[] people" (Slotkin 67). Needless to say, such "unruliness and atomism" became the (un)governing principle of many

white frontiersmen, thereby leading to a secondary but no less important structuring contrast between representatives of the law and outlaws. What is at stake in both representations of human relations along the frontier is the loss of an ordering principle of difference that justified the conquest of the land as one of progress, a loss that entails an undifferentiated state of violent reciprocity in which savagery and lawlessness become the common human denominator in a world of social chaos. The reciprocal violence represented in these texts can be seen in two ways. First, it can be seen in the phenomenon of doubles, in which antagonists mirror one another in reciprocal violence. Secondly, it can be seen in the case of single individuals playing opposing roles in conflictual dynamics, a necessary component of the former phenomenon.

The chapter will begin by identifying the phenomena of doubles in Robert Montgomery Bird's *Nick of the Woods*. It will illustrate how white settlers and the indigenous population of Kentucky become identical in violent reciprocity, focusing, especially, on the characters of Nathan Slaughter and Wenonga. This section will contain a brief detour in which the reciprocal violence of the southern blood feud as represented in Mark Twain's *Adventures of Huckleberry Finn* and *Life on the Mississippi* will be used to elucidate the truly chaotic nature of the frontier violence in question. The chapter will then look at Twain's account of J.A. Slade in *Roughing It* as that of an individual who plays the opposing roles of outlaw and administrator of vigilante justice along the Colorado frontier. It will finally focus on a source book of Twain's, Josiah Dimsdale's *The Vigilantes of Montana*, which places the historical Slade within the conflict of outlaws and administrators of vigilante justice on the Montana frontier, a conflict characterized by reciprocal violence and its concomitant subjective undifferentiation. While this may appear like a counter-intuitive approach to frontier literature, which, generally, is thought to foreground difference and the great ordering enterprise of civilization rather than undifferentiation and the

disordered display of savagery, my contention is not that all the authors in question intended to represent the latter, but that, even where they intended the opposite, to glory in the cause of America's Manifest Destiny, a deeper disorder may be discerned.

It must be emphasized that my reading of these texts through the lens of Girard's mimetic anthropology is not intended to supply some key to the actual historical conditions that prevailed on the American frontier in the eighteenth and nineteenth-centuries. This is especially true in the case of my analysis of the relations between European settlers and native Americans represented in *Nick of the Woods*. It is not my intention to credit Bird's deplorably racist vision of native Americans as violent savages, and then, by applying Girard's paradigm, argue that European settlers were just as bad. Recent scholarship has contributed greatly to a fuller understanding of the ways in which the idea of the "Indian" Other has functioned ideologically. Jodi Byrd argues that "ideas of 'Indianness' have created conditions of possibility for U.S. empire to manifest its intent" (xvii). Mark Rifkin's theory of "imperial interpellation" (14) has complicated this picture somewhat by showing how what begins as an Othering becomes, with national consolidation, an incorporation into the "interpellative logic of union" (13). Thus, the nonidentity that defines American identity becomes, with the consolidation of the latter, itself a form of coercive identity. Byrd acknowledges this latter phase of the dialectic when she writes that "liberal multicultural settler colonialism attempts to flex the exceptions and exclusions that first constituted the United States to now provisionally include those people othered and abjected from the nation-state's origins" (xvii). My intention in all of this is simply to show how Bird's racist vision, supported by the "underlying structures of settler colonialism" (xvii), according to which social order in the new world is predicated on a difference between savage "Indians" and civilized Europeans, is ever haunted by a spectre of disorder that takes the form of reciprocal human violence. This

specter of disorder represents an entropic presence in Bird's narration of the energy of American expansion, and the tension that results therefrom situates him alongside those concerned with systems of order and disorder in the nineteenth-century. Girard's theory, which envisions disorder in human relations as a form of atomistic undifferentiation that is expressed through violence, is useful as an analytic tool in elucidating the entropic logic of Bird's text, as well as those of Twain and Dimsdale.

I realize that it may also seem counter-intuitive to associate reciprocal human violence with entropy, a term that generally connotes exhaustion. And yet just as the effacement of difference through statistical compensation at the atomic level was represented imaginatively as a threat to the sustenance of physical order, so the effacement of difference through violent reciprocity at the human level was represented imaginatively as a threat to the establishment and sustenance of social order. Nineteenth-century American authors represented the waste of human energy, as the capacity to recreate and order the world, not only through the exhaustion attending mechanical labor, but through the violence attending ungoverned human relations. Through doing so, they added their voices to a chorus of anxiety about the modern world of technological and social innovation.

The Dark and Bloody Ground of Human Being

Bird begins his tale of Kentucky by alluding to humanity in a state of nature. His epigraph, taken from book twelve of *Paradise Lost*, refers to the expulsion of Adam and Eve from Eden into the natural and, thus, fallen world.[32] He draws an analogy between this exile and "[t]he

[32] Bird seems to have mistaken the mythical Eden for the land of exile *into which* Adam and Eve were forced by sin, for he writes, "the grief of our first parents for the loss of Paradise was not so deep and overwhelming but that they almost immediately found comfort, when they reflected they had exchanged it for the land of Eden—itself a

exiles of America, who first forsook their homes on the borders of the Atlantic, to build their hearths among the deserts of the West" (Bird 1: 13). Bird does not intend to draw a parallel between Paradise and the Atlantic seaboard, in this case, Virginia, but he does intend to draw a parallel between the wilderness in which the first (mythopoetic) humans found themselves and the wilderness of the Western frontier. It does seem strange, at first, that Bird depicts the natural world, both through his biblical analogy and his historical narrative, as an earthy paradise, or "second elysium" (13), considering the hellish story that follows, in both cases. James C. Bryant rightly notes that "the mythical Eden[33] transported to the Kentucky wilderness is a world of evil, a place of violence, brutality, blood, and death" (353). This description is at odds with Bird's initial description of an idyllic wilderness, but not at all with the violent drama that soon unfolds therein. This tension can best be resolved by making a distinction between the natural world, which, though full of natural dangers, is also full of promise for those willing to brave those dangers, and humanity in a state of nature. For Bird soon adds that, "[t]he rich fields—,the hunting grounds of a dozen tribes of Indians, —to be possessed, were first to be won from an enemy at once cruel, resolute and wily, who had shown no disposition to yield them except with life, and who had already stained them with the best blood of the settler" (14-15). The world that Bird introduces the reader into is one of natural bounty and human violence. The latter is the source of "evil" that plagues an otherwise "Edenic" wilderness, invariably leading to "brutality, blood and death." This accords with the Biblical narrative in so far as the first event this side of Eden is the murder of Abel by his brother, Cain. While Bird's prejudice represents "Indians" as the "enemy," his allusion to the Biblical text and the narrative that follows both represent a state

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paradise, though an earthly and unsanctified one" (13). The Bible clearly represents Eden as the land *from which* the first humans were driven, saying, "the LORD God sent [them] forth from the Garden of Eden" (Gen. 3: 23).

[33] Here Bryant makes the same mistake as Bird. By "mythical Eden," he means the natural world of exile.

of reciprocal violence in which "Indian" and white violence are identical and interchangeable. So, while "Indians" do represent, for Bird, humanity in an uncivilized state, the white settlers of Kentucky soon appear as their equals in barbarity and doubles in social chaos.

Close attention to the language used to describe natives and settlers alike reveals this identity in barbarity. At the outset of the novel, the native tribes are referred to as "wandering barbarians" (18). They are also referred to as "brutes" (40) and "savages" (51), among other, more colorful, epithets. The emigrants from Virginia who arrive at Bruce's station at the beginning of the novel are, for their part, described as "Vandals in quest of some new home to be won with the edge of the sword" (16). The term "Vandals" is a reference to a Germanic tribe of antiquity well noted for their barbarity. Furthermore, Roland Forrester, one of the leaders of the emigrant train and one of the novel's central protagonists, refers to the Kentuckians at Bruce's station as "noisy barbarians" (21) and "savages" (22), while his kinswoman, Edith Forrester, refers to them as "wild people of the woods" (21), a phrase that is echoed in reference to the "Indians" when they are later described as "wild and warlike children of the wilderness" (2: 113). Roaring Ralph Stackpole, the infamous horse-thief who makes no distinctions between the horses of "Indians" and whites, is described as a "demibarbarian" (120), while the band of vigilantes that administer Lynch Law to such transgressors of border order are described by Edith Forrester as, themselves, "barbarians" (117). There is clearly a sense in the indiscriminate use of such terminology that all humans inhabiting the wilderness, outside of the parameters of civilization, are barbaric, whether they have always been so, having been reared there, or have become so through emigrating to the frontier.

Many of the characters in the novel, as well as Bird himself, nonetheless attempt to maintain a cultural distinction between the white settlers and the native tribes. Thus, even while disparaging

their low estate, Roland Forrester must admit that the white inhabitants of the frontier are "one degree elevated above the Indians with whom they contend" (1: 22). This distinction is often made in terms of respective methods of warfare. In his preface, Bird attempts to justify his dark depiction of Native Americans by appealing to "[t]he single fact that he [the proverbial native] wages war—systematic war—upon beings incapable of resistance or defence, —upon women and children, whom all other races in the world, no matter how barbarous, consent to spare" (vi). He follows this argument by evoking an image of the "Indian" "laden with the scalps of miserable squaws and their babes" (vi). This same distinction is made by characters in the novel as well. Tom Bruce disparagingly refers to "the brutes, who murder and scalp a woman just as readily as a man" (40). And Pardon Dodge, at the scene of the final battle, complains to Bruce that his men are "a killing the squaws," further saying, "I can kill your tarnal *man* fellers, for they've riz my ebenerzer, and I've kinder got my hand in; but, I rather calkilate, I han't no disposition to kill wimming" (2: 225). In his garbled dialect Dodge is protesting the slaughter of women by the men of Bruce's station, which, based on his previous statement, the latter would theoretically deplore as well. In yet another scene, just prior to the final battle, Nathan Slaughter comes upon the "beldam" (148) of Wenonga sitting by the fire in her hut. Nathan approaches her with his knife unsheathed, "[b]ut the feelings of the white-man prevail[]" and so he spares her (148). In all such examples a distinction between "Indian" and white methods of warfare is established, putting the whites on a higher moral and cultural ground. As previously noted, this distinction forms part of the "underlying structure[] of settler colonialism," and Bird attempts to apply its logic to his narrative. Thus, Michael Wilson argues, "[m]ost white men in the novel . . . manage to kill as many Indians as possible while still stopping short of committing 'Indian-like' atrocities themselves" (141). Those who do commit such atrocities, such as the men who are the

object of Dodge Pardon's censure, have, according to this logic, degenerated to a state more barbaric than their fellows.

And yet this distinction is completely false. Nathan may hesitate and refrain from killing Wenonga's wife,[34] but his goal, shared by many of the white settlers, is nothing short of the annihilation of the entire native population. In one scene, in which Roland and Nathan rescue Ralph Stackpole from captivity, Roland asks Nathan to spare one of the natives who has been disarmed and who is offering no resistance. To this, Nathan replies, "[t]o the last man of his tribe" before driving his "hatchet into the wretch's brain" (Bird 2: 102). An overly literal reading of Nathan's statement could construe it as only condoning the deaths of all the men of the tribe, and yet what would this entail but the indirect death of every woman and child as well? Wilson refers to this as Nathan's "genocidal project," giving it the odious label of a "Final Solution" (140). Nor is Nathan the sole white to express such genocidal fury. Roland, believing that his kinswomen Edith may have died at the hands of the natives, says, "[i]f it be so . . . I call Heaven and earth to witness, that I will pursue the race of the slayers with thrice the fury of their own malice.—never to pause, never to rest, never to be satisfied with vengeance, while an Indian lives with blood to be shed, and I with strength to shed it" (Bird 2: 62). Here, Roland's oath of "undying vengeance" (74) against the "Indian" race includes women and children. And hearing him declare it, Nathan exclaims, "[t]hee speaks like a man" (62), showing his full agreement. Furthermore, when Nathan finally meets Wenonga and reveals himself to be the Jibbenainosay, he admits to killing "man and boy," saying "there was not one of them spared—they were of the blood of Wenonga" (204). This is the admission of the direct slaughter of children, done by Nathan in retaliation for Wenonga's crime of killing his (Nathan's) children. This means that

[34] She is later kicked to death by Ralph Stackpole.

when Wenonga, referring to himself in the third person, says, "Wenonga is a great chief . . . he is childless; but childless he has made the Long-knife," his words equally apply to Nathan who is also childless and has made Wenonga childless in turn (204). They are both childless butchers of children, mirror images of brutality and vengeance.

One possible rationale for this identity in brutality that could be used to maintain a mark of difference between the natives and the white settlers is that the latter have only resorted to such violence out of necessity, in order to fight fire with fire, so to speak. This is how Wilson reads it. He argues that "Indian atrocities in *Nick of the Woods* are condemned as out-of-control deviltry, while white killings are viewed solely as a necessary and understandable response to that deviltry" (Wilson 139). He further writes, "white men lose their self-control only as a result of Indian violence, and do so only long enough to create a new white order out of the 'howling wilderness'" (139). A similar position is expressed by Gary Hoppenstand who distinguishes between "heroic" and "chaotic violence" (51) and who argues that "Nathan functions as an elaborate symbol of societal violence justifiably unleashed" whereas the Indian stereotype represents "barbarism, social chaos, and precocious brutality against women and children" (53). Hoppenstand further argues that "[t]he vigilante hero . . . typically becomes as brutal as his enemy so that the enemy can be frightened and eventually defeated" (59). This interpretation seems problematic to me. Wilson describes a loss of control on the part of the white settlers as somehow being under their control, as though their violent frenzy could be subject to rational calculation. This is not plausible. Either their violence is rational and under control or it is not. Similarly, Hoppenstand argues that the so-called hero is capable of becoming "as brutal as his enemy," but provisionally so, with well-defined intentions, and without ever becoming the embodiment of "chaotic violence" that engenders "social chaos" like his "enemy." Once again,

this is not plausible, nor does it accord with the textual evidence. Nathan, the theoretical hero, is not a sane man when he is in the throes of violence. He suffers from disordered mental states resulting from violence inflicted upon him and which play some role in his own violent actions. For instance, at the scene at the old Ashburn cabin, where Nathan first reveals his violent side to Roland, the former's "appetite for blood" is said to have "set him entirely beside himself" (Bird I: 199). This is the description of someone who is out of his mind and thus out of control. Nathan is not "playing at" chaotic violence, as Hoppenstand would suggest. He has, rather, been sucked into its whirling vortex.

Of course, in so far as Wilson and Hoppenstand intend to describe Bird's position on the difference between white and "Indian" violence, they are correct. Bird does, indeed, view white frontier violence against Native Americans as justifiable in the context of the novel, thereby pointing towards a fundamental difference between the two. In one of the instances in which his editorial voice intrudes upon the narrative, Bird attempts to justify the practice of white scalping in contrast to "Indian" scalping, by maintaining that "[i]t was, and is, essentially a measure of retaliation, compelled, if not justified, by the ferocious example of the red-man," to which he then adds, "[b]rutality ever begets brutality" (106). He further argues that "[s]uch is the practice of the border, and such it has been, ever since the mortal feud, never destined to be really ended but with the annihilation of the American race, first began between the savage and the white intruder" (106). Though Bird wants to differentiate between the practice of white scalping and "Indian" scalping, to justify the former as rational and necessary while condemning the latter as irrational and gratuitous, he all but admits that the practice of white scalping is "not justified." He describes it as a matter of compulsion and "retaliation," neither of which denotes a rational act which would be capable of justification, but, rather, one that is determined by outside forces,

in this case, "Indian" violence. In other words, the "Indian" is "the ferocious example" that "begets brutality," mimetically, in the white man, but, for his part, the "Indian" is only retaliating to the violence of the "white intruder."

This attempt at justification represents an attempt to establish a difference where there is, in fact, none, to see order where there is only disorder. Though he does not openly admit it, Bird's words represent life on the frontier as one in which cultural differences are effaced as humans are brought into compulsive and retaliatory relations of brutal action. And in so far as his clinging to difference represents the thinking of the parties involved, Bird reveals how a key ingredient of growing undifferentiation among humans is, precisely, a belief in difference. Girard explains that "*from the inside* [of conflict] *you must always believe in your difference*," but, "[f]rom the outside, the adversaries look like what they are: simple doubles" (*BTTE* 14 his emphasis). He further notes, "among humans, the fact that no one ever feels they are the aggressor is because everything is always reciprocal" (18). In other words, *"[t]he aggressor has always already been attacked*" (18 his emphasis). Elaborating on this point, Girard further states, "[w]e make others understand that we recognize the signs of aggressiveness which they manifest, and they in turn interpret our posture as aggression" (18). This symmetry which seems asymmetrical to those involved in conflict leads to what Girard calls an "escalation to extremes" (18), a growing state of reciprocal violence in which nothing is justified though everything appears to be to those involved. This is because each side views itself as retaliating to an initial offence, and thus as essentially different from the offenders, though they are, in fact, identical. This identity forces us

to re-read Bird's statement about the eventual "annihilation of the American race" in its full ambiguity, as referring to both native Americans and the settlers of what we now call America.[35]

The impossibility of establishing an initial offence that would create a substantial mark of difference by justifying the action of one party engaged in violent reciprocity can clearly be seen in the fictional feud between the Grangerfords and Shepherdsons in Twain's *Adventures of Huckleberry Finn* and in the discussion of the real-life feud between the Darnells and Watsons in chapter twenty-six of *Life on the Mississippi*. In the former, Buck Grangerford describes the feud between his family and the Shepherdsons to Huck in the following manner: "a feud is this way. A man has a quarrel with another man, and kills him; then that other man's brother kills him; then the other brothers, on both sides, goes for one another; then the cousins chip—and by and by everybody's killed off" (Twain *HF* 128). When Huck responds by asking what started the feud, Buck says, "I don't know" (128). When Huck then asks who took the first shot, Buck answers with, "Laws, how do I know? It was so long ago" (128). When Huck finally asks if anybody knows, Buck says, "[o]h, yes, pa knows, I reckon, and some of the other old folks; but they don't know, now, what the row was about in the first place" (128). Though Buck begins by saying that his father knows how the feud originated, he ends by saying that no one knows what it was about "in the first place." As Jordana Ashman Long puts it, this feud, embodying a state of reciprocal violence, has been going on "from time immemorial" (30).

[35] There is a point in the novel which will be discussed further on for other reasons in which Bird, describing a skirmish, begins, "each individual, whether American or Indian" (v.II 10). Here, the term "American" is applied to European settlers as opposed to those previously said to belong to "the American race." There is, thus, an ambiguous sense to the phrase that further enhances what I have described as the identity of the two groups within the novel.

What Buck is describing is the Southern blood feud, an institution which, according to Arthur G. Pettit, Twain viewed, along with the duel,[36] as "the antebellum South's . . . most deplorable, socially-sanctioned outlet[] for violence" (22). Most scholars are agreed that Twain's source for the fictional Grangerford-Shepherdson feud was the historical feud between the Darnells and Watsons discussed in chapter twenty-six of *Life on the Mississippi,* which has an equally obscure origin.[37] The "handsome man" who recounts some of the details of the latter feud to Twain while both are passengers aboard a Mississippi steamer says, "[n]obody don't know now what the first quarrel was about, it's so long ago; the Darnells and Watsons don't know, if there's any of them living, which I don't think there is. Some say it was about a horse or a cow—anyway, it was a little matter" (*LM* 386). This is very similar to what Buck tells Huck, though rather than making an appeal to a mythical "horse or cow" to explain the feud's genesis, Buck simply says "[t]here was trouble 'bout something" (*HF* 128). This vagueness in the fictional account helps emphasize the meaningless and chaotic nature of the violence which is present in both accounts. Girard argues, "[t]he slightest little difference, in one direction or another, can trigger the escalation to extremes" (*BTTE* 18). This refers to the perceived signs of aggression previously discussed. Any such "difference" is capable of escalating into an extreme cycle of reciprocal violence. Such difference is implied when the "handsome man" refers to the "little matter" that set the Darnells and Watsons feuding and when Buck refers to the "trouble 'bout something" which set the Grangerfords and Shepherdsons at enmity. Neither amounts to a good reason for the ensuing

[36] It is worth noting that, in *Battling to the End* (2010), Girard, building on the work of Prussian military theorist Carl von Clausewitz (1780-1831), argues that all wars and feuds are duels on a larger scale. The duel is, therefore, the irreducible component of all larger conflict.

[37] In "Blood on the Hills: The Hatfields and McCoys and Feuding Families in Huckleberry Finn" (2014), Jordana Ashman Long discusses another possible source for the Grangerford-Shepherdson feud. Following the lead of Robert H. Sykes who, in "A Source for Mark Twain's Feud" (1967), first raised the possibility, Long proposes that a later feud between the Hatfields and McCoys, also in the Kentucky area, may have provided source material for Twain, though she points out the difficulty of such an argument.

violence which would justify one side while condemning the other, and thus establish a real moral and cultural difference between the two feuding parties.

In these descriptions of the southern blood feud, Twain elucidates something about the reciprocal nature of human violence which maps well onto the conflict between the settlers and the natives in *Nick of the Woods*. Twain's "handsome man," in fact, makes a very interesting comment which gestures towards the identical nature of all feuds. Referring to the murder of a "young man of nineteen" by one of the feud families he says, "[d]on't remember whether it was the Darnells and Watsons, or one of the other feuds" (Twain *LM* 387). So, not only are the Darnells and Watsons identical in their violent reciprocity, but, taken together, they are identical to all the other feuding parties to the point that they cannot be differentiated by an observer. This argument can be extended to the "mortal feud . . . between the savage and the white intruder" that is Bird's subject in *Nick of the Woods.* Like the southern feuds, this feud represents an escalation of reciprocal violence in which each side views itself as retaliating to some original offence committed against it. Though he openly refers to the settlers as "white intruder[s]" and begins the novel by describing the Kentucky wilderness as a place to be won, through violence, from the local native tribes, Bird, for ideological reasons, wants to place the initial offence on the side of the "Indian." This, as I have shown, is impossible to justify. But with Nathan, an ex-Quaker, as the central symbol of white violence in the text, it is equally impossible to justify placing the initial offence on the side of the settlers. Clearly, this use of Nathan is part of Bird's attempt to situate the origin of violence on the "Indian" side and thus a part of the racist representational practice that justified settler colonialism. Bird's logic is undermined, however, by the use of terms like "white intruder," and the result, within the text, is a state of reciprocal violence and growing subjective undifferentiation.

The state of undifferentiation which characterizes the frontier violence in *Nick of the Woods* is quite apparent in one particular battle scene that takes place along the river bank. Roland, having been ambushed with his party and knocked unconscious, regains consciousness to witness a short skirmish between a group of Kentucky Regulators and the "Indians" who are his captors. Roland, a veteran of the Revolutionary War, and something of a military strategist, watches a fight that is described as being "so different in most of its characteristics from all that [he] had ever before witnessed" (Bird 2: 9), and so foreign in its principles from what he considered the "science of war" (11), that he is captivated all over again. In contrast to the typical battle between two well defined sides, the scene is described as follows:

> it seemed the first object of each individual, whether American or Indian, to separate himself as far from his friends as possible, seeking his own enemies, trusting to his own resources, carrying on the war on his own foundation, —in short, like the enthusiastic Jerseyman, who, without belonging to either side, was found at the battle of Monmouth, peppering away from behind a fence, at whatever he fancied a foeman, —fighting on his own hook' entirely. (10)

Though the identity of the "Jerseyman" is a mystery to me, the reference to the "battle of Monmouth" is to a battle from the American Revolutionary War fought in New Jersey. For the present purpose, however, these particulars are unimportant. What is important is the atomistic nature of the battle, according to which individuals separate themselves off from the masses of which they are the component parts, as well as the compensatory nature of the individual atoms. The passage refers to "each individual, whether American or Indian," following a common

course. It also says that, like the analogous "Jerseyman," no one appeared to belong to a side, but simply shot helter-skelter wherever they perceived signs of aggression. This chaotic melee on the river bank clearly represents a state of undifferentiation, or disorder, and taken as a microcosm of the frontier violence the novel depicts, it highlights the interchangeable and compensatory nature of all the antagonists, which is seen most clearly in the case of Nathan and Wenonga.

As noted, Nathan was a Quaker, belonging to the Society of Friends in Pennsylvania, a fact that makes his transformation into the mirror image of a heartless Indian[38] chief all the more striking. Roland alludes to this when he and his party come upon Nathan in the woods after having stumbled upon the mutilated corpse of a Shawnee and initially mistake him [Nathan] for the Jibbenainosay (of course, their real mistake is in thinking they are mistaken). Roland says, "you must allow, that our terrors were ridiculous enough, when they could convert a peaceful man like you into such a blood-thirsty creature" (1: 146). Nathan has, in fact, become such a "blood-thirsty creature," one who kills Shawnees out of "butchering spite" (1: 52), mutilating their corpses "in the mere wantonness of a malice and lust of blood which even death could not satisfy" (140). Blood thirst is also an attribute of Wenonga's, who brags, "I am Wenonga, a great Shawnee chief. I have fought the Long-knives, and drunk their blood" (2: 202). The violence committed by Wenonga against Nathan has resulted in the latter becoming the mirror image of the former. If Wenonga's offense had been the first in the "mortal feud" between the whites and "Indians" on the Kentucky frontier, Nathan would perhaps be justified and thus retain a degree of difference, but such a supposition is impossible to make. Wenonga was just retaliating to the

[38] Wenonga likes to brag that he has no heart. In one instance he says to Nathan, "[m]y people have soft hearts […] but I am a warrior with no heart" (v. II 205).

aggression of the "white intruder," who was, himself, retaliating to aggression in kind. "And so on" (*BTTE* 18), as Girard puts it.

While the complete interchangeability of the antagonists, exemplified most clearly in the duel between Nathan and Wenonga, does not become fully manifest until the end of the novel, there are signs of it as the drama unfolds. For instance, shortly after Roland's party meets Nathan in the woods and the latter, along with his trusty dog, Peter, becomes the party's scout, they come up behind five Shawnees who have been trailing the party as they travelled through the woods in circles. Roland asks Nathan, "how shall we avoid these five villains before us," to which Nathan replies, "[b]y keeping them before us . . . that is, friend, by following them, until such time as they turn where thee turned before them . . . when we, if we have good luck, may slip quietly forward, and leave them to follow us" (Bird 1: 152). In this case, Nathan is advising Roland that they follow those who are following them, thereby blurring any clear distinctions between predators and prey. In another instance, after Nathan has told Roland about the violent fate of the Ashburn family, the latter asks whether the family was avenged, to which Nathan replies, "[i]f thee calls killing the killers avenging . . . the poor deceased people had vengeance enough" (180). The phrase "killing the killers" similarly blurs any clear distinctions between the parties involved, pointing towards the identical nature of all those caught in cycles of reciprocal violence in the text. In this case it is the men of Bruce's station being described as "killing" the Ashburn's "killers," but the description could equally apply to Nathan who, throughout the novel, hunts Wenonga and the members of his tribe with the sole desire to kill every one of them.

The identity of all killers becomes most visible when Nathan steals clothes and war paint from one of the natives he has just killed in order to disguise himself for entering Wenonga's village. There is, of course, a large degree of irony in the fact that it is precisely a disguise that

reveals Nathan's real identity as a simple double of his adversary. Having donned the apparel of the deceased "Indian," Nathan's "metamorphosis was so complete, that Captain Ralph, as he swore, could scarce look at him without longing . . . 'to be at his topknot'" (2: 116). In other words, the likeness is so accurate that Ralph can not help wanting to scalp Nathan on the spot. While Bird clearly intended this transformation to be a sign of white superiority and subterfuge, it actually serves as a visible sign of the identical nature of the adversaries that had previously been harder to discern.

This identity becomes even more apparent when Nathan is captured and comes face to face with Wenonga. The first thing the latter says to Nathan, who is being held captive by a group of warriors, is, "[m]e Injun-man . . . Me kill all white-man" (169). This statement of genocidal intent mirrors Nathan's previous vow to Roland to kill the natives "to the last man of [their] tribe." Following this statement, Wenonga gives Nathan a "savage a look of malice," to which Nathan replies by "bending upon the chief a look more hideous than his own" (169). This mirroring continues when the doubles meet in Wenonga's hut. There, covered in war-paint like Wenonga, Nathan speaks to the former in the Shawnee tongue while revealing a "sneer . . . of gratified malice" (203). In this case, Wenonga's "malice" is being mirrored back to him in his own home by one who looks and sounds just like him. Bird, undoubtedly, wants to emphasize the superiority of the white man through Nathan's mastery of the Shawnee language. For he writes that Nathan's words "were delivered in the Shawnee tongue, correctly and unhesitatingly pronounced" (203). This contrasts with the way in which Wenonga, and the rest of the "Indians," haltingly and imperfectly speak English. And yet despite Bird's bias, this scene clearly conveys the identity of the antagonists, reaching its climax when, as previously noted, each admits to being the killer of the other's progeny, and when, having convinced Wenonga to untie his bonds

so he could reveal to him the Jibbenainosay, Nathan does so by jumping upon Wenonga with "the rancorous ferocity of a wolf" (206) and burying a tomahawk in the latter's brain. The tomahawk Nathan uses to deliver the fatal blow to Wenonga is Wenonga's own, creating another mark of identity between the two antagonists. And when Wenonga is dead, Nathan then uses the former's scalping-knife to tear "the gray scalp-lock of the warrior" from his "dishonoured head" and carve the mark of the cross upon his breast (206-207). In this way, Nathan manages to "out savage the savage," as Terence Martin, borrowing a phrase from Pearce, describes the scene (4). Nathan then leaves Wenonga's tent carrying both the latter's bloody scalp and the "withered scalps . . . of his own murdered children," which Wenonga had kept as trophies. The pairing of scalps represents the cycle of "never-dying revenge" (Bird 2: 207) in which all are trapped and in which all become identical.

It is tempting to take the symbol of the cross that Nathan carves into the flesh of his victims as a mark of differentiation, and this is likely how both Bird and Nathan intend it, as a symbol of righteous vengeance wrought upon a barbaric foe. Yet according to Girard, the cross, as a Christian symbol, stands for a refusal to engage in mimetic violence. To follow Christ, one must "adopt the behaviour recommended by Christ: abstain completely from retaliation, and renounce the escalation of extremes" which, eventually, "will lead straight to the extinction of all life on the planet" (Girard *BTTE* xiv). By using the symbol of the cross in violent retaliation, Nathan is, effectively, emptying it of all such meaning, a fact that he is, perhaps, aware of in his more lucid moments when he expresses shame over his violent actions and fear that he should tarnish the reputation of the Quaker faith. Pearce notes that "[t]he Quaker problem was not to discover and describe the differences between savage and civilized men, but rather to discover and make known likenesses in terms of which all men could live the good, peaceful life together and in

terms of which savages might be 'convinced' into civilization" (35). This illustrates how far Nathan has deviated from his faith. Rather than identifying with the 'savages,' which, in a reversal of the logic of mimetic violence,[39] may have facilitated the harmonious co-existence of different peoples, Nathan, through his undying desire for vengeance, clings to a belief in his difference from the "savages," and thus becomes identical to them in violence as they all careen towards extinction. He thus becomes Old Nick, a devil attempting to hide his savagery behind a cross that only serves to reveal it all the more.

The scene between Nathan and Wenonga foreshadows the chaos into which the entire village erupts as the latter's murder is discovered simultaneously with the arrival of reinforcements from Bruce's station. Following the discovery of Wenonga's mutilated corpse, "voices [are] uplifted in rage" and soon the "Indians" are "bawling for revenge" (Bird 2: 209). Roland is surrounded by a group of "Indians" armed with hatchets and knives whose struggle over him is compared to "the conflict of enraged hounds over the body of a disabled panther, that all are emulous to worry and tear" (211). In this case, mimesis is functioning both between the "Indians" and whites through a well-established cycle of vengeance and between the "Indians" themselves, as they *emulate* each other in their ferocity. A couple of the older warriors who want to save Roland for a communal sacrifice at the stake actually receive blows in which their blood is shed by other "Indians" (211). Into this scene of already chaotic violence ride "an army of avenging white-men" (217) who are described as "burning for revenge" (231). Women and children who flee the village in an attempt to escape the avenging whites receive a "deadly volley" (216) from the latter who, like the "Indians" some moments before, are set upon "murdering all" (212). This is the point at which Pardon Dodge protests the murdering of women and thereby attempts to

[39] According to which a belief in difference leads to undifferentiation.

restore some form of differentiation into the chaotic melee. And yet Dodge soon learns that the "Indian" scalp he is holding as the trophy of a recent kill actually belonged to a disguised white man, thereby blurring the lines between adversaries once again. Several other whites engaged in the attack against the "Indians" simultaneously attack the renegade white man, Abel Doe, while the latter's daughter watches on in horror. For this, Tom Bruce refers to them as "perditioned brutes" (227), a phrase that one would expect, in the context. to be applied to "Indians" rather than whites. Thus, the village becomes a scene of chaotic violence with "Indians" attacking whites, whites attacking "Indians," "Indians" attacking "Indians" and whites attacking whites, and is, therefore, well described as a "disorderly hamlet of barbarians" (207). The scene re-stages the disorderly, atomistic violence Roland witnessed by the river bank as individuals separate themselves from any well-defined sides in a frenzy of violent mimesis in which all subject positions become interchangeable.

Nick of the Woods represents the frontier as a place where human relations tend towards disorder. The fact that a semblance of order emerges when the whites from Bruce's station raze the native village and take the remaining villagers prisoner does not in any way negate this fact. Dana D Nelson argues that the novel "advocates for a hierarchical political order" (109). What she has in mind is a hierarchy among whites, consisting, on the one hand, of the common people, and on the other, their representative leaders. Yet Bird also clearly advocates for a hierarchical order in which the native populations are subjugated by the white settlers. Both forms of order represent what Nelson describes as a stratification of the common good (10). And yet as Girard notes, "all order is suspect" (*BTTE* 141). In the case of the apparent order established between settlers and natives, it is suspect, not only because it forecloses on the possibility of the common good, but because it obfuscates the common evil on which it is founded. The destruction of the

native village and its surrounding fields by the white settlers is described ambiguously as "a work of cruel vengeance," and one of "policy" (Bird 2: 232), the latter representing the cause of an emerging order, the former that of violent disorder. And yet in so far as the latter is grounded upon the former, it represents what Girard calls a suspension of reciprocal violence (17). There can be little doubt that this is the case. Nathan, who helps raze the village, does so with what is described as "the most savage exultation" (Bird 2: 237), indicating that the act is one of savagery and still part of the cycle of reciprocal violence the text unfolds. When Kentucky is later made into a state "too great and powerful to be longer exposed to the inroads of savages" (243), this state of suspension is preserved. But so long as it is, it "borders on chaos" (Girard *BTTE* 14).

Subjects Torn in Twain (A Demon's Eye View)

Antagonists become undifferentiated in violent reciprocity through the alternation of subject positions. This alternation, or oscillation, reaches a point at which meaningful distinctions can no longer be made. For instance, by alternating between the positions of aggressor and defender, the antagonists in Bird's novel become violent doubles and those categories become meaningless as chaos abounds. Girard describes this as a "pure state of reciprocity" in which "everyone occupies all the positions, one after another and then simultaneously" so that "there are no longer any distinct positions" (*TH* 299). In looking at Bird's novel, I focused on the phenomena of doubles, and thus on the interchangeability of antagonists within this chaotic dynamic. In turning to *Roughing It* by Twain, my focus will, initially, be on a single protagonist who occupies opposing and contradictory subject positions, sometimes in succession, sometimes simultaneously. I am here referring to J.A. Slade, the so-called "outlaw among outlaws" (*RI* 90), mentioned by Twain in chapters 9-11. By focusing on a single individual who is inherently divided, the analysis will emphasize the subjective chaos that is embedded within the greater social chaos. It must be

noted, however, that the "subjective chaos" I am referring to is formally distinct from the "social chaos" I have described in so far as "chaos," in the former, refers to a difference or lack of self identity within the subject, whereas, in the latter, it refers to an overall state of sameness within the social body. The former is, however, a necessary component of the latter. In other words, it is precisely the lack of self identity in the subject, the product of mimesis, that manifests itself as identity and sameness in the social body when all subjects become interchangeable and subject positions consequently lose meaning. The latter phenomenon will subsequently be analyzed in connection with Slade by looking at one of Twain's source books, *The Vigilantes of Montana* by Thomas Josiah Dimsdale, which places the historical Slade within the conflict of outlaws and administrators of vigilante justice, an antagonism characterized by reciprocal violence and its concomitant subjective undifferentiation.

Twain describes Slade as "an outlaw among outlaws." This could, of course, simply mean that he is a shining example of the outlaw type. And yet Twain follows this description by adding that Slade, an outlaw himself, is "the relentless scourge" of all outlaws (90). This additional phrase demands that we read the initial description as containing a sort of dialectical reversal: if to be an outlaw is to negate the law, to be an "outlaw among outlaws," in the sense of being their "relentless scourge," is to negate the negation and occupy the contradictory position of being at once outside and inside of the law, as it exists in frontier conditions. Rather than conceiving of this in the Hegelian sense as a positive synthesis in which dialectical tensions are resolved, however, it should be viewed as a position in which those tensions are firmly maintained. As an individual who is both inside and outside of the law, Slade then becomes a component in a larger social body in which such distinctions lose all meaning, giving way to social chaos.

As Twain tells it, Slade, an outlaw from the states, well known for his "fearless resolution" (91), was hired by the Julesburg Overland division to put an end to the thievery that had plagued the company. In other words, precisely *as an outlaw,* Slade was hired to administer law along the frontier. Twain writes, "[f]or some time previously, the company's horses had been frequently stolen, and the coaches delayed, by gangs of outlaws" (92). Slade soon, however, "made short work of all offenders," with the result that "delays ceased, the company's property was let alone, and no matter what happened or who suffered, Slade's coaches went through, every time" (92). Slade is thus described as effecting some rudimentary form of law and order along the frontier. Twain goes so far as to say, "Slade's *energetic* administration had restored peace and order to one of the worst divisions of the road" (93 my emphasis). And yet what did this "energetic administration" consist of? Twain concedes that "in order to bring about this wholesome change, Slade had to kill several men—some say three, others say four, and others six" (92). These extrajudicial killings, while committed in the name of law and order at the company's behest are, themselves, criminal acts, by any reasonable standards, that far outweigh simple theft. As an "outlaw among outlaws," Slade is acting both inside and outside of the law.

This becomes even more apparent when Slade is transferred from the Julesburg division to the "Rocky Ridge division in the Rocky Mountains, to see if he could perform a like miracle there" (93). This territory "was the very paradise of outlaws and desperadoes" (93). According to Twain, "[t]here was absolutely no semblance of law there. Violence was the rule . . . The commonest misunderstandings were settled on the spot with the revolver or the knife" (93). And yet Slade, upon arrival, does not establish a new rule, but, rather, according to the old rule (violence), opposes the unruly (those ruled by violence). Twain writes, "Slade took up his residence sweetly and peacefully in the midst of this hive of horse-thieves and assassins, and the

very first time one of them aired his insolent swaggerings in his presence he shot him dead!" (93). Here, Slade is not requiting theft or murder, but *insolence*. In other words, like the outlaws he has come to vanquish, he is settling common misunderstandings with brutal violence. He is, of course, also doing such things as requiting theft on behalf of his employers and other victims of the road agents. For instance, Twain explains that Slade "captured two men who had stolen Overland stock, and with his own hands he hanged them" (93). Reflecting on this, Twain writes, "[h]e was supreme judge in his district, and he was jury and executioner likewise" (93). All of these titles denote a legal character, however dubious. In another instance, hearing about some emigrants who were robbed, Slade "rode to a ranch, the owners of which he suspected, and opening the door, commenced firing, killing three, and wounding the fourth" (94). In both of these examples of legal retribution, Slade's actions seem far more criminal than the actions of the offenders, especially in the latter case in which he only "suspected" the ranch owners of theft. Slade's actions thus combine lawfulness and unlawfulness, successively and simultaneously, reflecting his position as an "outlaw among outlaws," a contradictory position representing a dynamic of social chaos.

Most critics seem to agree that Slade embodies contradiction. Quite a few regard the main contradiction he embodies as that between romance and realism, a tension that in many ways defines the text. Michael Hobbs writes, "[c]ritics have most often read Mark Twain's *Roughing It* as a story about a tenderfoot's initiation into the harsh realities of the wild West and about the ruthless debunking and burlesquing of that tenderfoot's romantic views" (13). He cites a 1957 article by Henry Nash Smith in which the latter illustrates how the first person "I" that narrates the text combines "the tenderfoot tourist" and the "veteran" who has grown wise to the ways of the world. Applying the terms of this dichotomy to Slade, Jennifer McKellar refers to Twain's

"mythical account of Slade (who was a real person)," noting that "[t]hroughout Twain's complex portrait of Slade, romantic and realistic elements war with each other" (340). Lee Clark Mitchell writes, "with Slade as with so much else in the West, all that remains are conflicting accounts" (71-72), thereby associating Slade with the romance of the West that so much of *Roughing It* is dedicated to demystifying. All of this is, of course, well grounded in the text in the section in which Twain recounts meeting Slade at a stage station over breakfast. He writes, "[h]ere was romance, and I sitting face to fact with it!—looking upon it—touching it—hobnobbing with it, as it were! Here, right by my side, was the actual ogre who, in fights and brawls and various ways, *had taken the lives of twenty-six human beings*, or all men lied about him!" (Twain *RI* 96 his emphasis). To Twain's utter amazement, Slade is "friendly" and "gentle-spoken" (97) and thus fails to live up to the expectations that the former, as a young and relatively inexperienced man, had formed of the outlaw. Had Slade eaten Twain for breakfast, the latter's preconceptions would have been more adequately affirmed. Thus, Twain's depiction of Slade does, indeed, reflect a tension between romance and reality, a tension that exists in the narrator consciousness. And yet the significance of Slade's character cannot be reduced to this tension.

As I have already argued, Slade, as "an outlaw among outlaws," embodies a contradiction between lawfulness and unlawfulness. Some critics have noted a similar tension. Forrest G. Robinson refers to Slade's exploits as "a mingled record of savage brutality, ruthlessness, and a rough kind of heroism" (45). He writes, "[t]he Slade character, gentle and savage, heroic and degraded, fearless and craven, is a concentrated, paradoxical embodiment of moral confusion" (46). Here "moral confusion" is very close to the "subjective chaos" I have been attempting to describe. Evoking irony, rather than paradox, to explain this confusion, Brian McCammack writes, "enlisted to clean up the desperadoes and outlaws along a portion of the overland stage

route, Slade, ironically, becomes perhaps the most storied and feared outlaw of the West" (2). This reading misses the fact that Slade was an outlaw prior to his "enlisting" by the Overland company. Thus, paradox seems like a more appropriate way to describe the contradiction. While irony often involves a reversal in meaning, a paradox brings together two logically inconsistent terms, giving the impression of an insoluble absurdity. Twain notes something similar to this in connection with Slade when he writes that "[t]here is something about the desperado-nature that is wholly unaccountable—at least it looks unaccountable" (*RI* 103). Here Twain is specifically referring to the contradiction between the moral courage displayed by Slade when confronting violent outlaws and the apparent moral cowardice he evinced by breaking down in the moments before his execution by a mob of vigilantes. And yet this "moral confusion" noted by Twain is part of the subjective confusion or chaos that characterizes Slade and which is most pronounced in his opposing roles as outlaw and administrator of frontier justice. Twain alludes to this latter contradiction by referring to Slade as a "bloody, desperate, kindly-mannered, urbane gentleman, who never hesitated to warn his most ruffianly enemies that he would kill them whenever or wherever he came across them next" (104). Slade is both a "bloody" desperado and an "urbane gentleman" who will confront outlaws by going one step further than them in brutality, thereby reflecting his position as an "outlaw among outlaws."

Chapter eleven of *Roughing It* contains a lengthy excerpt from Thomas Josiah Dimsdale's *Vigilantes of Montana* which recounts the capture and execution of Slade by a group of Montana vigilantes. As Dimsdale notes early in the excerpt, "J.A. Slade was himself . . . a Vigilante" (168).[40] Dimsdale is here referring to Slade's work executing murderers and thieves for the Overland Company in Julesburg and Rocky Ridge which, as has been shown, reflected his

[40] I will be quoting directly from Dimsdale's book as opposed to Twain's.

position of being both inside and outside of the law. The Montana vigilantes occupy a similar contradictory position in their apprehension and execution of Slade. This mirroring of vigilantes who are outlaws and outlaws who are vigilantes leads to a state of subjective undifferentiation and the social chaos that it entails.

Much like Slade killing outlaws in Rocky Ridge for their "insolent swaggering," the Montana vigilantes execute Slade for something far less than murder, or even theft. Dimsdale writes that Slade "was never accused, or even suspected of either murder or robbery, in this Territory" and that "the latter crime was never laid to his charge, in any place" (Dimsdale 168). Thus, Slade was never accused of theft, and though he "had killed several men in other localities" (168), both as an agent of the Overland Company and as a desperado, he committed no such offence while in Montana. What led him to the gallows, as Dimsdale explains it, was his penchant for drink and his tendency to become a "fiend incarnate" when "maddened with liquor" (167). In other words, when drunk, Slade became a bully who terrorized the town. Dimsdale writes, "[i]t had become quite common, when Slade was on a spree, for the shop-keepers and citizens to close the stores and put out all the lights; being fearful of some outrage at his hands" (168). While Slade was often remorseful following these drunken sprees and offered recompense for the damage he had done, he committed one "outrage" too many for the townsfolk to forgive, and thus the vigilantes were forced to do their "duty" (173).

The final "outrage," as explained by Dimsdale, clearly illustrates the beginning of a mimetic process which culminates in Slade's execution and a state of subjective undifferentiation. The vigilante committee had attempted to establish a People's Court where offenders could be tried in a quasi-legal manner. Dimsdale writes, "the overt act which was the last round on the fatal ladder leading to the scaffold on which Slade perished, was the tearing in pieces and stamping

upon a writ of this court, followed by the arrest of the Judge, Alex. Davis by authority of a presented Derringer" (168). Basically, following another drunken spree, Slade was arrested by a sheriff of the People's Court who took him into custody and read him an arrest warrant. Slade proceeded to rip up the warrant in question and, with the help of some of his companions, turn the tables on the sheriff. Dimsdale writes, "[t]he Sheriff did not attempt his [Slade's] retention; but being at least as prudent as he was valiant, he succumbed, leaving Slade the master of the situation and the conqueror and ruler of the courts, law and law-makers" (169). This turn of events is pivotal. Twain, in fact, italicizes for emphasis the latter part of the final quote which states that the criminal, or outlaw, had, in a strange reversal, become "*the conqueror and ruler of the courts, law and law-makers*" (Twain *RI* 100). The reason that I describe this as a "strange reversal" and, in my opinion, the reason Twain highlights the passage, is that it cannot be read as a simple case of an outlaw criminally holding the law and courts hostage. While this is part of what is going on, it is not all. Dimsdale, though perhaps unconsciously, seems to be aware of this. For when he describes the subsequent episode with the judge, Alexander Davis, in one instance he writes that Slade "sought out Alexander Davis, the Judge of the Court, and drawing a cocked Derringer, he presented it at his head, and told him that he should hold him hostage for his own safety" (Dimsdale 101). In another instance, however, as previously quoted, he writes that Slade "arres[ed] . . . the Judge, Alex. Davis by authority of a presented Derringer" (99). The difference in language is the difference between a hostage taking (illegal) and an arrest (legal). Depending on which description is followed, Slade, as "the conqueror and ruler of the courts, law and law-makers," is either an outlaw holding the law hostage, or the representative of a greater law than the law of the court, which, in turn, becomes unlawful. This dichotomy reflects

the ambiguous and contradictory subject position held by Slade as both outlaw and vigilante which is reflected back onto the vigilante committee in their dealings with him.

There does, in fact, seem to be good historical reason to view the legal action of the vigilante committee as unlawful, at least in the case of Slade. Mark C. Dillon notes that "the oath of the Vigilante Committee signed by its members on Dec 23, 1863, defined the committee's purpose as 'arresting thievs [*sic*] & murderers & recovering stollen [*sic*] property'" (321). He goes on to comment, "[a]ny arrests and executions of persons other than thieves, murderers, or possessors of stolen property, undermined the de facto authority of the organization as a whole" (321). He then suggests that "[t]his appears to have occurred in the case of J.A. Slade" (321). So, in effect, what is occurring in the episodes described above is a mimetic process in which subject positions are becoming increasingly identical and, thus, compensatory. For instance, Slade, in arresting the judge, mimics the agents of the law, but the result is unlawful. This ambiguity is reflected back onto the agents of the law whose subsequent arrest of Slade appears to be the product of force rather than right, a perspective that retroactively applies to Slade's initial arrest. By the time of Slade's execution, it is impossible to tell the difference between the lawful and the unlawful and thus social chaos has obtained.

While this final statement would clearly be an exaggeration if we were merely dealing with a tiny percentage of the population, the fact is that Slade's execution mobilized a large number of people. Dimsdale writes that, once agreed upon Slade's arrest (but not his execution), the men of Virginia City sent word to the men of Nevada City so as to obtain "unanimity on the subject" (171). In response to the message, "[t]he miners [of Nevada City] turned out almost en masse, leaving their work and forming in solid column about six hundred strong, armed to the teeth" (171). This is essentially the description of a lynch mob. For, Dimsdale adds that the miners

made it clear that they "meant 'business,'" and that "they would not stand in the street to be shot down by Slade's friends; but . . . would take him and hang him" (171). The miners represent a movement of popular justice, which, elsewhere in his book, Dimsdale describes as "the acme of absurdity" (34). The absurdity in this case is the unjust nature of justice, or to view it from the other end, the justified injustice of Slade's apprehension and execution at the hands of a mob headed by the vigilante committee.

Clearly, in describing popular justice as the "acme of absurdity," Dimsdale is drawing a distinction between the former and the justice administered by the vigilante committee proper. For, in his preface, referring to the latter, Dimsdale insists on the "equity of their proceedings" (iii). And yet in the case of Slade, the two become identical. The mob carries out the "duty" of the vigilantes, and the vigilantes take on the "absurdity" of the mob. Dimsdale does attempt to expiate on behalf of the committee by showing that they "were most unwilling to proceed to extremities" (171). Here it is helpful to remember Girard's notion of the "escalation to extremes" which describes a dynamic of violent reciprocity that, once set in motion, will take its course, though it may be temporarily suspended. The committee was "loath to act" (171) but act they must. Dimsdale thus writes that, faced with the unanimous opinion of the body of miners that Slade should be hanged, "the Committee left it in their hands to deal with him" (171). Dimsdale is depicting the committee members as being something like Pontius Pilate, washing their hands of the unjust killing that is about to take place. And yet two paragraphs later, Dimsdale notes that "the executive officer of the Committee . . . arrested Slade, who was at once informed of his doom" (171). Dillon shows that this, in fact, was redundant. He writes, "[t]he regulations and bylaws of the Vigilance Committee specifically provide that '[t]he only punishment that shall be inflicted by this Committee is death'" (Dillon 316). Arresting Slade was informing him of his

doom. Thus, the mob, in carrying out the execution, acted as the arm of the vigilante committee. And yet because the committee was only sworn to arrest and condemn thieves and murders, neither of which title applied to Slade, they acted outside of the law as it was defined. Thus, all involved took on the contradictory character of Slade (vigilante/outlaw), and in another turn of events could have found themselves at the end of the rope.

This scenario clearly entails a state of social chaos, or disorder, though Dimsdale represents it as the triumph of "[r]eason and civilization" over "brute force" (176). Dimsdale writes that "[t]he death of Slade was the protest of society on behalf of social order and the rights of man" (177) and that, consequently, it "had a most wonderful effect upon society" (176). Here Dimsdale is much like Bird, attempting to obfuscate the disorder upon which "social order" is founded. What exactly he means by the latter must therefore be examined. Elsewhere in his account of Slade's capture and execution Dimsdale refers to "the accepted western law of retaliation" (175). This, then, is what the "social order" is based on. There, on the western frontier, where "[f]orms and ceremonies are at a discount" (16), meaning that cultural constraints are nil, violent reciprocity is the only way for a semblance of order to be maintained. This means that "brute force" is not conquered by "[r]eason and civilization" but by more "brute force." Dimsdale here admits as much:

> Under these circumstances [frontier conditions], it becomes an absolute necessity that good, law-loving, and order-sustaining men should unite for mutual protection, and for the salvation of the community. Being united, they must act in harmony; repress disorder; punish crime, and prevent outrage, or their organization would be a failure from the start, and society would collapse in the throes of anarchy. *None but extreme penalties inflicted*

> *with promptitude, are of any avail to quell the spirit of the desperadoes with whom they have to contend.* (13 my emphasis).

In another instance, he writes, "[f]inally, swift and terrible retribution is the only preventative of crime, while society is organizing in the far West" (12). The problem, of course, is that this "extreme" and "terrible retribution," this violent reciprocity against those who offend against "life and property" (5), leads to a social state in which criminals and representatives of the law become identical. Thus, order becomes disorder. I find it strange that Dimsdale misses this point. For in his account Slade is not the only one to embody the contradiction of being both inside and outside of the law. Henry Plummer, one of the leaders of the road agents, is simultaneously the sheriff of Bannack, an early settlement of Montana. Perhaps Dimsdale thinks that because these men were initially outlaws, and only later assumed legal positions, that the latter were mere fronts to further criminal activity. And yet there is nothing fake about Slade's legal action on behalf of the Overland Stage Company. Thus, rather than being viewed as duplicitous, he should be viewed as embodying the contradictory subject positions of outlaw and vigilante and thus representing a dynamic of social chaos. Through their reciprocal action, the members of the vigilante committee and the lynch mob of miners assume the same contradiction. Dimsdale, like Bird, wants to maintain a difference which would function as the basis of order, but the social body he describes is one of sameness and disorder. While this disorder may be "repress[ed]," to use Dimsdale's words, or "suspended," to use Girard's, this simply means that the resulting semblance of order, as in the case of Bird's Kentucky, "borders on chaos" as its essential ground.

In *Battling to the End* (2010), Girard poses the question, "[w]hat if our little everyday wars were in line with natural laws?" (61). The "everyday wars" between settlers and natives in *Nick of the Woods*, as well as those between outlaws and vigilantes in *Roughing It* and *The Vigilantes of Montana*, all characterized by a growing undifferentiation between antagonists locked in violent reciprocity, are "in line" with the "natural law" of increasing entropy which states that things move from difference to sameness, from order to chaos. Bird's novel was published in 1837, almost thirty years prior to Clausius's formulation of the second law, and some forty years prior to its statistical reinterpretation by Boltzmann. I do not mean to infer from this that Bird anticipated the second law in *Nick of the Woods* in the way that Katherine Hayles argues that Poe anticipated it in "The Fall of the House of Usher" (21). Clearly, as I have shown, Bird held onto a fundamental difference between the antagonists in his novel, though it is patently false. Nor do I wish to draw such a direct connection between the statistical formulation of the second law and the texts of Twain and Dimsdale, published in 1872 and 1866 respectively, both, more or less, on the cusp of Boltzmann's breakthrough. Rather, the conclusion I wish to draw is that in so far as literature and science belong to a shared "cultural field," they will converge upon similar themes, or problematics, which, through processes of "mediation" and "translation," will cross natural and social lines. The "cultural field" of the modern world, defined, in large part, by the endless upheaval engendered through constant technological and social innovation, raises, as much as any other, the problem of order and disorder, which consequently becomes a focus for discourses as diverse as social analysis, physical science and literature. Such a problem would have been especially salient to writers grappling with the question of America's "manifest destiny," that "great experiment of liberty," as John O'Sullivan defined it (qtd in *Why You Can't Teach United*

States History Without American Indians 95*)*, in which so much energy was invested for the sake of creating a new world order.

The idea behind America's "manifest destiny" was that of a fateful order. Kris Fresonke defines it as "a particularization of the theological 'argument for the world's design'" (5). Its genealogy would, therefore, go back to the Puritans who believed that God had created a New Jerusalem in North America for a godly race, pass through eighteenth-century deism and the natural theology of writers such as William Paley, and finally emerge in its Jacksonian splendor in the nineteenth century as the frontier pushed ever westward. Fresonke argues that the rhetoric of Jacksonian America, in fact, represented a secularization of "those [same] impulses to imagine God's hand creating and cultivating America" (8) that motivated the Puritan errand. The order that was imagined as destined to occur in nineteenth-century America was dependent both on the natural landscape and on a social difference between the natives of America and the settlers, a difference that extended to those operating outside and inside civilized law. The importance of this difference can, likewise, be traced back to the Puritans who defined themselves against the Indian Other and, thereby, derived the "idea of order" that sustained their moral and cultural errand. This "idea of order," based on human difference, extending into the nineteenth century, ensured that the American errand, whether viewed spiritually or secularly, was one of social progress.

And yet in both the seventeenth- and nineteenth-century versions of this myth of progress a paradox is apparent between, on the one hand, a belief in some form of predestined order, and on the other hand, the awareness that it may all go wrong. The Puritans, as we have seen, were all too aware of the possibility of becoming that which they defined themselves against, and, thus, failing to fulfill God's intended order. O'Sullivan, through juxtaposing the words "destiny" and

"experiment," seems also to raise the possibility that this new order, though destined in some vague way, may, in fact, fail to manifest. For an "experiment" necessarily has more than one possible outcome. It is based, not on certainty, but on hypothesis. In *Nick of the Woods* Bird too professes at one and the same time a belief in some vaguely intended order and a doubt as to the veracity of that belief when he refers to the founding of Kentucky "upon a basis as firm as if planned by the subtlest and wisest spirits of the age" (1: iv). The phrase "spirits of the age" raises some ambiguity in so far as it could refer to either supernatural or human agency. It thus evokes Fresonke's idea of a secularization of the Puritan idea of "God's hand creating and cultivating America." But despite this ambiguity, Bird clearly betrays his belief that a particular order was, in some way, destined to occur. And yet the inclusion of the conjunction "as if" seems, at the same time, to betray a lingering doubt about the veracity of this vision of order and design. He could have omitted it and written, instead, that Kentucky was founded upon a "basis . . . firm [because] planned by the subtlest and wisest spirit of the age." But this would not have truthfully expressed the tension between chaos and creation that, in so many ways, marked modernity, and necessitated that any dream of new-found order be haunted by a lingering doubt. Such a doubt is present, in some cases latently, in all the texts analyzed in this chapter, illustrating the inherent antagonism in this vision of American destiny, an antagonism that persisted from its earliest formulation into the nineteenth century, betraying a deep-seated fear that the modern experiment *par excellence* would run out of steam, terminating in chaos.

Conclusion: Energy and Humanity

In his *Lectures on Physics*, published in the 1960s, Nobel Prize winner Richard Feynman states, "it is important to realize that in physics today, we have no knowledge of what energy is" (4-2). At the beginning of this thesis energy was defined as the "capacity to do work." This tells us more about "what energy does" than "what energy is." The impossibility of defining "what energy is," as Feynman uses this phrase, stems from the fact that energy is an abstraction that subsumes a wide array of phenomena under several basic principles. This is the reason that, a century prior to Feynman's claim, P.G. Tait called energy one of the "great generalization[s]" of modern science. Along with matter, another one of science's "great generalization[s]," energy, though elusive, would come to define our experience of the physical world. The principles that organized the "generalization" for which "energy" was the concept were those of conversion, conservation, and dissipation as they pertain to sources of work. When these principles were taken from the workings of the heat engine and applied to the physical universe they produced the laws of thermodynamics, which state that 1) the energy of the universe is constant, and 2) the entropy of the universe tends towards a maximum ("entropy" being a measure of energetic dissipation, or waste). As Vaclav Smil notes, this understanding of energy was "systematized mostly during the nineteenth century" (3), through the work of thinkers such as Sadi Carnot, James Prescott Joule, William Thomson, Rudolph Clausius, James Clerk Maxwell and Ludwig Boltzmann, among others. But as my thesis has argued, their work of scientific systematization did not just exist in a vacuum.

Energy, as a quantifiable phenomenon, rather than being a self-revealing natural fact that, in the mid-nineteenth century, became the object of physical science, emerged out of a "cultural field" through which, as Katherine Hayles puts it, "certain questions or concepts bec[a]me highly

charged." These "questions or concepts" were partially the result of the technological innovation that accompanied growing industrialization, but also, more generally, of the possibilities and limitations that were ascribed, from various sides, to the project of modernity. When Thomson was trying to reconcile the discoveries of Carnot and Joule on the relationship between work and heat, he was not facing a question that was only of scientific and technological significance, but one bearing upon the very limits of what, with the advent of industrial modernity, became the measure of human progress: material productivity and the creation of wealth. Joule's belief in a perfect equivalence between work and heat suggested the possibility of an inexhaustible reserve of energy that could be used to power an ideal engine of perpetual progress, thus justifying the blind optimism of modern humanity. But Carnot's insight into the loss that accompanies all energetic transformation implied that, in fact, there could be no such inexhaustible reserve, no such engine of progress, and that the optimism of modern humanity was sorely misplaced. For Thomson, a Calvinist with a firm belief in the fallen nature of humanity, such a limitation, in the form of a universal physical principle, served as a rebuke to human hubris and a reminder of the dependency of humanity on God's mercy. As he states, along with his co-author P.G Tait, in "Energy," "dark indeed would be the prospects of the human race if unillumined by that light which reveals 'new heavens and a new earth.'" Because the concept of energy brought together such seemingly disparate phenomena as the steam engine and the market economy, dissipative heat and dissipated humanity, all as part of the same "cultural field" in which work was at once a physical measurement, a market force and a moral imperative, it was as much the business of writers as it was of scientists and engineers.

My thesis has focused on the contribution of a body of American literature to the "cultural field" out of which thermodynamic energy emerged in the nineteenth century by looking at the

work of a group of writers that engaged with various problems that energy, as a conservative and/or dissipative agglomeration of forces, both posed and resolved. These problems ranged considerably in focus, from questions about the energetic age of the world and the implications of such to the American project of creating a "new world," to the relationship between work and waste as it pertained to a growing population of mechanical laborers sacrificed to modernity's materialist ethos, to the probability that a new and sustainable order would emerge once old socio-political forms and identities had been discarded and a frontier of possibilities opened for western humanity. My reasons for looking at these problems, as they were raised by nineteenth-century American writers, were to identify previously undetected relationships between literature and science in the nineteenth century, and to identify energy as a concern of the humanities at the point of its conceptual origin in the age of classical thermodynamics. By accomplishing these goals, I also wished to make a case for the continued relevance of literature, and the humanities more broadly speaking, to the kind of cultural understanding that might facilitate real change by exposing the values that help determine human thought and action.

As mentioned in my introduction, there has been a dearth of scholarship on the relationship between nineteenth-century American literature and thermodynamics. This could easily give one the impression that American writers were somehow untouched by the social and technological forces that moved their Victorian counterparts to speculate on phenomena that would eventually be gathered together by the concept of energy and its laws. This is obviously not the case, as my thesis has shown. My thesis has also shown that there is more to the relationship between energy and the humanities than the emerging field of Energy Humanities generally describes. Scholars in this field have begun to redefine modernity by identifying it with the material revolution that was unleashed when fossil fuels became a global energy source. Referring to America, alone,

Bob Johnson writes, "the nation's modernity, including not only its hard material infrastructure but also its patterns of being, thinking, and feeling in the world, can be traced back to this flood of prehistoric carbon" (4). Expressing a similar belief about the connection between the modern world and fossil fuels, Stephanie LeMenager refers to "the lucky strike that ushers in modernity" (5). Both of these scholars identify modernity's possibility with the consumption of fossilized energy sources. They identify modernity's limitation with the same. Thus, Johnson explains how our "dependencies on prehistoric carbons" have brought us to the "verge of an existential threat" (163-164). And LeMenager warns of the "unprecedented potential for destruction" (4) that accompanies present energy practices. Starting from these premises, that modernity's possibility and limitation are bound up with the consumption of fossilized energy sources, these scholars look at humanistic texts in order to identify the "largely unexamined cultural values" with which our modern "[e]nergy systems are shot through" (4).

My thesis has undertaken a very similar attempt to identify "cultural values" within modern "energy systems," but the way in which it has treated energy and the possibilities and limitations that it presents for human action has been markedly different. In the work of energy humanists like Johnson and LeMenager, energy is a material given that "ushers in modernity," by which is presumably meant something akin to the combined forces of liberalism, global capitalism and consumerism. Without denying the obvious facts that energy sources are material, and that their consumption has enabled the modern world as we have come to know it, my thesis has attempted to look at the creation of energy as a concept that, in the mid-nineteenth century, subsumed a wide array of phenomena under several basic principles or laws, and, furthermore, to propose that this conceptualization was a response to modern forces such as technological advancement, industrialization and socio-historical renewal. I have thus reversed the terms: rather than positing

modernity as the product of energy, I have posited energy as the product of modernity, depicting it as one of the "great generalization[s]" modern humanity engendered to better understand its changing world. I have also relocated the limitation inscribed in modern "energy systems": rather than identifying it with the adverse environmental effects of human consumption, I have shown how energy, as it was conceived in the nineteenth century, contained its own limitation in its tendency to dissipate as heat. That being said, the practical connection between the two should not be missed. The heat produced through energetic combustion that nineteenth-century thinkers such as William Thomson described as dissipating into space, leading the universe to the state of thermal equilibrium known as 'heat death," is presently being trapped in the earth's atmosphere giving rise to the phenomena of global warming. To play on words slightly, it is as though we are facing a far more literal "heat death," in so far as its previous version would have really entailed universal cooling. This nineteenth-century limitation to energetic conversion was, at the time, predicated on ignorance of the extent of the sun's energetic stores, but the discovery of nuclear energy in the early twentieth century did not change the way we understand energetic behaviour; it simply increased the amount left to burn.

The alternative perspective on energy that I am describing is in no way intended to replace the perspective that I have identified as that dominating the Energy Humanities. Admittedly, it could be argued that a focus on the human consumption of energy and its deleterious effects is far more urgent and relevant to our current historical situation. The way that it presently looks, human use of fossil fuels will make the earth uninhabitable long before the sun burns itself out. Nonetheless, in the interests of fully understanding the relationship between energy, modernity and humanity, energy's genesis in the age of classical thermodynamics should be studied. Thus, while I do not wish to dispute the basic premises that both modernity's possibility and limitation are bound up

with its material energy dependencies, I do wish to add to the discussion a consideration of the possibilities and limitations that were inscribed in energy itself at the point of its conceptual origin. For thermodynamic energy, governed by the principles of conversion, conservation and dissipation, both facilitated and limited modernity's possibilities long before the deleterious effects of carbon emissions were known. It thus reflected a paradox at the heart of modernity, revealing it to be both an age of exponential growth and of inherent finitude. As my thesis has argued, this paradox, formulated in the laws of thermodynamics, should not be viewed solely as the product of scientific investigation, but as inhering in the "cultural field" from which those laws emerged. And, thus, being as much the product of humanistic as scientific thought, it should be a concern for the Energy Humanities.

This dual perspective on energy, as both a physical resource and a generalization about the behaviour of diverse natural and social forces, leads to some interesting questions for future research projects. For instance, what, if any, is the relationship between modernity's limited horizon conceived in terms of the environmental impact of energetic consumption and in terms of energy's inherently dissipative tendencies? And does the way in which nineteenth-century thinkers approached the problem of energetic finitude offer any clues as to how we can better deal with the limitations imposed on our ability to consume energy? William Thomson viewed energetic dissipation as connected to the fallen state of humanity. Melville and Hawthorne, in the literature explored in this thesis, took a similar view of things. Without reverting to Christian belief, could this view of the symbiotic relationship between the physical and moral worlds help us better understand our predicament? Can we conceive of ourselves as somehow "fallen" in our destructive energy dependencies, from which every attempt to extricate ourselves only digs us deeper in? If so, to whom or what can we appeal for redemption? And finally, what role does

literature play in helping to answer these questions, or in formulating others that presently need asking?

In an age in which, as Martha Nussbaum notes, "[t]he humanities and the arts are being cut away, in both primary/secondary and college/university education, in virtually every nation in the world" (2), literature is becoming increasingly irrelevant to large swaths of the population while a focus on the STEM fields, headed by science, is growing exponentially. This trend is unfortunate for a variety of reasons. One reason, which has been a major part of the argument of this thesis, is that literature does not exist in a sphere apart from science, but shares with it a "cultural field" out of which emerge the problematics that occupy each field according to its unique capacity. This means that literature has an important role to play in any process of cultural transformation, and that technoscience, divorced from the humanist elements that pervade its "cultural field," is insufficient to such a task. For literature gives form to the concerns and values that characterize the spirit of a historical epoch, which necessarily informs scientific investigation. Literature also has the unique ability to question and transform human values, and, through imaginative leaps, to both predict the outcomes of present cultural practices and envision new cultural possibilities. Of course, it also has the ability to fail to do so. When Amitav Ghosh refers to the "imaginative and cultural failure that lies at the heart of the climate crisis" (8), he is referring, in part, to the failure of contemporary writers both to realistically represent the threat posed by climate change and to challenge the cultural values that are creating this threat. But the very fact that he sees this as a failure implies that literature, at its best, plays an important role in both diagnosing the ills and suggesting remedies for cultural crises. Because "the climate crisis is also a crisis of culture, and thus of the imagination" (9), any lasting solution must include an imaginative dimension.

Of all the texts examined in this thesis, perhaps *The Confidence-Man* best exemplifies the ability of literature to truly lay bare the consequences of cultural energy practices. In this case, a cultural confidence in solar energy leads western humanity to blindly pursue a form of progress that cannot be sustained. If no solution is proffered, it is because no solution existed as long as the calculations of physicists were correct. The closest thing to a solution that Melville offers is an ability to see through the false confidence sustaining the cultural blindness of so many of his contemporaries as they ignorantly careen towards the abyss. We may or may not be in a better situation than they. That is, it may or may not be too late to solve our current energy crisis. But one thing is certain: like those aboard the *Fidele,* the greatest temptation that we face is the temptation to deny that a crisis exists. We need writers like Melville to remind us, in the starkest images, that it does.

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