
The title of this volume suggests a literary approach to matters of science, and in this expectation the reader is not disappointed. The author fully intended to probe concepts of literary value and personal biography for messages connecting aesthetic theory and science. In this volume the symbolic value of literary language becomes concrete in the details of science. The book brings us a long way in resolving the tension between ambiguity and specificity of two different kinds of discourse, a tension as real today as it was for the writers and thinkers who are the object of this study. Many of them ultimately accepted the inadequacy of language as a fact of life, which led them in pursuit of the arts as a means to discovery in science. This includes most of the writers examined in this study, particularly Goethe, whose life (1749-1832) spans the chronology of scientific investigation in biology that culminated in Darwin's "Origin of Species" (p. 526). In the "Prologue," Richards explains that the title of the book first of all means "life as experienced by the individuals whom I discuss," and, secondly, that the way they lived their lives led them to "understand animate nature in a Romantic mode" (xvii). This mode, he explains, "replaced the concept of mechanism with that of the organic, elevating it to the chief principle for interpreting nature" (xvii). He particularly wants to show "how the concepts of self—along with aesthetic and moral considerations—all tempered by personal relationships—gave complementary shape to biological representation" (xviii). Richards proposes to run these themes through the first three parts to the end of the book, where they will "all flow to a conclusion that will be realized in the epilogue, which describes the fundamental ways in which Romantic thought gave shape to Darwin's conceptions of nature and evolution" (xix), a conclusion in keeping with the author's view that "the central currents of nineteenth-century biology had their origins in the Romantic movement" (xix). By weight and length the book is about German romanticism, while in essence it is about the author's conviction that the way these people lived influenced their view of nature, which in turn influenced Darwin's theory of evolution. The connecting link between these two massive movements in nineteenth-century intellectual history is in Darwin's reading of Alexander von Humboldt.

The bridge that the author seeks to construct between the German romantic philosophers and writers in Western mechanical philosophy is a serious project that looks deeply into the "German mind of the nineteenth century" (Hermann Glaser, The German Mind of the Nineteenth Century, 1981). The connection between these two different habits of the mind is not new, but research on the topic remains rare, with the exception of the notable efforts by Alexander Gode-von-Aesch (Natural Science in German Romanticism, 1941) and more recently Timothy Lenoir (The Strategy of Life, Teleology and Mechanics in Nineteenth-Century German Biology, 1989). Scholars from literary and scientific history share the resource that Novalis found in mysticism, that Fichte felt in patriotism, that the Schlegels saw in aesthetics, but Richards presents these writers in a different way; not in chronological order, but rather as parallel thoughts in a movement as a whole. In parts one and two the reader encounters the ideas of romanticism before getting the specifics of Goethe's science. Perhaps this structure was designed to put Goethe's "Scientific Revolution" at the center of the volume where it would be understood better in the context of romantic writers that followed him and claimed his inspiration. There are clearly advantages to this sequence of materials, but it does leave the reader without an understanding of Goethe's debates with the romantics on their extreme idealism at about the same time he began his polemics with followers of Newton on excessive mathematics in physics. For this reason it would seem that part three of the book on "Goethe's scientific revolution," which is grounded in his discovery of morphology, might have preceded the parts on the
romanticizing of nature that attracted both poets and scientists to his view of nature. While the significance of Goethe’s discovery of morphology lies in the integration of science and art, as Richards proposes, to ignore the polemics against excessive forms of abstraction would be to miss the crux of Goethe’s way of thinking. Indeed, even the early theories of Blumenbach on the forces of formation (1781) seemed to Goethe laden with a language too abstract to capture the vital dynamics of organic life. In Goethe’s view, we have only the impact of development in forms and shapes before us, and as a visual thinker he saw the inadequacy of presentations that relied on linguistic terms, which brought him to the arts as a medium of morphology. For Goethe morphology was both a tool of knowledge and a medium of communication. And he left no theoretical essay on morphology, only a collection of examples later organized into notebooks. What he did was act out morphology in art, while the romantic philosophers articulated and extended it in other environments.

It is a strange twist of historiography that we would be concerned about the thoughts of nineteenth-century German romantics in the midst of debates today about the shared influence of biology and environment on human behavior. It is strange because these German romantic writers were generally deemed secondary and marginal to the progress in biology that culminated in Darwin. Especially historians of science were confused by the natural philosophy of these writers and largely ignored their search for holistic explanations of the development of human life. While they were recognized for accomplishments in speculative philosophy, their technical language about form and formation in organic life did not conform sufficiently to the mechanics of natural selection. So by this measure, studies in morphology remained not so much a “backwater” (xix) as a curiosity with possible value for a poetics of nature. And now, after a century and a half of scholarship on the explanatory power of the theory of evolution, their concepts of aesthetics and values are being revisited for moral support of a mechanical view of human nature, a view they rejected in the first place. In the meantime biology has changed. It has moved from themes of evolutionary differentiation of the species to those of molecular building blocks as the genetic codes of behavior. A full understanding of this change would require a review of the extensive literature that has put “Darwin on trial” by looking at “the biochemical challenge to evolution,” along with old issues in the nature-nurture tension that guide explanations of human behavior. It is not a stated goal of the author to critique Darwin’s theory of evolution, but it does seem reasonable that a re-examination of the basic mechanics of Darwin’s theory of evolution might well begin with the German natural philosophers. This anachronism in the history of science is unique, because the contributions of the romantics lie not so much in their discovery of quantifiable data as in the way they controlled the facts of biological life with tools of the arts. Their terminology included primarily the language of morphology, the study of form, concepts of unity and diversity, and all the other literary terms that help us define the context and environment that shape the values and behavior of individuals.

In the present study we are asked to take a new look at Darwin beyond his discovery of the mechanics of the survival of the fittest, to see him as guided by the feelings for nature framed by the sentiments of the romantics. The book is about the German romantics, at least five hundred pages of it are, but it culminates in forty pages that link Darwin to the romantics through the writings of Alexander von Humboldt. In this conclusion we arrive at the thesis that Darwin drew on the affective tools of the German romantics who attempted to connect the vital soul of organic life with its mechanical functions. The book is thus about a possible linkage between Darwin’s theory of natural selection and the German writers of a prior age who had a different agenda, writers who defined themselves by rejecting interpretations of nature inspired by mathematics, including the mechanical philosophy of Descartes and a century of Newtonian physics. The author argues
that Darwin learned from such writers concerned with the context of life, the environment of biological development, which they framed in questions about the tension between holism and individualism, even though he engaged that kind of dialogue only in a limited sort of way.

Richards reveals the advantages to the discourse of German romantics for dealing with issues of holism, context, and environment. Yet writers in this tradition had their own problems and in the end got lost in a tangle of binary distinctions like the “I” and the “not-I” along with other false dichotomies that look all too fabricated and consequently drew satire from Goethe and Schiller. In this sense the “Epilogue” of the book might serve also as an apology for the false dichotomy in the polarized nature-nurture theories on human behavior. In the century after Darwin, molecular biology emerged to raise questions about the explanatory value of Darwin’s theory of evolution. At the same time moral philosophy has returned in the form of environmentalism and has forced issues of values and ethics into questions about the best way to give love and care to our fellow human beings and our natural habitat. The natural philosophy that first attempted to rescue human beings from the mechanics of science now has been extended to all organic life from the spotted owls of our forests to valued bacteria in our soil. These were the considerations of the German romantics, some of whom, like the Humboldt brothers, were able to transfer their philosophy into educational policies, but most of whom remained curiosities of intellectual history.

One way to evaluate the present book is to ask whether the German romantics would have supported the moral vision of Darwin, who as a fellow human being undoubtedly had feelings of community with nature. But that was not Darwin’s project, and the question is whether we can have him in both the mechanical and moral philosophers’ camps. Perhaps we can today, but in his time it would have been very unlikely, otherwise the glory of evolutionary theory would have gone to Alfred Russel Wallace (1823–1913), for “Darwin felt something akin to despair over his friend’s abandonment of natural selection in the case of man” (p. 549). In this sense the real story might be the connection between German romantic philosophers and Wallace! Indeed, here we might find a closer version of the integrated biologist proposed by Richards: the archetypal Werther, “in his blue frock coat and yellow vest, reading his Homer and suffering unrequited love, albeit in a jungle clearing,” and the archetypal Darwin, “that unflinching mechanist who deprived nature of her soul of loveliness” (p. 554). A master of the art and mechanics of life may emerge one day, but it does not seem that those of the past like the German romantics can be more or less than a victim of their lives, just as Darwin too may be the last of his species.

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