Coleridge, Shelley, Davy, and Science’s Millennium

"True knowledge leads to love."
—Percy Shelley

One is struck, whenever one rereads the notes to Shelley’s Queen Mab, by the sheer brazenness of their confidence, of their palpable expectation of a new world just here, a world conjured up ideally by new knowledge in physics, astronomy, economics, as well as philosophy, ethics, theology. It is hard not to think of Coleridge’s excitement, in his own youth, at the world-remaking newness of the chemistry of Davy and Priestley, the botany of Darwin. Indeed, the model for Queen Mab’s visionary science as well as for Coleridge’s millennial optimism in his 1794 Religious Musings was Erasmus Darwin’s enormously popular poem, The Botanic Garden, whose scientific footnotes ran to 100,000 words. Chemist Humphry Davy fancied himself a poet; Coleridge called him “the Man who born first a poet first converted Poetry into Science.” Of course, this was an era when, in 1802, the twenty-seven-year-old Schelling could lecture his university students that, “at the present time, everything in science and art seems to be tending toward unity, when matters that long seemed remote from each other are now recognized to be quite close, and a new more universal vision, encompassing almost all disciplines, is taking shape. An epoch such as our own is surely bound to give birth to a new world.” It was in January that same year that Coleridge sat listening to Humphry Davy’s chemistry lectures and, amid his copious notes on “oxygenated muriatic gas,” wrote “If all aristocrats here, how easily Davy might poison them all.”

Yet even as Coleridge wrote this, he was becoming far more politically conservative; ultimately, for Coleridge, the expansion of knowledge is an attenuation of the human and a rarefaction towards the absolute. Chemistry, he wrote Davy, “united the opposite advantages of immaterializing mind without destroying the definiteness of Ideas —nay even while it gave clearness to them.” In his early days Coleridge, like Shelley, could call himself “a compleat Necessitarian” and saw in the materialism of Godwin, Hartley, and Priestley a unifying
revolution of dawning moral progress in which matter and mind rose transcendentally in a mutually evolving political, scientific, and religious order. "Millennium," he wrote in his notebook in 1796, "an History of, as brought about by progression in natural philosophy." Thus Religious Musings can speak of "the one omnipresent Mind / Omnific" (ll. 105-6) while foreseeing the millennium's arrival in the heroic struggles of "Science" (225) and the discoveries of the materialist Hartley, "he first who marked the ideal tribes / Up the fine fibres through the sentient brain" (369-70). But Coleridge came to see scientific knowledge, in the fashion of Naturphilosophie, as knowledge that implied the reconciliation of material polarities in the ideal absolute — though as a Kantian he saw that absolute as ultimately transcendent and obscure. It is well known that Coleridge rejected his early Hartleyan materialism; less well understood are the ways in which his rejection of Godwinism in 1801-4 led him to be increasingly suspicious of the French materialist tradition that identified science with social progress, even as he was drawn to the new German view of science as a system of universal idealism. At the same time, for all his rejection of Godwinian materialism, Shelley never abandoned the hope that an expansion of physical knowledge — combined with a refinement of moral sensibility — was a precondition of progressive civilization.

The example of Shelley suggests that Coleridge's turn from science as a millennial force was not only a necessary product of his Kantian conversion in 1801-4. I would like to explore the complex reasons (historical and philosophical) for the radical divergence between Coleridge and Shelley — who began with such parallel hopes — on the social utility of scientific knowledge. In Coleridge's case, certainly, his suspicions were tied to his sense that authority could not derive from a knowledge of space and time, those human, transcendental categories. Shelley's is a world of ideal, but essentially immanent, forces evolving with an inner necessity, an organic purposiveness Coleridge associated with pantheism. Moreover, Shelley's social hopes were linked to such immanent forces, since these unfold in a real time and within a human history that progressively comprehends and harnesses them. If space and time were merely human for Coleridge, they were ineluctably human for Shelley; and the authority of our knowledge is the revelation that the universe will appear as civilized to us as we (within the given forms) make ourselves to be. But do these differences in metaphysical perspective fully account for their divergence?
There has been a general assumption among literary critics that a turn to idealism marks a rejection of science, or scientific method, or even empirical knowledge as such. It remains puzzling, however, that a Shelley might retain his enthusiasm for science, even while, in the 
Defence of Poetry, clearly subordinating it to the guidance of imagination and moral leadership. Though Shelley is no materialist or empiricist, it is clear from Act 4 of Prometheus Unbound that Shelley’s millennial vision does include an expansion of the powers of natural science. Of course, part of the solution to such puzzles is that the Two Cultures were not so clearly distinct in the early nineteenth century, though in Coleridge and Shelley we do begin to see marks of tension. The “sciences,” however, did not at this time denote exactly our modern disciplines, and the “arts” had not yet quite attained their dubious Wildean distinction of uselessness: history and theology, as systematic studies, were “sciences,” and engineering might be categorized as a “useful art.”

Yet even while a cultural historian may acknowledge this diachronic problem of definitions, a more subtle problem remains in the synchronic interplay among ideological commitments, utopian social anticipations, the material practice of the disciplines of knowledge, social change and perceived social change, and the theological or metaphysical position (materialism/idealism, or immanence/transcendence) of an individual author. Such positions are rarely autonomous, nor do they command other (political, aesthetic) views on any single subject in any one determinable manner. I am not suggesting the contrary—a vulgar material determinism. Let me state, though, what I believe was historically true about discussions about the meaning and role of the natural sciences in the period 1780-1830. In this era, a debate over empirical knowledge was rarely just a metaphysical or epistemological debate about whether its products were true or whether lawfulness derived from immanent or transcendent forces. It was also a debate about the social ends of such knowledge and from where the real power to guide and change an emerging technical-industrial era would come.

I am not, however, so socially determinist as to suggest that we can explore an author’s views about natural science solely from the perspective of his or her class’s interests in science’s utility. The context for such a debate over science is really larger than that (though, as we will see, class is often a salient motive). Sometimes philosophical ideas (like organicism, idealism) themselves produce scientific practices, that in turn feed social practices that may generate ideological
practices such as utopian or millennial fantasy. Such ideological practice may in its turn support metaphysical assumptions. The question of philosophical autonomy is often less interesting than the constant interplay (or interdetermination) of historical forces and imaginative creation. I can only suggest here some ways of understanding why natural scientific knowledge was valued differently by Coleridge and Shelley. Certainly the reasons are not purely philosophical. Neither, however, are they exhausted in the issue of the political differences between Tory and progressive Whig. These are important factors, but it is also the case that history itself had moved on from the heady days of 1790s Godwinism, so that the millennial hopes of a post-Napoleonic Europe would subtend “the progress of knowledge” at a different angle from those of a Europe still wondering if its future had been envisioned by a Volney, Diderot, or Danton. Moreover, I will argue, scientific practice itself had developed in ways that both embodied and confirmed large philosophical and social ideas. To understand attitudes towards natural science and its social function in this period, then, one must look, indeed, at metaphysical assumptions; but one must also explore the development of historical and social forces and even the development of scientific discovery and practice.

For Coleridge, science’s goal is to arrive at universal law, and it must remain independent of social enthusiasms: in a late work, The Theory of Life, he looks back on the 1790s as a time when the new materialism became an “almost epidemic enthusiasm which, scarcely less than its political revolutions, characterise the spirit of the age.” This enthusiasm produced bad science, in fact, by kindling expectations too much bound up with political hopes, a “higher excitement which an unsettled and revolutionary state is sure to inspire. He who supposes that science possesses an immunity from such influences knows little of human nature.”

But in 1802, Coleridge had listened with some enthusiasm of his own to Humphry Davy’s Inaugural Lecture at the Royal Institution in London, where he promised not an empty utopianism based on a priori reasoning but the steady progress of empirical knowledge toward real and impending social transformation: “We do not look to distant ages, or amuse ourselves with brilliant, though delusive dreams, concerning the infinite improveability of man, the annihilation of labour, disease, and even death. But we reason by analogy
from simple facts. We consider only a state of human progression arising out of its present condition. We look for a time that we may reasonably expect, for a bright day of which we already behold the dawn." Coleridge's early excitement over Davy grew within the radical Bristol circle of Dr. Thomas Beddoes, who introduced them in 1799. Four years earlier it was Beddoes who introduced Coleridge to the works of Erasmus Darwin, Joseph Priestley, and most likely to the Germans—Kant, Steffans, and the physiologist Blumenbach. The radical Unitarian gentlemen of Bristol were much taken with the young Pantisocrat, and with money and access supported the researches of both Coleridge and Davy (they were both published by the Bristol republican Joseph Cottle, who in 1800 published the second edition of Lyric Ballads from proofs corrected by Davy). Theirs was a tradition of progressive materialism, and their hope was that the ideology of a static, ordered cosmic and social hierarchy was being replaced by a vision of nature where human knowledge could uncover laws of change that could be mastered to produce broader material happiness and social equality. "[Alchemical] views of things have passed away, and a new science has gradually arisen," said Davy in his 1802 lecture.

The composition of the atmosphere, and the properties of gases, have been ascertained; the phenomena of electricity have been developed, the lightnings have been taken from the clouds. . . . The guardians of civilization and refinement, the most powerful and respected part of society, are daily growing more attentive to the realities of life . . . in considering and hoping that the human species is capable of becoming more enlightened and more happy, we can only expect that the different parts of the great whole of society should be intimately united together by means of knowledge and the useful arts. (19; 21-22)

What excited young Coleridge (and probably Shelley) about Davy's chemistry was its applicability to social institutions not merely as an analogy but as proof of unifying immanent lawfulness that could guide moral and even political understanding. In this hope, so congruent with Godwin's rationalist view of social causality, Coleridge and Shelley were, in their early years, united. We might recall that the notes to Queen Mab attempt to navigate a difficult terrain (and rhetorically it is less navigation than full-throttle ride) between universal natural lawfulness and an almost Leibnizian immanent idealism: "Every grain / is sentient both in unity and in part, / And the minutest atom
comprehends / A world of loves and hatreds” (4.143-46). Yet while
the verse may proclaim that “Throughout this varied and eternal
world / Soul is the only element” (4.141-42), the notes contextualize
this soul within a universe of material causes, but causes so infinitely
diffused as really to constitute a physical field: “He who asserts the
doctrine of Necessity means that, contemplating the events which
compose the moral and material universe, he beholds only an im-
mense and uninterrupted chain of causes and effects, no one of which
could occupy any other place than it does occupy, or act in any other
place than it does act.” Shelley’s “Soul,” his notes clarify, is not a
freely acting will but rather a decidedly non-human “power” (“not an
organic being”). On this question of immanent powers Coleridge
could never agree, and this was one reason for his increasing diver-
gence from Godwin, and his rejection of the belief that empirical
knowledge could disclose the true (transcendent and ideal) lawfulness
of the cosmos.

It remains true that, despite their different metaphysics, both Coler-
didge and Shelley interpreted universal “forces” as continuous in some
way with the human, as “universal” across the organic, inorganic, and
the ideal. This would not seem to us consistent with modern scientific
practice or theory. Even so, the remark of Hans Eichner that “Romant-
ticism is, perhaps predominantly, a desperate rearguard action
against the spirit and the implications of modern science” is only
partly true. Eichner indicts Coleridge and other enthusiasts of idealist
Naturphilosophie for their passion for such contemporary findings as
animal magnetism or Mesmerism, appropriating this discourse “with
almost indecent haste, in the conviction that these phenomena dem-
onstrated the superiority of their own speculative organicism over
Newtonian physics.” But as historian of science Trevor Levere con-
cludes, scientists like Priestley, Darwin, Oersted, and even Davy kept
themselves informed of and to a degree accepted the notion of a dy-
namic, unifying principle explored by both the new chemistry and
German speculations, so that “scientists did not fit into a clear dichot-
omy of respectable scientists on one hand and Romantic ones on the
other.” Walter Wetzels reminds us that “Romantic natural science
has a strong empirical basis, and most of its speculative ventures are
extrapolations from experimental data. . . . The movement was not
anti-science; it eagerly embraced the new discoveries in the fields of
electricity and chemistry.” And in his broad evaluation of the effects
of Schelling’s Naturphilosophie on scientific method, Barry Gower
distinguishes between empirically based theories and the a priori
metaphysical assumptions that ground them, which he sees as "methodological, as regulative, as heuristic. They are justified in terms of the understanding they provide, and of the coherence of the theories they make possible." Though the theories they suggest may be wrong, the assumptions are not themselves the theories. In Schelling’s case, "it is clear that although speculative physics was designed to provide a context for experimental scientific enquiries it was never intended, by Schelling at least, to provide a substitute for those enquiries."\(^{15}\)

For his part, Coleridge did in fact endorse empirical method—as his 1818 "Essay on Method" supporting Bacon makes clear.\(^{16}\) Yet the narrowly mechanistic perspective of Newtonian physics (which Eichner defends with indecently hasty positivism) was already under assault from scientists themselves, particularly in the rapidly emerging disciplines of chemistry, electricity, and magnetism. For Coleridge, the goal of empiricism was not merely the expansion of material or useful knowledge, which Davy believes will alone lead to social reform. Young Coleridge—more than Davy, Godwin, or his Unitarian supporters—had hoped that modern science (especially chemistry) would disclose an ideal law governing, or guiding the reconciliation of opposing forces in nature and in social institutions.

Shelley, on the other hand, would later become skeptical that ultimate causes in the universe could be characterized as ideal or material; he retained an idealism only in the sense that he saw the human mind, its conceptions and its emotions, as the domain of the only truths about the world that can be known. But his skepticism does not, I will argue, mean that he rejected the expansion of knowledge to explore the lawfulness we do encounter in our given world. Shelley (more than Coleridge) would continue throughout his life to value natural science both for its power to explain the real forces (whether thought of as ideal or material) that act upon us and to suggest ways to alter their courses and outcomes.

My point here is to argue that Eichner and other critics of romanticism’s "anti-empirical" bias are wrong; these common universalist hopes were clearly not part of a rearguard attempt to value organicism and particularity, to "deny the foundations of science itself." Few scientists or poets (both of whom may have valued organicism) in the period 1780-1820 opposed themselves completely to a science which had "developed methods of inquiry vastly superior to any previously known and had used these methods to show that underlying the infinite variety of nature there is a kind of uniformity that can be described in terms of, and perhaps even explained by, univer-
sal laws." In fact, it was romantic idealism that often sought these laws and this uniformity; so far as "Romanticism" is represented by Coleridge and Shelley, both these poets would continue to affirm and value such lawfulness both for speculative and moral-political ends. Their idealist speculations were not mere "Romantic irrationalism" but were actually based on realistic expectations of what contemporary empirical research was disclosing about the unity of forces and the nature of the elements—research that, Davy taught them, would be of immense practical and social utility. Both Shelley and Coleridge initially valued the new scientific discoveries not simply for their empirical elegance but—far their potential, as Davy put it, to discover cause-effect patterns between human perceptions or ideas and the physical world, so that "by discovering them we should be informed of the laws of our existence, and probably enabled in a great measure to destroy our pains and to increase our pleasures."18

This goal seemed to be reachable in the early decades of the nineteenth century. Science was not at all debilitated by organicism or idealist Naturphilosophie, it was rather significantly advanced by it. Eichner's conclusion that with the exception of Oersted, on the whole, "Schelling's philosophy of nature produced what can only be described as a farrago of nonsense" is historically not true.19 For one thing, Oersted is far from an insignificant case, nor was he particularly unique. Idealism was part of electrochemistry throughout the century, in direct or indirect ways. No science, in any case, proceeds without assumptions, intuitions, analogies. "Empirical" tests do not concoct themselves: one must decide where and why one is looking. One must intuit from some hypothesis about what is worth attention, what categories of observable things exist, even in the absence of empirical facts. The rationale for tests in the early nineteenth century was often suggested by a leap based on idealist assumptions about unities in nature. And even experimentation may not decide a case: in this period instruments were often too crude to do more than suggest lines for more refined speculation and experiment. Very often in science competing theories may not be decidable through experimental observations alone; some experiments are empirically equivalent across competing theories, and the choice of a "wrong" or outmoded explanation should not be ridiculed in hindsight.20 And sometimes, as for example in the cases of Galvani's discovery of current electricity or Hertz's discovery of radio waves leaping across his spark apparatus, laws are uncovered by accident, and blind luck. But even so, pursuing such accidents rarely takes place without some hypothesis
generated by some *a priori* assumptions about the universe; and in this period that assumption was increasingly a universe of broad and unified fields of mysterious, perhaps ideal, forces, immanent within apparently inert matter.

Davy himself sought such a “Unified Field Theory,” in speculation remarkable for its brilliant intuitive anticipation of modern physical fields, speculation that in fact prompted the electromagnetic discoveries of his pupil, Michael Faraday. For what Davy’s researches promised—and what caught Coleridge’s attention—was the replacement of a physics of *gravitation* with a physics of electrical *polarities* which would evolve into a physics of *fields*.

It might be instructive to digress briefly to explore the direction taken by empirical research early in the century, for we will see that universalist theories about forces and idealist hopes to unify all immanent forces, physical and social, into one grand system were not chimerical or whimsical. They were utopian anticipations based on the real scientific revolutions of the era.

The discovery of electric current flow by the Bolognese anatomist Luigi Galvani (1737-1798) began a search for the meaning of the strange and apparently universal energies that seemed to infuse the universe. It was Galvani who had discovered that a metal scalpel touched to a frog’s leg in the vicinity of a static electricity generator produced involuntary twitching. Galvani and his assistant traveled all over Europe in the 1780s producing twitches in the carcasses of various farm animals, even in an executed murderer—an experiment repeated in Glasgow, in 1818, by Dr. Andrew Ure on the corpse of the murderer Clydsdale, to sensational publicity (see Fig. 1). Note that the use of corpses lent an air of the supernatural and a sense of contact with unseen but vast powers connecting the living with the inanimate.

Though he was a clever experimentalist and showman, Galvani argued for a weak theoretical interpretation of what he had observed. He failed, in fact, to accept one of the most important conclusions in the history of science. He had noticed that the frog danced even without any external current when its feet touched a silver box and Galvani touched the box with a metal rod. He could only postulate that some residual “animal magnetism” in muscles produced the effect. It was left to Alessandro Volta (1745-1827) to stumble upon the remarkable explanation that current would flow between two unlike metals, regardless of the presence of frogs or any organic matter at all. This “stunning discovery,” says historian and scientist Gerrit Verschuur,
"would transform the nature of the civilized world," allowing the construction of Voltaic cells ("piles" or batteries) and permit the electrical experimentation of Davy, Ampère, and Oersted. But their experiments, in turn, were guided by idealist and utopian anticipations of unified forces.

The great Hans Christian Oersted (1777-1851) was also responsible for a discovery that changed both thinking about the nature of the universe and the material development of civilization. His conviction that electricity and magnetism were twin aspects of a single "original
power" led to laws of electromagnetism that revolutionized science and industry. Oersted was led to this conviction of a connection because "thanks to the writings of Kant he really believed that such a connection must exist," despite the contemporary belief, based on the authority of Coulomb himself, "that there was no connection at all." In the winter of 1820, in a famous lecture, he concluded before his audience that a moving current would produce heat, light, and magnetism, and offered to perform the experiment before them, then and there. And so, as electricity flowed in a wire beneath a compass, the slight deflection of the needle made history and confirmed in experiment what had long been anticipated by idealist naturalists (including Davy) who had expected a unity of the "powers" of nature (see Fig. 2).

It remained only for another Kantian, André-Marie Ampère (1778-1836) to confirm in the early 1820s that magnetic forces circled around current-carrying wires and that helixes of such wires could actually create magnets. He had proved that "magnetism was the force produced by electricity in motion," and had already theorized that the earth itself generated its magnetism by its motion. At least from the time of Davy's voltaic experiments in 1800, then, it was reasonable to seek experimentally for higher natural unities among disparate "powers," so that Davy could even trumpet to Coleridge in November 1800 that he had made "some important galvanic discoveries which seem to lead to the door of the temple of the mysterious god of Life." Actually, the step from Ampère's forces to the uniformity of fields was initially prepared for by Davy himself, who early on had already "demonstrated a relation between electricity and chemical affinity, and had shown connections between static and galvanic electricity, chemical affinity, heats of reaction, and the electrochemical series... Chemistry could be organized and prosecuted through the recognition that chemical process was governed by the interplay of positive and negative [electrical] powers." Moreover, though it is not widely known, Davy had, by 1802, contributed to a paper by Thomas Wedgwood on the use of silver nitrate to transfer images to leather and glass, and he had been experimenting for several years with photochemistry. In 1799, he had published "An essay on heat, light, and the combinations of light," and speculated that "The general analogy of nature, the wonderful simplicity of causes, and the complexity of effects, would alone tend to prove that [light] is subservient to other purposes than those of vision and vegetation." Davy, who had read about Kant as early as 1796, began to suspect that light itself was fun-
damental to chemistry, magnetism, electricity, and even might be a transcendent origin of human intellect as well. I suspect that these early interests in imaging were what led Davy to suggest to Faraday that patterns of magnetism itself might be drawn by iron filings on paper through which a current-carrying wire was passed. Davy then produced the first visible image, a kind of “magnetograph” of a physical field (see Fig. 3). In the early 1820s Faraday (also “imbued with a Kantian metaphysical belief in the unity of the forces of nature”) would begin the stunning series of drawings of fields that would revolutionize physics and alter definitively the older Newtonian meta-
phors of discrete particles acting on each other across a distant void. But in fact, the groundwork had already been laid in England by Davy’s experiments in electrochemistry, experiments inspired not only by empirical curiosity but also by a climate of idealist and utopian anticipation.

In Coleridge’s Bristol circle, the Newtonian cosmos of discrete particles set in motion along constant paths had become an emblem for political as well as imaginative inertia. William Blake was only one of many British radicals angered by the reactionary power implicit in the Newtonian metaphor of unchanging paths of motion. The new elec-
trochemistry promised a shift in metaphor not only away from an older paradigm for empirical research but more broadly away from an older justification for the principle of constancy and hierarchy in human affairs. "Chemical pronouncements about the nature of matter and spirit," historian Christopher Lawrence points out, "when made by such men as the political radical, theologian and chemist Joseph Priestley were recognized by contemporaries as utterances that questioned the structure of society itself." 33

This new vision offered imagery of opposing immanent forces clashing (sometimes explosively) and recombining to produce wholly new substances; such combinations might be analyzed and controlled by human knowledge to produce useful substances and expand the reach of civilization. Most importantly, this dynamic chemistry did not present itself as mere speculation. For such speculation alone would never have appealed to the hard-headed burghers of the Bristol elite, who would not ground their republicanism in what could be attacked as self-serving theorizing. No, it seemed that a universe of dynamic transformation reconciling polar conflict was endorsed by empirical research into the way things really are. This kind of excitement, after all, is what generated the financial support for the researches of Priestley, Beddoes, and Davy. Indeed, the newly popular word, "energy," came to signify a natural imperative to creative action, a mental power that resists oppressive inertia, as well as the economic power of human industriousness. Such a vocabulary served both the revolutionary anticipations of this emerging class as well as its material interest in new modes of technical and economic exploitation. 33 In this way, a new scientific vision, an extended political metaphor, and even millennial expectations were fed by and in their turn helped to advance sober empirical research; and any positivist attempt to disentangle these in the name of a consistent history of scientific progress will prove futile.

Ultimately Coleridge came to believe that Davy had abandoned his early quest for transcendent idealist unities. Davy's theories, he had written in 1807, were "more intellectual, more enobling and empowering human nature, than Newtons!" "Davy supposes," he continued, "that there is only one power in the world of the senses; which in particles acts as chemical attractions, in specific masses as electricity, & on matter in general, as planetary Gravitation. . . . [W]hen this has been proved, it will then only remain to resolve this into some Law of vital Intellect—and all human Knowledge will be Science and Metaphysics the only Science." 34 These last clauses typify the Coleridgean
view, and it is this transcendent idealist resolution of all forces into "some Law of vital Intellect" that sets him apart from Davy and marks the origin of his later thinking about the real social utility of the sciences. Davy's knighthood was also a deep annoyance for Coleridge, partly because of his sense of exclusion, partly because of Davy's own growing pretentiousness. But there was also Coleridge's belief that Davy had demeaned himself with his technological discoveries and, in becoming a materialist, had enslaved himself to utilitarian political forces. Coleridge is explicit about this: in 1808 he had written in a marginal note to his copy of Jacob Boehme that "Humphry Davy in his Laboratory is probably doing more for the Science of Mind, than the Metaphysicians have done from Aristotle to Hartley, inclusive." But some time after 1812 he added, "Alas! Since I wrote the preceding note, H. Davy is become Sir Humphrey Davy & an Atomist!" 35

As it happens, Coleridge was wrong about Davy. Like Coleridge, he became a Tory, and really was never a materialist but remained a conservative vitalist: "vitalism of the sort espoused by Davy and Coleridge," writes Lawrence, "was used to underwrite the existing social order." Perhaps what made Davy's technological work awkward for Coleridge (and for the same reasons appealing to Shelley) was exactly that it did represent a social order, a newly emergent one of industrial capitalism. For Lawrence, "Davy's Romanticism, or certainly that of his last works, was an endorsement of industrialization, of the unequal division of property." Davy's safety lamp, for example, "could well be used to symbolize the new web of social relations which were generated during the Industrial Revolution. Far from saving lives, the lamp was used to effect the exploration of deeper and more dangerous seams which in turn resulted in an increased death toll." 36 The "power" of Davy's Chemistry is structurally tied to material social forces that are never to be equilibrated, never can be. In that sense, Davy's work was "mechanical" (if his philosophical ideas were not) in its contribution to an industrial order of inevitable exploitation and conflict. Coleridge, like so many nineteenth-century conservatives, recoiled from anything that promoted a social order based on endless material exploitation and power. His millennial goal was, had always been, a state founded on conciliation (though not necessarily material equality) among individuals sharing both faith and moral purpose. The aim of his first major political work, The Friend (1809-10; revised 1818), is to demonstrate that such a state could not be built by Reason
alone (see *Friend* 1:191-202; 1809 vers. 2:126-133); nor could a mere increase of knowledge lead to utopia.

By the time of his 1818 "Essay on the Principle of Method," the capstone of the three-volume edition of *The Friend*, mere "Mechanical Philosophy" is attacked as symptomatic of "the epoch of division and separation," espoused by "the partizans of the revolution in the state" who produced "a system of natural rights instead of social and hereditary privileges," that "noble feeling . . . openly stormed or perilously undermined" (*Friend* 1:444; 447). If, in *Religious Musings*, scientific knowledge acts to provoke a wholly new resolution of social conflict and initiate a millennial order (however vaguely conceived), in *The Friend* polarities develop in a Schellingian manner from some Urgrund to be reconciled in ideal laws contemplated by what Coleridge calls "a learned class," the "essential element of a state" (1:447). That class produces not new institutions but new conceptions, new *intellectual* reconciliations arrived at methodically with the aim of arriving at higher and more abstract idealist equilibria: "Abstract from all these [experimental theories of chemistry or electricity] that which is common to, and involved in them all; and we shall have neither notional fluid or fluids, nor chemical compounds, nor elementary matter,—but the idea of two—opposite—forces, tending to rest by equilibrium" (1:178). This notion of idealist reconciliation is, in fact, the social and political theme of this 1818 work, that "EVERY POWER IN NATURE AND IN SPIRIT must evolve an opposite, as the sole means and condition of its manifestation: AND ALL OPPOSITION IS A TENDENCY TO RE-UNION."

Now further social progress would come in the development of internal intellectual achievement which will methodically moderate and reconcile material observation and utility with mere speculation.

It is difficult not to see reflected in Coleridge's development the progressive withdrawal of an older British intellectual class from its early days of heady political activism to a contemplation of its own powerlessness before the new technological bureaucratic elite that prospered in the wake of the Napoleonic wars. Indeed, Coleridge's ultimate aim in *The Friend* is to distinguish the merely material progress of *civilization* from that steady, lawful, religious and moral reconciliation of theory and practice he calls *cultivation*. This is the goal of true education: "Alas! how many examples are now present to our memory, of young men the most anxiously and expensively be-schoolmastered, be-tutored, be-lectured, any thing but *educated*; who have received arms and ammunition, instead of skill, strength and courage;
varnished rather than polished; perilously overcivilized, and most pitably uncultivated!" (1:500). Technical education fosters only refinement of "the means of sensual gratification," so that in mastering "the AGREEABLE" humanity becomes narrow and selfish, "fraterniz[ing] readily with cruelty and rapacity." It is the "vicious of mankind" who have always "recoiled from all true cultivation, as they hurried towards civilization" (1:501-2). Lest the point of this be missed, he warns his readers that society must "attain to a due insight into the momentous fact, fearfully as it has been, and even now is exemplified in a neighbor country, that a nation can never be a too cultivated, but may easily become an overcivilized, race" (1:494).

Here, then, is the path that led Coleridge from an initial excitement over Davy's progressive experiments in electrochemical polarity to the anti-Benthamism that so impressed (and partly convinced) John Stuart Mill later in the century. Like Coleridge, Shelley was a young enthusiast both for Godwinian progressivism and Davy's chemical revolution. He knew and annotated Davy's popular Elements of Agricultural Chemistry (1813), and he bought his Elements of Chemical Philosophy (1812) soon after it appeared. He seems to have known the 1802 Davy lecture that so excited Coleridge and, like Coleridge, in rejecting Godwinian materialism Shelley too came to criticize a technological culture unleavened by any moral or imaginative sensibility. Indeed, it is likely that Mary Shelley drew on Davy's lecture, even echoing its language, as the inspiration for Frankenstein's eye-opening conversion from speculative alchemy to a misplaced Faustian zeal for the new chemistry.38

Yet, as Carl Grabo long ago noted, Shelley remained convinced of the civilizing power of the new science of Darwin, Davy, and Herschel.39 Though Shelley did caution against a technology untethered to the anchors of clear moral sense and a political redistribution of power, he also, as scientist and Shelley scholar Desmond King-Hele reminds us, retained his "passion for science and technology marching forward to improve standards of life."40 There is no reason to doubt the general tenor of the report given by Hogg of an early conversation he had with the young Oxford undergraduate:

"Is not the time of by far the larger proportion of the human species," he inquired, with his fervid manner and in his piercing tones, "wholly consumed in severe labor? . . . By chemical agency the philosopher may work a total change, and may transmute an unfruitful region into a land of exuberant plenty. . . . These speculations may appear wild, and it may seem improbable that they will ever be realised, to persons
who have not extended their views of what is practicable by
closely watching science in its course onward; but there are
many mysterious powers, many irresistible agents, with the
existence and with some of the phenomena of which all are
acquainted. What a mighty instrument would electricity be in
the hands of him who knew how to wield it, in what manner
to direct its omnipotent energies? . . . The balloon has not yet
received the perfection of which it is surely capable. . . . It
promises prodigious facilities for locomotion, and will enable
us to traverse vast tracts with ease and rapidity, and to ex-
plor[e] unknown countries without difficulty. Why are we still
so ignorant of the interior of Africa?—why do we not des-
patch intrepid aeronauts to cross it in every direction, and to
survey the whole peninsula in a few weeks? The shadow of
the first balloon, which a vertical sun would project precisely
underneath it, as it glided silently over that hitherto unhappy
country, would virtually emancipate every slave, and would
annihilate slavery forever.”

Like Coleridge, Shelley had abandoned the materialism of the philos-
ophes after an early enthusiasm, remarking in On Life that his rejec-
tion of the “popular philosophy of mind and matter,” with its
religious dogmatism “had early conducted me to materialism. This
materialism is a seducing system to young and superficial minds. It
allows its disciples to talk, and dispenses them from thinking” (SPP
476). But critics should not equate a rejection of materialism or of
Lockean empiricism with a rejection of scientific praxis. Unlike Coler-
dige, Shelley did not adopt idealism as a metaphysical absolute. As C.
E. Pulos demonstrated, Shelley refused to accept a Berkeleyan ideal-
ism, since he accepted Hume’s critique of causality, rejecting therefore
any faith that the ultimate causes of our experience could be known
to be mental: “Mind, as far as we have any experience of its prop-
ties, and beyond that experience how vain is argument, cannot create,
it can only perceive” (SPP 478). Coleridge’s rejection of both French
materialism and Lockean empiricism was consistent with his belief in
a continuity between human and divine cognition; Shelley’s skepti-
cism about ultimate metaphysical questions was consistent both with
radical antedogmatism (see Pulos, 54-57) and with unfettered tech-
nical praxis. But how could such skepticism accept a role for science, for
knowledge itself, in advancing human civilization?

Shelley’s well-known remarks on science and his attack on utilitari-
anism in the Defence of Poetry reflect his agreement with Coleridge
about the sterility of mere technical progress: "We have more moral, political and historical wisdom than we know how to reduce into practice; we have more scientific and economical knowledge than can be accommodated to the just distribution of the produce which it multiplies. The poetry in these systems of thought, is concealed by the accumulation of facts and calculating processes. There is no want of knowledge respecting what is wisest and best in morals, government, and political œconomy. . . . We want the creative faculty to imagine that which we know; we want the generous impulse to act that which we imagine; we want the poetry of life" (SPP 502). I believe, though, that critics have been too quick to see the Defence, which answers Peacock’s vision of a world where knowledge renders art unnecessary, as Shelley’s final word on science’s subordination to “imagination.” I think this represents a certain idealist bias among critics and a reluctance to see the broader view. Typical is Harry White’s epistemological approach, which argues that Shelley saw an “identity” of science and poetry as both imaginative orderings; that the “synthetic operation” of imagination “which yields scientific knowledge must be accompanied by another which links the objects of experience with the internal world of moral sensitivity”; and ultimately that “the imagination serves to supply the metaphysical foundations upon which a ‘science of facts’ depends.” About the moral sensitizing of the imaginative life there can really be no dispute. But I do not see Shelley in practice as a Coleridgean, whose “imaginative” faculty constitutes reality a priori. Reality is given moral meaning in the act of human conceptualization—concept and sympathy or love are for Shelley inseparable in human dialogue—and if the imaginative and the moral are inseparable for him, it is because thought, language, and imagination are interwoven together in social (not just ideal or theological) relations. The power to understand the world may belong to the moral faculty; but the power to change it belongs as much to science as to art. It is correct to say that Shelley’s science is directionless without a moral sense and the sympathies developed by a matured imagination; but imagination without knowledge, or exerted within a society not committed to the free exercise of real human power, can produce debased literature, superstition, fear, theologies that corrupt even the most cultured voices of civilization.

Shelley’s goal was a civilization of delight rather different and certainly more material than Coleridge’s contemplative culture. Shelley’s civilization moves toward the twin ideals of compassion and power, an expansion of secular humanity (and an enlightened class of
humane directors) to command both its power over social relations and its technical relation to nature. He claimed for poets and other moral leaders the right to command the new forces unleashed by the revolution in technical knowledge represented by Davy. The imagery that concludes *Prometheus Unbound*, we should recall, propounds the romantic humanist ideal of command as well as love, of mastery as well as compassion: the “Will” that is “ruled” by “Love” produces a new “Man . . . a chain of linked thought, / Of love and might to be divided not, / Compelling the elements with adamantine stress” (4.406; 409-10; 394-96). In a shrewd remark on these lines, Kenneth Neill Cameron observes that “Man, therefore, is the controlling force, not love as such—a new man in a new society. The concept of power here—implicit in the words ‘might’ and ‘Compelling’—tends to be ignored because of Shelley’s frequent emphasis on love and beauty. But Shelley felt that in the new order, power would be a dominant force, directed toward social, intellectual, and scientific conquest. He had admiration for and responded to the right kind and use of power.”

I add that the controller is not “Man” but a particular subset of humans: those who will do the directing of natural forces. Shelley’s skepticism frees from superstition so that a field may be cleared for the creative deployment of (the now unworshipped) natural forces. The Chorus of Spirits who celebrate in Act 4 come from the “human mind,"

We’ll pass the Eyes
Of the starry skies
Into the hoar Deep to colonize . . .
And our singing shall build,
In the Void’s loose field,
A world for the Spirit of Wisdom to wield. (4.141-43; 153-55)

For Shelley, it is neither empiricism nor transcendent absolute truth that constitutes the value of knowledge. The former is arid; the quest for the latter, as in *Alastor*, produces the inhuman isolation of narcissistic idolatry. Too clearly, nature responds to us with a human voice for Shelley, and this presents grave dangers as well as (the only) progressive possibilities. From *Alastor* to “Mont Blanc” to *Prometheus Unbound* his thinking on one point, at least, is consistent: a search for anthropocentric knowledge of absolute creative origins reveals only the course of obsessive quest itself. Mind for Shelley is receptive to the immanent powers of nature but not passive (a distinction Coleridge rejected), creating not a new nature but new ways of living in and thinking about the nature we are given. It is dogmatic to expect
creation from minds—human or divine; the most creative souls, poets, only legislate. 47 Scientific knowledge should reveal only the progressive pleasure and love to be found in the play of a mind expanding its order into a nature that returns to the knowing, civilizing mind more pleasure and more love. That, in the dance of Earth and Moon, of the Spirits and the Hours, in the masque of Prometheus Unbound, is about all the apocalypse we can expect. "The whole of human science," Shelley had said in a note to Queen Mab, "is comprised in one question: How can the advantages of intellect and civilization be reconciled with the liberty and pure pleasures of natural life?" (Julian 1:159). It is a position he would always maintain.

Ultimately, the context for this Coleridge-Shelley divergence in the value and function of scientific knowledge was the disappointment in the mass political movements of the 1790s that bore so little resemblance to the millennial revelation and dispassionate research that supposedly inspired them. If scientific knowledge cannot provoke a millennium it may yet help us to live in a new liberal world where private cultivation and public civilization enrich each other. If the real forces of nature are not the transcendent laws that inspire the contemplative worship of Coleridge's clerisy but immanent principles working within their own decentralized "fields," then the way to harness such forces for social good would be through a more anarchic play of sympathies. This would be education not as apocalypse but as florescence, a secular cascade among small groups who may make history by those most apparently unhistorical of means: curiosity, playfulness, wit, and a cosmopolitan openness to discovery.

For Shelley, in a poem like "Letter to Maria Gisborne," both science and art could be seen as the techne of a new, mobile, optimistic class which might yet change the world through "Wit and sense, / Virtue and human knowledge, all that might / Make the dull world a business of delight" (247-49). In that poem, Shelley sits "like some weird Archimage" (106) amid Maria's son Henry Reveley's engineering apparatus, his "great screws, and cones, and wheels, and grooved blocks" (52) scattered around with books of mathematical tables and "some odd volumes of old chemistry" (99). We might recall here Thomas Jefferson Hogg's description of Shelley's room at University College, Oxford:

Books, boots, papers, shoes, philosophical instruments, clothes, pistols, linen, crockery, ammunition, and phials innumerable, with money, stockings, prints, crucibles, bags, and
boxes, were scattered on the floor and in every place; as if the young chemist, in order to analyze the mystery of creation, had endeavoured first to re-construct the primeval chaos. . . . An electrical machine, an air-pump, the galvanic trough, a solar microscope, and large glass jars and receivers, were conspicuous amidst the mass of matter.48

In 1819, Shelley had invested in Reveley’s steam ferry idea, and his tour of the engineer’s casting shop rekindled the fascination with steam machinery of his Eton days, when his science tutor was Dr. James Lind, close friend of James Watt.49 Upon hearing that a cylinder for the steamboat engine had been cast, Shelley wrote to Reveley in a manner both ingratiating and heartfelt:

Your volcanic description of the birth of the Cylinder is very characteristic both of you & of it. One might imagine God when he made the earth, & saw the granite mountains & flinty promontories flow into their craggy forms, & the splendour of their fusion filling millions of miles of void space, like the tail of a comet, so looking & so delighting in his work. God sees his machine spinning round the suns in space with the same manufacture.—Your boat will be to the Ocean of Water what the earth is to the Ocean of Aether—a prosperous & swift voyager.50

Here is whimsical but telling mythologizing of the Promethean adventurer, creator, colonizer of the cosmos. Shelley is only half-serious, but in imagining the process of manufacture along with Reveley he attempts to share in his own way in the creative voyage. A similar tone, casting Shelley as both excited participant and object of mild satire, pervades the “Letter to Maria Gisborne.” The oddness of the “Letter” is the incongruity of a poet in a borrowed study drawing the scientist and his commercial family into the writer’s world of playful talk and whimsical metaphor. As he does so, the wielding of words, like that of machinery and capital, becomes the common activity of an enterprising class into which Shelley argues himself.

In his poem, a world of new technology is opened to what is quite explicitly a new class of liberal, imaginative pioneers: in a typical Shelleyan image, the bizarre toys in Henry’s study are compared to the “thumbscrews, wheels, with tooth and spike and jag” (35) sent by the Spanish Inquisition to torture the English and now lying broken with all the wrecked Armada on the British shore, where uncomprehending fishermen see the now-harmless relics of a “dim” and repres-
sive age. But now Spain "relumes her fire / On Freedom's hearth," and this new political freedom in Europe, the "Letter" suggests, clears a space for the playful poet to "float . . . a paper boat" on the scientist's bowl of mercury; clears a space for science to be imaginative play, and art to be shared, like this "Letter," among a convivial set of urbane friends.

Certainly the playfulness of a dominant class can always be reduced to an ideology of sportiveness that exploitation makes possible. But that would be a narrow reading of the way, historically, imaginative and technical / entrepreneurial creativity were imbricated in the early years of the Industrial Age. We should remember that Shelley's essentially bourgeois hopes were not yet clearly those of a dominant, rather than emergent, class. In the post-Napoleonic era, Shelley's class could easily imagine its aspirations were both revolutionary and representative of a new economic order that would transform universal humankind. Maria Gisborne herself bridged two worlds, having known Godwin and Holcroft in the revolutionary '90s and now supporting the entrepreneurial projects of her engineer son. She may, Shelley writes, see in London "Coleridge—he who sits obscure / In the exceeding lustre and the pure / Intense irradiation" of his dark and desperate mind (202-4), a bewildered outcast of an earlier and frustrated revolutionary idealism.

The "Letter" is an example of a new kind of hope for science, a defense of civilization less available to Coleridge's generation. Coleridge's early hope for the new knowledge had been for a visionary return to origins, a civilization of "Universal Equality" without property, commerce, or government. Shelley's civilization is founded on control (legislation) of exchange—of words, of knowledge, of currency—to produce not a return to origins but a future-oriented complexity of relations with no goal but pleasure. This was an easier hope to advance in the aftermath of Napoleon and the rapid ascendancy of national bureaucratic and commercial elites. A generation earlier, the French materialist revolt seemed to promise that science's classless truth would provoke a classless millennium. But perhaps the dissolution of ancient superstitions was exactly a class opening, an opportunity (less grandiose) to deploy mind, compassion, and techne together, allowing an urbane and revolutionary middle class to educate and civilize the world.

Northern Illinois University
Notes


4. CL 1:557 (1 Jan.1800, to Davy).


6. Typical is the well-known idealism of Earl Wasserman, who sees Shelley as a monistic idealist for whom “Time and space are unreal,” and “Existence is to be defined as the One Mind”; Shelley: A Critical Reading (Baltimore: The Johns Hopkins University Press, 1971), 148, 149. See also the rather inflated claim of Harry White that for Shelley, “poets appear after the genesis of the world and give the word flesh, revealing the logos” and imparting material substance in the sense of ordering the given world; the poets are thus “men of science” themselves: “Shelley’s Defence of Science,” SIR 16 (1977): 330.


14. “Johann Wilhelm Ritter: Romantic Physics in Germany,” in Romanticism and the Sciences, ed. Andrew Cunningham and Nicholas Jardine (Cambridge: Cambridge University Press, 1990), 199. This collection is one of the best recent works to explore the convergence of Romantic political, social,
and scientific ideology and practice. Hereafter cited as *Romanticism and the Sciences*.


20. Indeed, it is possible that empirical method can *never* really decide between two kinds of interpretations. The Popperian view (which is, in effect, Eichner's [see 22-23, and 29 n.51]) is that such undecidability is only a function of crude instrumentation and that the correct interpretation just awaits the right experiment. Few historians of science, however, believe that this is how science usually does decide among interpretations, especially in the case where an experiment demands radical theory change. For an effective response to Popper (which eschews mysticism as an alternative in favor of a rhetorical or historical approach), see Marcello Pera, "Radical Theory Change and Empirical Equivalence: The Galvani-Volta Controversy," in *Revolutions in Science: Their Meaning and Relevance*, ed. William Shea (Canton, MA: Science History Publications, 1988), 133-56, esp. 146-48.


23. Gerrit Verschuur, *Hidden Attraction: The Mystery and History of Magnetism* (Oxford: Oxford University Press, 1993), 51. I have also relied on this lively and often amusing history for my discussion of Galvani and Oersted. Pera (148-53) demonstrates that it was in fact logically impossible to decide, based on experiments with frog tissue, that animal magnetism was *not* a real force distinct from Volta’s currents: “empirical equivalence is a permanent property of the two systems and therefore experiments are in principle incapable of resolving the dispute” (148). But Volta’s stunning technological success was nonetheless a strong argument, and his interpretation the more productive and consistent with later technical practice and electrochemical theory.


25. Verschuur, 67-68. It is worth noting that two of the greatest Continental physicists of the nineteenth century, Helmholtz and Hertz, whose practical contributions included the discovery (again, partly accidental) of radio
waves, were also influenced by German Naturphilosophie and Kantian metaphysics.

26. Coleridge responded, "Success, my dear Davy! to Galvanism & every other ism & schism that you are about"; both quoted in Levere, Poetry Realized in Nature, 32.


29. Batchen, 177. Historian of science Christopher Lawrence concludes that "for Davy there were no fundamental breaks in the universe; rather it was a continuous, hierarchical, increasingly organized scale of perceptive existence in which light was the most fundamental power"; in "Humphry Davy and Romanticism," in Romanticism and the Sciences, 216.

30. Verschuur, 77; it seems that Faraday learned about Oersted from Davy in late 1820: see Knight, 149.

31. Technically, this development was not definitive for physicists until the mathematical models of Maxwell and the experimental work of Helmholtz at the end of the century. Interestingly, even the image of a field has in our century become something of a nineteenth-century holdover, since as a description it has been superseded in many areas by a quantum (particle) electrodynamics ("QED").

32. Lawrence, 223. For an extended study of the material, social, and political culture in which Priestley and Davy worked, and of the radicalism of their approach to scientific method, see Jan Golinski, Science as Public Culture: Chemistry and Enlightenment in Britain, 1760-1820 (Cambridge, England: Cambridge University Press, 1992).


34. CL 3:38 (Nov. 1807, to Dorothy Wordsworth).


36. Lawrence, 223, 214, 224.

37. Friend 1:94; the passage was added to an 1809 Friend essay on "Law and Religion" for the 1818 edn.: cf. Friend 2:68. The vocabulary, of course, derives from Schelling and Naturphilosophie: for the importance of "polarity," see Gower, 318-27.

40. King-Hele, 137.
43. White, 327, 325, 328.
44. See, for example Frances Ferguson’s persuasive view that in “Mont Blanc,” Shelley “aligns epistemology with love—[an] emotional profligacy that continually postulates and assumes the existence of an interlocutor. . . . In Mont Blanc Shelley falls in love with a ravine, a river, and a mountain not because of the nature of those objects but because of his own, his human, mind, which cannot imagine itself as a genuinely independent, isolated existence”; “Shelley’s Mont Blanc: What the Mountain Said,” in Romanticism and Language, ed. Arden Reed (Ithaca, NY: Cornell University Press, 1984), 207.
45. See, for example, A Philosophical View of Reform: “Then the oppressed [of France] having been rendered brutal, ignorant, servile and bloody by long slavery, having had the intellectual thirst, excited in them by the progress of civilization, satiated from fountains of literature poisoned by the spirit and the form of monarchy, arose and took a dreadful revenge on their oppressors. . . . Tyranny entrenches itself within the existing interests of the most refined citizens of a nation” (Julian, 7:13).
46. Shelley: The Golden Years, 556. See also the more recent remark of Stuart Sperry on Act 4, “Like John Stuart Mill, Shelley would argue that the path of true progress lies not in following nature but in correcting it”; Shelley’s Major Verse (Cambridge, MA: Harvard University Press, 1988), 123.
47. See the conclusion of Harry White (330) that “what Shelley sought to deny both man and God was the power to disturb the laws of creation.”
48. Hogg, 1:55-56. The description may be exaggerated, but it is confirmed by Medwin.
49. King-Hele, 136-37. When Shelley was only twelve he heard lectures at Syon House Academy on the new chemistry by Dr. Adam Walker, a disciple of Priestley’s (for Walker, see Golinski, 96-97). Donald Reiman has remarked that the shipping venture, “had it not proved abortive, might well have made Shelley a shipping entrepreneur. . . . During most of Shelley’s life he fervently desired to fill a position of responsibility and exercise practical influence” to become an active reformer: “Shelley as Athanase,” in Shelley and His Circle, ed. Donald Reiman and Doucet Fischer, Vol. 7 (Cambridge, MA: Harvard University Press, 1986), 130.
51. So Coleridge told his audience in Bristol in 1796, though he argued that not revolution but principled reform must lead the way to a golden age: “Universal Equality is the object of the Messiah’s mission not to be procured by the tumultuous uprising of an indignant multitude but this final result of an unresisting yet deeply principled Minority. . . . Jesus Christ forbids to his disciples all property—and teaches us that accumulation was incompatible with their Salvation! . . . That we use money is a proof that we possess individual
property, and Commerce and Manufactures, and while these evils continue, your own vices will make a government necessary"; "Lectures on Revealed Religion," in Lectures 1795 on Politics and Religion, ed. Lewis Patton and Peter Mann, vol. 1 of The Collected Works of Samuel Taylor Coleridge, gen. ed. Kathleen Coburn, assoc. ed. Bart Winer (Princeton: Princeton University Press, 1971), 218, 226, 228. As the editors note (214), the major influences on Coleridge's thinking here were Rousseau and Godwin.