BIOGRAPHIA LITERARIA AND THE LANGUAGE OF SCIENCE

BY TIMOTHY J. CORRIGAN

As far as words go, I have become a formidable chemist.
Coleridge, Letter to Humphry Davy, 1801

When Coleridge began dictating his Biographia Literaria in 1815, he was at the same time becoming actively involved in a medico-philosophical controversy that was then drawing the attention of many medical men and philosophers in England. The fundamental issue behind the quarrel, a materialistic versus a vitalist theory of nature, was one Coleridge had argued in one form or another throughout his career. Yet, the challenge of modern science specifically had never been so strong nor had it so vociferously demanded his attention as it did in the years from 1814 to 1819. Coleridge’s response is well documented: the revised and enlarged version of The Friend, his Lay Sermons, the “Theory of Life,” and a series of philosophical letters written between November 1816 and January 1818 all testify to Coleridge’s growing concern with the challenge of science to his philosophy and to his need to validate his philosophical beliefs with scientific evidence. In one of his letters to C. A. Tulk, Coleridge prefaces a long account of the forces of nature with these remarks: “In my literary Life you will find a sketch of the subjective Pole of the Dynamic Philosophy. . . . In the third volume of the Friend, now in the Press, you will find the great results of this Philosophy in its relation to Ethics and Theology—while the enclosed Scrawl contains a very, very rude and fragmentary delineation of the Objective Pole, or the Science of the Construction of Nature.” The enclosed scrawl is in fact an abstract of Coleridge’s “Theory of Life,” his most detailed and comprehensive scientific treatise and a work which refers explicitly to John Abernethy and other major figures in the then current medical controversy. The literary life is of course the Biographia Literaria, roughly contemporaneous with the posthumously published “Theory of Life” and likewise in the orbit of the scientific debates. That the Biographia Literaria also refers to scientists involved in the medical debate is only tangentially significant; that the Biographia Literaria employs much of the scientific language used in the “Theory of Life” and implicitly derives many of its critical models

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1 See, e.g., Walter Jackson Bates’ Samuel Taylor Coleridge (New York, 1968).
from the scientific models sketched in that work is, however, extremely significant, for it shows Coleridge transferring the scientific discourse which suffused his intellectual life at the time to another discourse, literary criticism. Probably no other alteration in the language of literary criticism has affected the practice of criticism more.

Coleridge's prolific response to the medical controversy surrounding the composition of the *Biographia Literaria* was, of course, the product of many years of reading and thinking about science. Since his early years at Christ's Hospital, Coleridge flirted on and off with biology and chemistry; and his meeting in 1799 with Humphry Davy (1778-1829) marked the beginning of a friendship that inspired Coleridge to seek metaphors for his poetry and solutions to his own metaphysical problems in scientific research. In one of the rare articles on Coleridge and science, Kathleen Coburn relates how, at its outset, this friendship between the father of the new chemistry and the father of the new criticism was mutually productive: Coleridge shared much of Davy's scientific reading, and as Coleridge searched for the laws within the impalpable, within poems, Davy "was searching out laws of substances hitherto unknown by revealing that beneath the static appearance of the stone, or the powder . . . there may be the flame, the loud bang, the explosive energy. They were both enraptured by the revelation of unsuspected relationships in the vast diversity of things, inanimate as well as animate." It is not surprising, then, that Coleridge's and Davy's descriptions of the poet and the scientist respectively are strikingly similar, or that "Coleridge's description in *Biographia Literaria* of the imagination derives at least some of its vitality and power from the fact that although he is talking about the nature of poetry, he might in places equally be talking about Davy's chemistry."2

2 Kathleen Coburn, "Coleridge, a Bridge Between Science and Poetry: Reflections on the Bicentenary of his Birth," in Coleridge's Variety, ed. John Beer (London, 1974), 91, 95. My entire essay is indebted to some suggestions in Coburn's article, and I am more generally indebted to M. H. Abrams' "Coleridge's 'A Light in Sound': Science, Metascience, and Imagination," *Proceedings of the American Philosophical Society*, 116 (1972), 458-75. In addition, Professor Meyer Schapiro has informed me of one of Coleridge's richer scientific observations. Coleridge, in his Notebooks (ed. Kathleen Coburn), no. 3116 (f. 13, July-Oct. 1807), writes, "Red, Green, and Violet the only colors," and tries to work out the results of mixtures of two colors accordingly. His Idea comes straight out of Thomas Young's new theory — now called the Young-Helmholtz theory. Although Coburn searched the *Philosophical Transactions* for the period of Coleridge's Notebooks, she missed Young's article: "Production of Colours" in which he presents this system of the primary colors. It was published in the volume for 1902, p. 395. The theory is presented again in Young's Lectures on Natural Philosophy, lecture XXXVII (1807). Others, like David Brewster, continued to hold to the view that red, yellow, and blue were the primaries because painters could produce all colors by these and the mixture of two or all three. It's possible that Coburn missed Young's text because it's not in the first article he published in that volume but in a correction in a later page in the same volume. I am grateful to Professor Schapiro for the above information.
It is important to realize, however, that these affinities between Coleridge and Davy are based on Davy's work around 1802, ten years before the waning of their intellectual friendship. Coleridge avidly followed Davy's 1802 lectures and read his work for many years after; but the famous marginal note to Boehme's *Aurora* (1612) summarizes the vicissitudes of a relationship strained by the demands of modern science:

O how gladly would I resign my life . . . to procure for mankind such health and longevity to H. Davy, as should enable him to discover the Element of metals, of Sulphur and of Carbon. O! he will do it! Yea and may perhaps reveal the synthetic Idea of the Antithets, Attraction and Repulsion.

S. T. C.

Alas! since I wrote the preceding note H. Davy is become Sir Humphry Davy and an Atomist!

As M. H. Abrams illustrates in *The Mirror and the Lamp*, using writers like Keats as examples, the personal misunderstandings between Davy and Coleridge were in part a product of general rift in England between science and poetry in the first quarter of the nineteenth century, Coleridge belonging to the poetic school of spirit and imagination and Davy often tending toward a progressive science which was becoming increasingly mechanistic and materialistic. Davy, in fact, never totally accepted the theories of atomists like Dalton, and he and Coleridge would always remain distant admirers. Yet the gap that atomistic science was creating between poetry and science made it increasingly difficult for them to share and discuss philosophies. Unhappily for the poets, the disparity between the two disciplines could only diminish poetry's value, as scientists claimed that the poetic vision was a fantastic way of knowing with little relevance to the scientific laws of nature. For Coleridge, this claim—that there was an inherent and inescapable conflict between science and poetry—was intolerable, for if the scientific validity of imaginative perception could not be maintained, the moral principles founded on that imaginative perception would be in danger of dissipating as ethereal musings. Thus in the *Treatise on Method* (1818) he bemoans a world suffering "from a subversion of the natural and necessary order of science: from elevating the terrestrial, as it were called, above the celestial; and from summoning Reason and Faith to the bar of that limited Physical experience." The visions of science and poetry must remain parallel and complementary ways of seeing, both supporting a dynamic and spiritual conception of life; and the rise of a mechanistic science in 1812 became, consequently, a betrayal representative of a trend that had to be countered in every way possible.

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*Cited in Alice D. Snyder, Coleridge on Logic and Learning* (New Haven, 1929), 23.

Hard on the heels of the disagreements between Coleridge and Davy, the medical controversy of 1814–1819 erupted around issues closely resembling those that separated the two men. The writings of John Hunter catalyzed the debate whose principal spokesmen were John Abernethy (1764–1831) and Sir William Lawrence (1783–1867): Abernethy championed Hunter's spiritual and dynamic principles of life, and Lawrence charged that Abernethy's misinterpretations of Hunter were ridiculously unscientific, that Abernethy and his followers arbitrarily—and sometimes fantastically—used strictly scientific phenomena like magnetism or electricity to account for life itself. Abernethy's vital principle, according to Lawrence, was "like a camel, or like a whale, or like what you please." Documenting the main points of this argument in *Coleridge on Logic and Learning*, Alice Snyder notes that the "fundamental questions of the controversy seem to have been two: first, the relation of structure to function; second, the place of theory in physiological investigation—broadly speaking, the method of scientific thought and procedure." The battle lines on the two questions were clearly drawn. Operating from an avowed theological foundation, Abernethy "could accept no physical science that did violence to his conception of spirit." The life force, he maintained, was independent of organization and structure and prior to it, for the priority of function to structure was essential to the concept of functional unity in any organism. Lawrence, on the other hand, kept his biology and his theology segregated. For him, that an organism was the product of organization was an irrefragable scientific fact, independent of religious questions. Regarding the second question, it is almost needless to point out that Lawrence, the laboratory worker, strongly objected to theories and hypotheses and minimized the role of speculation in scientific labor as much as possible. But Abernethy made the most of theory and hypotheses, and "justified them on grounds that suggest the instrumentalist's point of view; he justified them, that is, on grounds of the concrete investigation that they provoked and controlled." If these were the questions Hunter's work raised and the solutions each faction loudly proclaimed, it goes without saying that both Abernethy and Lawrence discovered in Hunter what they wanted to discover, a way of responding that Coleridge was equally guilty of when he entered the ring of the debate. After rehearsing the quarrel, in his "Theory of Life," Coleridge hails Abernethy's role in developing "the true idea of life," a dynamic philosophy like Coleridge's own which gave priority to

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6 Snyder, 18.
7 Snyder, 21.
8 Ibid.
function over structure and emphasized the laws of nature rather than the arrangement of particles. "In Mr. Abernethy's Lecture on the Theory of Life," Coleridge writes, "it is impossible not to see a presentiment of a great truth. . . . If the opinions here supported are the same with those of Mr. Abernethy I rejoice in his authority. If they are different, I shall wait with anxious interest for an exposition of that difference." Thor-oughly idiosyncratic, "Theory of Life" is Coleridge's defense of Hunter's and Abernethy's vitalism; it attempts to prove and to illustrate that "Life itself is not a thing—a self-subsistent hypostasis—but an act and a proc-ess" (TL, 430). The arrangement of separate bodies or atoms does not explain life; rather, "The most comprehensive formula to which life is reducible, would be that of the internal copula of bodies, or . . . the power which discloses itself from within as a principle of unity in the many" (TL, 384). To prove these claims Coleridge presents a detailed outline of the evolution of life as it manifests itself through the conjunction of three forces, magnetism, electricity, and what Coleridge labeled "chemical affinity." Not surprisingly, each of these forces plays an important role in Biographia Literaria.

In its intent and language, "Theory of Life" is clearly a scientific tract, directed at a scientific audience and employing the scientific discourse that Coleridge knew from his attendance at Royal Society lectures and his indefatigable reading of such scientific journals as William Nicholson's Journal of Natural Philosophy, Chemistry, and the Arts and the Royal Society's Philosophical Transactions. There is some difficulty, though, in isolating a "scientific discourse" in 1815, since a specialized language for science is only just emerging at this time, just as a specialized thinker called a scientist is only just beginning to be recognized. Coleridge obvi-ously belongs to an earlier tradition where the scientist is first of all a natural philosopher, perhaps best described by the passage from the Re-public which Coleridge translates as his epigraph to an essay in The Friend (1818); Plato distinguishes here between mere "Philotheorists," and "those whom alone you may rightly denominate Philosophers, as knowing what the science of all three branches of science is, which may prove something more than the mere aggregate of the knowledge of any particular science." Nineteenth-century scientists, however, could not be comfortable with this archaic conception of their role. They needed the precision provided by specialization in thought and language. So while Coleridge disparages Davy "who seems more and more determined to mould himself upon the Age, in order to make the Age mould itself upon

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him." Davy sees Coleridge's tragedy as a failure to adjust to the exigencies of modern science. Coleridge's philosophical language simply lacks the "order, precision, and regularity" to deal with the problems of contemporary science.

Purporting to be more precise and better disciplined, Davy and his colleagues were isolating themselves in their laboratories and fashioning their own specialized vocabulary. Hence, whether Coleridge liked the situation or not, if he wished to argue his philosophy with these men, he had to learn to use their language. This does not mean that traces of other discourses, particularly of theology, cannot be found in the scientific vocabulary of 1815. But, after 1800, even in Coleridge's writings, scientific discourse surfaces with enough autonomy to isolate it, and the "Theory of Life" is the clearest evidence of Coleridge's own use of that language to defend his beleaguered vitalism.

Indeed, translating his own views of science into a modern scientific idiom becomes a major project for Coleridge in 1815; but equally important is the extent to which this scientific model can explain other phenomena, such as art, and how far these other phenomena will corroborate his scientific findings, since implicit in Coleridge's monistic idealism is the common foundation of all areas of knowledge. Coleridge himself never doubts, of course, that there are such philosophical links between science and other disciplines. Writing to Tulk in 1817, he says that "True Philosophy . . . takes its roots in Science in order to blossom into Religion," and in a letter to Lord Liverpool the same year, he recalls his hope that his own idealistic metaphysics will be confirmed by Davy and "the late successful researches of the Chemists" which have demonstrated that "in all pure phaenomena we behold only the copula, the balance or indifference of opposite energies." Moreover, in the same letter after discussing speculative science, physiology, and "Demiurgic atoms," Coleridge asks "What is all this to the world at large?" His answer goes some way in explaining why he does not confine scientific language to a scientific treatise, but transfers it to other fields, notably the field of literature in Biographia Literaria. Throughout history, he argues, science or natural philosophy has maintained so direct a structural correspondence with other cultural phenomena that this correspondence "must remain inexplicable, unless we admit not only a reaction and interdependence on both sides, but a powerful, the most indirect influence" of science on the other fields of knowledge. Using examples of art from the medieval period and the eighteenth century, he comments, in a way that might anticipate the twentieth-century philosopher Michel Foucault, "these are all but the ribs, abutments and sea-marks of a long line of correspondencies in the

11 Collected Letters, II, 1042.
13 Collected Letters, IV, 76.
arts of Taste to the opposite coast of speculative Philosophy." In short, systems of thought and signification affect the structure of contemporaneous systems, so that an error in a system like speculative philosophy or science could be disseminated throughout other systems. Thus, the "recent relapse . . . of the Chemists to the atomistic scheme, and the almost unanimous acceptance of Dalton's Theory in England, & Le Sage's in France determine the intellectual character of the age with the force of an experimentum crucis;"14 and even poetry is in danger of being degraded by a mechanistic science whose laws and models will inevitably affect literary criticism and poetry. There is a "link or mordaunt by which philosophy becomes scientific and sciences philosophical,"15 and likewise there is a link between science and poetry which would allow for the corruption of poetry by science and the substantiation of both through the truth they share. "If in the greatest poets we find Nature idealized through the creative power of a profound yet observant meditation, so through the meditative observation of a Davy, a Wollaston, a Hatchett, or a Murray, . . . we find poetry, as it were, substantiated and realized."16

In 1815 Coleridge's task, then, was to establish the connections between his scientific models and the realm of poetry, connections which the scientific community especially were ignoring or denying. In the perspective of Coleridge's visionary philosophy, these connections were clearly present; he needed, however, to substantiate and realize them for the world at large and specifically for his scientific competitors. The solution was in language; and ease and accuracy in transferring the language of "Theory of Life"—the scientists' own inbred tongue—to Biographia Literaria became the most direct and effective way of illustrating the commensurability, even the authority, of both Coleridge's science and his poetics.

The way scientific language permeates literary definitions and practical criticism will be my primary concern here; and these areas of Biographia Literaria generally relate to the biological issue of function versus structural arrangement. But the second topic of these debates, the value of theory in investigative research, also plays a large role in the Biographia. This second issue is naturally less directly involved with language itself, and, further, critics of Coleridge are more apt to discuss it, though rarely in the context of the medical debates which greatly influenced Coleridge's thinking about theory. Snyder notes that during the medical debates, Coleridge was forced into a fundamental consideration of the processes of thought. There resulted a vivid realization of the extent to which all thinking is determined by assumptions, ideas, images, and attitudes of even less tangible sorts. Coleridge's

14 Collected Letters, IV, 758-62.
15 The Friend, I, 463.
16 Treatise on Method, 25.
insistence that fertilized thinking involved more than induction, and experience
more than what is commonly meant to empiricists; that the premises are the
critical part of reasoning, and that they depend on something other than the
understanding—on a power that brings into play the total man,—these prin-
ciples of thought and method were formulated through his contacts with many
philosophical minds, but to no small extent their use in the physiological and
chemical controversies in which he took part.\footnote{Snyder, 31.}

More specifically, Coleridge was faced with a choice between Abernethy's
method based on theory and Lawrence's method of supposed objectivity
based on observation exclusively. He rejected both, however, in favor of
his own method based on law, a method derived at least in part from
\footnote{Kant defined "nature in general" as "the conformity to law of all appear-
ances in Space and Time" (Critique of Pure Reason, B165).}
Kant.\footnote{Method and Imagination in Coleridge Criticism (London, 1969).}
A scientific definition, Coleridge claims in "Theory of Life," should be neither a theory nor a generalization. It consists instead "in the
\emph{law} of the thing, or in such an \emph{idea} of it, as being admitted all the proper-
ties and functions are admitted by implication. It must likewise be so far
\emph{causal}, that a full insight having been attained of the law, we derive from
it a progressive insight into the necessity and \emph{generation} of the phaeno-
mena of which it is the law" (\textit{TL}, 370). In \textit{Method and Imagination in
Coleridge's Criticism}, J. R. de J. Jackson treats fully Coleridge's indi-
vidual preference for "law over theory," his conclusions usually being
correct and usually standard.\footnote{Method and Imagination in Coleridge Criticism (London, 1969).} According to Jackson, the pursuit deter-
mines the method; the specific ends determine the means employed. Thus,
a scientist like Abernethy apprehends truth, "the Communicative Intelli-
gence," through material evidence, and must rely on the inexact method
of theory which is primarily an educated guess based on prior research.
The poet, on the other hand, apprehends intelligence by looking through
the material substance to the essence of phenomena, discovering the law
and then presenting the law in the language of the poem. The poem does
not depend on the material world for his knowledge. Here Jackson fol-
lows Coleridge's thought quite accurately, but there are two important
qualifications to add to his discussion: first, in "Theory of Life," Cole-
ridge argues, in opposition to speculative scientists, for a scientific method
based on law, suggesting therefore the same method for poetry and sci-
ence; and secondly, explaining method in Coleridge's theory, Jackson
overlooks the reader-critic whose method is different from the poet's and
who is the real subject of \textit{Biographia Literaria}. (If nothing else, the
amount of time and space Coleridge uses to berate hack critics tells us
that he is discussing a way of investigating poetry, not the way to make a
poem, that he is \emph{explaining} poetry, not \emph{accounting} for it.) Though these
may be fine distinctions, they are very important ones, for it is in these
distinctions that the medical debates most obviously make their mark on
the *Biographia*: in 1815 the scientific method that Coleridge urges on
both Abernethy and Lawrence is one based on law, and accordingly, the
critical methodology he proposes and uses in *Biographia Literaria*
depends on philosophical law. Both the scientist and the critic work with
more or less refined material data, and for both only Coleridge's proce-
dure based on law can guarantee objectivity and accuracy. In short,
though the critic, the poet, and the scientist all search out law, the critic
reading the poem is more like the scientist investigating a chemical reac-
tion than like a poet writing a poem.

Investigating poetry in 1815, then, Coleridge works according to his
self-defined scientific method in which laws are the lamps of good re-
search, and, as in biological research, these laws "of poetry cannot be
given from without" but "are the very powers of growth and reproduc-
tion" which the critic must perceive. Here, as in every science, "it is
the essence of a scientific definition to be causative, . . . by announcing
the law of action in the particular case, in subordination to the common
law of which all phenomena are modifications or results" (*TL*, 370).
Thus in *Biographia Literaria* Coleridge's theoretical definitions do not
describe how to make a poem or propose generalized standards or theories
against which to measure a poem; they describe instead the laws of poetry
as formal causes in every poem, and Coleridge's criticisms of Wordsworth,
for instance, point out deviations from these laws. Appropriately, Cole-
ridge's tone and method is that of a biologist noting freakish deviations
in the laws of nature. After presenting the primary laws—polarity, the
secondary imagination, the laws of meter—he examines his material in
their light; concentrating on Wordsworth and Shakespeare he explains
how their works function and where they fall short of the ideal laws of
poetry. Thus the organic metaphor, for Coleridge, does not account for
a poem but explains the ideal laws of its formation; and Coleridge is far
less concerned with the personality behind the poem—William Words-
worth or William Shakespeare—than with the product those two minds
generate.

The issue of theory versus law, however, is only indirectly a product
of the scientific language in *Biographia Literaria*. The language itself is
a much more immediate and powerful presence, and one of the more
effective ways of emphasizing the ubiquitous presence of the scientific lan-
guage is a simple comparison of passages from the scientific work and
the literary work. These passages are among Coleridge's most frequently
quoted, and one needs only refer to Coleridge's use of centripetal and
centrifugal force, for example, in both "Theory of Life" and *Biographia
Literaria* to see how directly that language transfers (*TL*, 391; *BL* I,
175). Moreover, there are passages in *Biographia Literaria* which seem
to refer explicitly to the medical debate, using terms which ostensibly have

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little bearing on literature. This passage from chapter twelve of the *Biographia* could have been lifted directly from "Theory of Life," though in context it becomes relevant to Coleridge's epistemology and hence his poetics:

The highest perfection of natural philosophy would consist in the perfect spiritualization of all laws of nature into laws of intuition and intellect. The phaenomena (*the material*) must wholly disappear, and the laws alone (*the formal*) must remain. . . . The optical phaenomena are but a geometry, the lines of which are drawn by light, and the materiality of this light itself has already become a matter of doubt. In the appearance of magnetism all trace of matter is lost, and of the phaenomena of gravitation . . . there remains nothing but its law, the execution of which on a vast scale is the mechanism of the heavenly motions. (*BL* I, 175)

Further, Coleridge himself suggests what the evolutionary scheme of "Theory of Life" means to the practicing artist. "Each thing that lives," he writes in his essay "On Poesy or Art," has "its moment of self-exposition, and so has each period of each thing"; "each step of nature hath its ideal, and . . . the possibility of climax up to the perfect form of a harmonized chaos." Therefore, the "artist must imitate that which is within the thing, that which is active through form and figure, and discourse to us by symbols—the Naturgeist, . . . for so only can he hope to produce any work truly natural in the object and truly human in the effect" (*BL*, 259, 262). Contrast this description of imitation to Coleridge's earlier and vaguer distinction between imitation and copying, and it is obvious how his scientific scheme of evolution elaborates and extends that original notion of imitation. The scientific language transforms the earlier simplistic and static definition of imitation as "a combination of a certain degree of dissimilitude with a certain degree of similitude" into a more dynamic, evolutionary concept that anticipates the pseudo-scientific poetics of Hulme and others.20

A final and more concrete example of Coleridge's transferring the language of scientific discourse to the definitions and literary principles in *Biographia Literaria* is his description of genius, specifically of Wordsworth's genius. Out of context the statement on Wordsworth's development seems an ungainly simile; however, in the context of the medical debate whose occasion and primary issue was the nature of physiological disorders and diseases, the language reverberates with a special biological significance:

it is remarkable how soon genius clears and purifies itself from the faults and errors of its earliest products; faults which, in its earliest compositions, are the

20 *Shakespearan Criticism*, ed. T. M. Raysor (London, 1960), II, 53. That the language here and in *Biographia Literaria* often comes directly from Schlegel or Schelling does not weaken my argument since it is the use of the scientific discourse that matters, not its origin.
more obtrusive and confluent, because as heterogeneous elements, which had only a temporary use, they constitute the very ferment, by which they themselves are carried off. Or we may compare them to some disease, which must work on humours, and be thrown out on the surface, in order to secure the patient from their future recurrence. (BL I, 57-58)

Here Coleridge's language produces a meaning insofar as it suggests a rather peculiar, biological understanding of how genius develops and how artistic faults correct themselves. Express this idea in different terms and a different idea takes its place.21

In each of these examples, I am drawing attention to the scientific language itself as the formative agent in Coleridge's pronouncements on literature. Hence, my position is opposite that of most critics who view the scientific language as a metaphor in a monistic system that merges different terminologies. Coleridge's monistic vision is undeniable, but the scientific discourse is clearly more than metaphoric—or at least metaphors and similes have a greater role and a more complicated function than most critics have observed in the past. If Coleridge's vision is monistic, his understanding is pluralistic.22

In a recent article Jonathan Culler makes a similar point about the connotative power and cultural significance of two of Coleridge's most important critical terms, allegory and symbol. Culler begins his analysis of Coleridge by describing the structural differences which distinguish an allegorical sign from a symbolic sign: "The allegorical sign, we might say, is arbitrary: the connection between signifier and signified is imposed by the mind or fancy, while the eye and imagination are aware primarily of the difference. The symbol, on the other hand, is a motivated sign, a synecdoche, in which the signifier is naturally connected to the signified." This distinction relates, in turn, to the opposition between mechanical and organic form, the allegory being identified with the mechanical and the symbol with the organic. We thus have here two fundamental tropes or codes, or "two ways of organizing the attribution of meaning," the allegorical and the symbolic. And according to Culler, a general doctrinal or cultural "shift in formal operations for the production of meaning" accounts for Coleridge's preference for the symbolic.23

21 Discussing Coleridge's use of the word "polarity," J. Isaacs makes this same point in "Coleridge's Critical Terminology," Essays and Studies (Oxford, 1936), XXI, 82. He notes: "this is not merely a loose employment of the normal use of the word. . . . The fact that this use is a subtle and thought-out transference of the term to the great central problem of multeity in unity, gives an emotional significance of the highest order to this otherwise cold technical term."

22 I have argued this point more fully, and have provided a heretical foundation for it — a foundation derived from Coleridge's views on reading, language, and understanding — in "Coleridge, the Reader: Language in a Combustible Mind." This article will appear in a forthcoming issue of Philological Quarterly (Winter 1980).

Culler, I believe, overstates this last point, for this shift in the operations for the production of meaning is less an undefined doctrinal shift than it is, first of all, a product of his contemporaries' scientific discourse and an organismic trope. That is, Coleridge's preference for the symbolic is, above all else, connected with scientific issues and scientific language of his day, especially with the new organicism whose emergence Culler describes in terms of scientific research of the period. Many other fields of knowledge, such as history, were undergoing similar changes in epistemology, but science was clearly providing the key terms. My point is this: formal operations in language do not change "generally," as Culler says, but alter because of changes in the operations of a specific discourse which, in turn, affect the formal operations in the discourses surrounding it. Such is the case here, and Culler, perhaps unwittingly, confirms this when he depends on the biological term "organism" to denote the linguistic shift in other discourses such as history.

Coleridge's 1816 distinction between allegory and symbol, one of his most famous critical definitions and tools, indicates the extent to which many of his literary maxims at this time derive their structure from scientific discourse. I have already shown how in a number of places his scientific language is transferred directly to a literary context, resulting in critical principles which have made Coleridge famous and infamous at once. In those examples, the scientific language provides definitions or codes explicitly meant to organize the attribution of meaning in literature, so that reading a poem as either allegorical or symbolic has important repercussions regarding how and what the poem means. Much less explicitly the scientific discourse controls much of the practical criticism of Biographia Literaria; and, though scientific language often has little bearing on Coleridge's descriptions and judgments of Wordsworth's poetry, just as often these critical interpretations are made by means of a scientific code or model which supplements the primary text and produces a kind of meaning one would be hard pressed to locate in Wordsworth's poetry. The features of the text which this scientific code selects for interpretation are naturally predetermined by the code itself, and a scientific language which has been arguing the priority of function over arrangement to a medical audience will accordingly be directed at the formal features of a poem.

So much has been written about Coleridge's formal criticism and his organic model that it is not necessary to rehash points that have become commonplaces. What is worth attention, though, are the elaborations on that trope which follow from Coleridge's more subtle thinking about science in 1815, and the way these elaborations manifest themselves in the practical criticism of Biographia Literaria. For instance, Coleridge's ground for differentiating poetry and prose, the first truly practical problem in the Biographia, immediately recalls the first issue of the medical controversy over mechanical structure vs. organic function:
A poem contains the same elements as a prose composition; the difference therefore must consist in a different combination of them, in consequence of a different object being proposed. According to the difference of the object will be the difference of the combination. It is possible, that the object may be merely to facilitate the recollection of any given facts or observations by artificial arrangement; and the composition will be a poem, merely because it is distinguished from prose by meter, or by rhyme, or by both conjointly. (BL II, 8)

In short, what differentiates poetry and prose is not mere arrangement of "elements," as the mechanistic scientists would argue, but the function of the two forms, the "object being proposed" by each.

The emphasis on function over arrangement informs the vast majority of critical judgments in *Biographia Literaria*; and, as Coleridge attempts to employ this formula in different and more subtle ways when analyzing poems, scientific tropes and biological descriptions more overtly prejudice the judgments. In fact, biological descriptions and connotations are so ubiquitous that the scientific world of plants and organisms merges with the literary world. Differentiating Wordsworth's and Coleridge's natural world, Abrams notes that the "nature" Coleridge "ultimately appeals to in art is basically a biological nature," and it "is astonishing how much of Coleridge's critical writing is couched in terms that are metaphorical for art and literal for plants. . . . Only let the vehicle of his metaphors come alive, and you see all the objects of criticism writhe surrealistically into plants or parts of plants, growing in tropical profusion."24 Indeed Coleridge's prefatory statement on Wordsworth's "Descriptive Sketches" is a description of an organic jungle:

seldom, if ever, was the emergence of an original genius above the literary horizon more evidently announced. In the form, style, and manner of the whole poem, and in the structure of particular lines and periods, there is an harshness and acerbity connected and combined with words and images all a-glow, which might recall those products of the vegetable world, where gorgeous blossoms rise out of the hard and thorny rind and shell, within which the rich fruit was elaborating. The language was not only peculiar and strong, but at times knotty and contorted, as by its own impatient strength. (BL I, 56; my emphasis)

Later, he lists as the third and fourth excellences of Wordsworth's poetry "the sinewy strength and originality of single lines and paragraphs. . . . the perfect truth of nature in his images and descriptions, as taken immediately from nature, and proving a long and genial intimacy with the very spirit which gives the physiognomic expression to all works of nature" (BL II, 121). And finally, "as a sort of allegory, or connected simile and metaphor of Wordsworth's intellect and genius," Coleridge quotes Bartram's *Travels*: "The soil is a deep, rich, dark mould, on a deep stratum

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of tenacious clay; and that on a foundation of rocks, which often break through both strata, lifting their back above the surface. The trees which chiefly grow here are the gigantic black oak; magnolia magni-flora; faïnus excelsior; platane; and a few stately tulip trees’” (BL II, 128-29). Three years after these statements Coleridge would call Shakespeare a “comparative anatomist” who “works from within by evolution and assimilation” and produces beautiful fruits, unlike Beaumont and Fletcher who “took from the ear and eye, unchecked by any intuition of an inward possibility, just as a man might fit together a quarter of an orange, a quarter of an apple, and the like of a lemon and of a pomegranate, and make it look like one round diverse colored fruit.”

Although Abrams hesitates to admit it and Coleridge himself backpedals by asking pardon for the terms borrowed from chemistry and botany, Coleridge clearly intended Wordsworth’s and Shakespeare’s poetry literally to come alive and be seen as a living organism. Poetic language can never actually have a “physiognomic expression,” which, however, Coleridge’s critical language can attribute to Wordsworth’s and Shakespeare’s poetry by using a biological language to connote and signify a biological referent. Abrams himself suggests this productive power when in The Mirror and the Lamp he explains how critical metaphors and analogies are often not simply illustrative but constitutive. This is certainly the case here where Coleridge’s scientific code reconstructs poetry as a living organism, a three-dimensional object, which functions in much the same way as his plants and animals and men in “Theory of Life.” Walter Pater, I believe, is more correct than most critics admit when he complains of Coleridge’s identifying the poem with an actual plant: in Biographia Literaria Coleridge certainly exaggerates the case this way. Coleridge may be, as critics have traditionally observed, concerned with the creative process, the subjective nature of poetry, but in the Biographia that process is objectified, presented as a product, by using a scientific language which transforms the forces of the process into forces of a product. The language is much more elusive in Biographia Literaria, but it is quite clear that the forces operative in a poem correlate directly with the three forces of nature: magnetism, electricity, and chemical affinity. There is, in other words, a six-part homology established between the world of biology and the world of poetry. The great value in transferring this three-part model from science to poetry is that in this way Coleridge could distinguish different operations in a poem while implicitly suggesting their unity on the evidence that, as in the biological example in “Theory of Life,” “the lower powers are assimilated, not merely employed—which presupposes homogeneity” (TL, 386).

Of the three powers which Coleridge describes in "Theory of Life," magnetism or polarity is the one he most frequently discusses. In "Theory of Life" he makes it clear that, as the most basic force in nature, magnetism is the first expression of the polarity principle; and in this state it is predominantly mechanical, "two equal forces acting in opposite directions" (BL I, 197). Barfield, without doubt the most lucid explicator of polarity, makes the crucial point that the mechanical law of polarity must be distinguished from the power of polarity; for if magnetism is an essentially mechanical law, it eventually becomes assimilated into a higher power which is essentially dynamic. In their most primitive form, before their conversion into a vital power, the poles of a magnet provide an object with fixity: the magnetic poles are "the primary constituent Powers."26 As Seth Watson observes in his introduction to "Theory of Life," magnetism thus becomes the "first and simplest differential act of Nature . . . the first step from indifference to difference, from formless homogeneity to independent existence" (TL, 360).

In a poem this rudimentary act of fixity and differentiation is described by the famous pairs which comprise all poems and which become objectified elements in the poem—"sameness with difference; of the general, with the concrete; the idea, with the image; the individual, with the representative; the sense of novelty and freshness, with old and familiar objects; a more than usual state of emotion, with more than usual order" (BL II, 12). These differentiate a poem, define it, and balance it, as it were, in a fixed position. Balance, in fact, is the key to the polar arrangement in a poem, just as it is in a magnet, for "in all pure phaenomena we behold only the copula, the balance or indifference of opposite energies."27 Accordingly, where Wordsworth’s feelings are "disproportionate to such knowledge and value of objects described" the stability of the poem is upset; and accusing Wordsworth of mental bombast is a criticism of misbalanced energies (BL II, 109). Likewise, Coleridge complains of metaphysical poets and some of his contemporaries who in different ways destroy the balance needed in a poem. "Our faulty elder poets sacrificed the passion and passionate flow of poetry to the subtleties of intellect, and to the starts of wit; the moderns to the glare and glitter of a perpetual, yet broken and heterogeneous imagery, or rather to an amphibious something, made up, half of image, and half of abstract meaning. The one sacrificed the heart to the head; the other both heart and head to point and drapery" (BL I, 15).

Because Coleridge himself rarely dissected his polarity principle and only in "Theory of Life" and in his long letter to Tulk in 1817 made a sustained attempt to show clearly how it relates to the magnetic law as op-

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26 Cited in Owen Barfield, What Coleridge Thought (Middleton, Conn., 1971), 32.

27 Collected Letters, IV, 760.
posed to the electrical power, critics often confuse the polarity of magnetism and the polarity of electricity. But in order to fully understand the intricacies of the criticism in *Biographia Literaria*, and especially the role of imagination, one must be aware of these finer distinctions. Again, polarity is the first law of nature, and magnetism's property of attraction and repulsion is the first manifestation of that law. But, the two poles of magnetism generate a second force, electricity, which simultaneously vitalizes the fixed magnetic field and stands as the force opposite to magnetism. (Magnetism and electricity become intersecting axes, each axis having two poles.) In Coleridge's evolutionary scheme, the magnetic force manifests itself most obviously in inorganic metals, and later, when the electrical force becomes predominant, vegetables and insects appear. Thus, from the conjunction of electricity and magnetism, in various proportions, the different forms of life are made. In the arrangement, represented by the magnetic poles, "life subsists"; in their strife, represented by electricity, "it [life] consists" (TL, 393).

The addition of this life-producing power to Coleridge's scientific scheme should never be underestimated. Seth Watson went so far as to say that electricity was "the foundation of life" for Coleridge. This is of course an exaggeration, a point Coleridge made abundantly clear in "Theory of Life" where electricity functions only as a primary manifestation of one power in life. Yet, electricity did provide an illustration and scientific solution to a scientific scheme that associates magnetism with lifeless arrangement. A "new light was struck by the discovery of electricity, and in every sense of the word, . . . it may be affirmed to have electrified the whole frame of natural philosophy" (TL, 375). Electricity was a power that could convert the static arrangement of the magnetic field into a space of vital action and movement. Magnetism represented the law of polarity, electricity the vitalization or operation of that law. If magnetism demonstrated the law of polarity in inorganic matter, electricity could assimilate magnetism to reveal the one power which brings polarity to life in organic matter. The principle of fixity thus fuses with the principle of dynamic motion; or, as he phrases it in a description of artistic beauty, "confining form" unites with the "electrical flashes" of "free life" ("Genial Criticism," 235).

In *Biographia Literaria* the imagination is an objectified power within the poem and, as such, it is the counterpart to the electrical power in nature described in "Theory of Life." The scientific language with which it is described is indicative of this correspondence: "The primary imagination I hold to be the **living Power** and prime **Agent** of all human Perception. . . . The secondary Imagination I consider as an echo of the former, co-existing with the conscious will, yet still as identical with the primary in the **kind of its agency**, and differing only in degree, and in

the mode of its operation. It dissolves, diffuses, and dissipates, in order to recreate. . . . It is essentially vital, even as objects (as objects) are essentially fixed and dead” (BL I, 202; my emphasis). “This power, first put in action by the will and understanding, and retained under their irremissive, though gentle and unnoticed control . . . reveals itself in the balance or reconciliation of opposite or discordant qualities” (BL II, 12). Here the language is that of a scientific experiment in which an electrical force, the imagination, galvanizes different elements that are brought under its power: working together, the will and understanding act as a conductor that organizes a field of “opposite and discordant qualities” which the fusing power of the imagination vitalizes in a manner strikingly similar to the operation of the electrical force found in nature. Shakespeare's work is thus a “growth, evolution” whereby “each line, each word almost, begets the following—and the will of the writer is an interfusion, a continuous agency, no series of separate acts.” The conducting will unites with the fusing imagination to become “an interfusion, a continuous agency” of power and control that at once organizes and activates the multiple elements of a wide and varied experience.

The clearest use of electricity in practical criticism is found in Coleridge's analysis of meter. He begins by describing the origins of meter, tracing it “to the balance of the mind effected by the spontaneous effort which strives to hold in check the workings of passion. It might be easily explained likewise in what manner this salutary antagonism is assisted by the very state, which it counteracts; and how this balance of antagonists becomes organized into meter . . . by a supervening act of the will and judgment” (BL II, 50). Meter, that is, is generated out of a polarity of passion and the controlling effort of the mind which, like the magnetic field, together form a balance of antagonists between which the will intervenes like a conductor. Metrical restraint is then balanced with a language of passion (“as every passion has its proper pulse, so it will likewise have its characteristic mode of expression” (BL II, 56). In short, mental restraint and passion balance in an original act of the mind that results in meter; to create poetry, this metrical framework is in turn bound and balanced with a special, emotional language: “meter therefore having been connected with poetry most often and by a peculiar fitness, whatever else is combined with meter must, though it not be essentially poetic, have nevertheless some property in common with poetry, as an intermedium of affinity, a sort (if I may dare borrow a well-known phrase from technical chemistry) of mordaunt between it and the super-added meter” (BL II, 55). The suggestion here—which could be made only through the scientific language in which it is couched—is that meter can be either an artificial or natural part of a poem in that “an intermedium of affinity” should naturally bind meter to the language of a poem. And although

29 Miscellaneous Criticism, 88-9.
Coleridge never explicitly explains it in terms of the imagination, it seems clear that what activates this affinity is the imagination that he consistently describes, with similar scientific language, as the power which vitalizes and unites contrary elements. Where Coleridge fails to discover this balance and conjunction between the language of the poetry and the meter, in Wordsworth’s “Anecdote for Fathers,” “Simon Lee,” “Alice Fell,” “The Beggars,” and “The Sailor’s Mother,” he rightly claims then that these poems “would have been delightful . . . in prose, told and managed, as by Mr. Wordsworth they would have been, in a moral essay, or pedestrian tour” (BL II, 53). About “The Sailor’s Mother” specifically, he quotes three stanzas and queries “whether in the meter itself he found a sufficient reason for their being written metrically?” (BL II, 54), tacitly referring here, I believe, to the model he has established whereby there must be a vitalized affinity between the meter and the language of the poem. As the two are joined but not imaginatively united in the Wordsworth poem, the meter sits oddly on the language of the poem just as the leaves of one flower would look strange if unnaturally grafted on the stem of another species.

In “Theory of Life” Coleridge discusses magnetism and electricity also in terms of “progressive individuation” and this concept too bears on evaluations and judgments in Biographia Literaria. In nature, “the unceasing polarity of life” represented by magnetism, Coleridge writes, is “the form of its progress, and its tendency to progressive individuation” is “the law of its direction” (TL, 407). Here magnetic polarity describes the form, and what I have associated with the imagination (in art) and the electrical force (in nature), namely the process within the form, now becomes “the tendency to progressive individuation.” Progressive individuation embraces two counteracting tendencies in nature, “that of detachment from the universal life . . . and that of attachment or reduction into it” (TL, 389), both of which reappear in the Biographia and the related essays in the phrase “multeity in unity,” whose definition almost always approximates the definition of progressive individuation. Commenting on the pleasure of art, Coleridge says it “consists in the identity of two opposite elements, that is to say—sameness and variety. . . . In order to derive pleasure from the occupation of the mind, the principle of unity must always be present, so that in the midst of the multeity the centripetal force be never suspended, nor the sense be fatigued by the predominance of the centrifugal force. This unity in multeity I have elsewhere stated as the principle of beauty” (BL II, 262). And, early in Biographia Literaria, Coleridge lays the groundwork for differentiating kinds of creative minds by distinguishing the centrifugal and centripetal forces in the mind: “The intelligence in the one tends to objectize itself, and in the other to know itself in the object” (BL I, 188).

Whether Coleridge is talking about the creative process of art or the forces of nature, the significance of the language remains the same in
each of these passages. As the progressive individuation manifested in the electrical force unites and vitalizes two opposite movements in the life process, in poetry the imagination performs the same task; and, though Coleridge never bluntly states this, he values a work of art most when its centrifugal-centripetal make-up resembles man, the organism in whom the two forces reach their maximum strength and scope, in whom there is the "highest realization and reconciliation of both . . . tendencies, that of most perfect detachment and the greatest possible union" (TL, 422).

Accordingly, if the paramount, most admirable organism is the one that manifests the most detachment with the greatest attachment, in literature most value will be awarded to the work that manifests the greatest individuality with the greatest universality. The works of Shakespeare and Milton are Coleridge's examples here. Shakespeare's plays not only have a universal scope and variety but they also contain a proportionate degree of judgment and unity; "in Shakespeare the play is syngensia [a flower species]—each indeed has a life of its own and is an individuum of itself, but yet an organ to the whole." Conversely, while always retaining the stamp of the individual man, the poems of Milton contain the greatest of eternal truths. Wordsworth too is praised as "individualized"; but his characters, unlike Shakespeare's, are faulted as overly peculiar and "incongruous," "for amid the strongest individuation, the character must still remain representative" (BL II, 106-7). Finally, the great philosophical poem that Coleridge expected from Wordsworth would doubtless have been great because, like man, the scope of its vision would have been matched by the strength of its individuality.

I have discussed progressive individuation in its relation to the second power in Coleridge's biological scheme, electricity in nature and the imagination in poetry, since Coleridge most usually associates it with these two phenomena. Yet, as all three powers are bound together in a single organism, so the tendency to individuate cannot be separated from the third power, chemical affinity, which corresponds to the intellectual energy and reason behind a poem. As Coleridge demonstrates throughout "Theory of Life," chemical affinity adds the dimension of depth to an organism when it unites with length and breadth, magnetism and electricity, and Coleridge equates this chemical affinity with sensibility. He describes this third dimension best in a manuscript note:

call that is outside is comprized in length and surface—what remains must therefore be inside—but again, the sole definition of matter is that which fills space —now it is with length, breadth, and length relative to breadth that space is filled. In other words, Space has relation only to the outside. Depth must therefore be that by not with which space is filled . . . it must be that which causes it to be filled, and is therefore the true substance. Depth therefore cannot be

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80 I. A. Richards, another scientific critic, inherited this notion from Coleridge.
81 Miscellaneous Criticism, 95.
an attribute of matter, which (i.e. Length + Breadth or Extension) is itself a mere abstraction, an ens rationis; but it must be a Power, the essence of which is inwardness, outwardness being its effect and mode of manifesting itself.\footnote{Cited in Barfield, 202.}

Illustrating inwardness, “the true substance,” in a poem will always be a perilous task for a critic; but nonetheless Coleridge attempts it, if somewhat coyly, by locating a particular kind of sensibility in a poem. He praises the “atmosphere and depth and height” of Wordsworth’s poetic world; and he characterizes the fifth of Wordsworth’s excellences, a meditative pathos, as “a union of deep and subtle thought with sensibility” (\textit{BL II}, 122). For Coleridge this is an important and positive criticism of Wordsworth, and it correlates neatly with the third dimension of an organism—depth, sensibility, and inwardness of thought. An elusive and protean presence but one which most readers are aware of and recognize in a poem, “thought” is perhaps as specific as Coleridge can be about a third dimensional property in a poem. But how to show it working in a poem is extremely difficult, and this difficulty could account for the comparatively little Coleridge says about depth in a poem. As a power in the poem it dwells in the realm of Coleridge’s reason and philosophical “Ideas,” clearly distinguished from the imaginative power, so that, besides imagination, Shakespeare possesses another poetic power “without which the former could scarce exist in a high degree,” namely, “Depth and Energy of Thought.” In an 1818 lecture, Coleridge describes the conjunction of these two powers, imaginative force and depth, this way: Shakespeare “worked in the spirit of nature, by evolving the germ within the imaginative power according to an idea.” For, “No man was ever yet a great poet, without being at the same time a profound philosopher. . . . In Shakespeare’s poems the creative power and the intellectual energy wrestle as in a war embrace” (\textit{BL II}, 19). The thinker, as well as the imaginative artist, adds a dimension to the poem, so that balance, imagination, and energy of thought unite in a poem, like electricity, magnetism, and chemical affinity in the life process, to create an object that is as complicated and mysterious as the highest organism in nature.

This ultimately mysterious nature of art and life Coleridge never forgets, no matter how analytical he becomes, and so his three dimensional model should never be confused with poetic truth and life itself. If the constituent forces of life are the power of length (magnetism), the power of surface (electricity), and the power of depth (chemical affinity), “Life itself is neither of these separately, but the copula of all three” (\textit{TL}, 430). Indeed the powers of life may manifest themselves in concrete comprehensible forms, yet “visible surface and power of any kind, much more the power of life, are ideas which the forms of human understanding make it impossible to identify” (\textit{TL}, 378). Likewise, the living truth of a poem
exists beyond the components Coleridge chooses to isolate for criticism, and a critic's most egregious mistake would be to imagine Wordsworth's or any author's poetry simple and containable.

What Coleridge and other literary critics can do is to understand and explain life and poetry with language. Precisely because of its linguistic nature, this act of understanding will always be an act of commitment and choice—a choice of how he will understand and, subsequently, what he will understand. Scientific language does not accidentally or inadvertently appear in *Biographia Literaria*; it is the controlling discourse that Coleridge chooses for good reasons and with full knowledge of its implications. He recognizes the power of connotations; he recognizes the way different tropes and metaphors could not only organize but produce meanings. He writes about a "fusing power" in a poem entirely conscious of its commensurability with the "fusing power" of electricity. And, describing "depth" in a poem or its centripetal-centrifugal balance, Coleridge consciously creates a meaning, a biological meaning, rather than extracting that meaning from a poem. In 1815 the language of science was gaining an authority that could only diminish the authority of other languages: due to the purported objectivity of scientific practice and discourse, scientific statements simply had more validity than poetic or theological statements. For Coleridge, the way to counter this trend was to make a poem *mean* scientifically, to show that scientific truths are no more confined to science than scientific discourse is the sole property of the laboratory worker. If poetry should never pretend to be science, poetry should never cower before the language of science. Coleridge's scientific poetics and biological tropes are an important attempt to show that poetry is at least as challenging, mysterious, and intellectually rigorous as the best of modern science.

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