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Goethe Yearbook



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Goethe Yearbook

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Edited by
Adrian Daub and Elisabeth Krimmer

With Birgit Tautz,
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Special Section on Goethe and Environmentalism

LUKE FISCHER AND DALIA NASSAR

Introduction: Goethe and Environmentalism

In Memoriam

Martin Harrison (1949–2014), poet and critic

GLEICH UND GLEICH

Ein Blumenglöckchen
Vom Boden hervor
War früh gesprosset
In lieblichem Flor;
Da kam ein Bienchen
Und naschte fein:—
Die müssen wohl beide
Für einander sein. (Goethe, MA 9:105)

LIKE AND LIKE

A little bellflower
Forth from the ground
Had sprung up early
In charming full bloom;
There came a little bee
And finely nibbled:—
They must both surely
Be made for one another.

Goethe and the Onset of the Anthropocene

OVER A DECADE AGO, the scientists Paul Crutzen and Eugene Stoermer applied the term “Anthropocene” to describe the current geological era, which they regard as the first era in which large-scale transformations of the earth are driven by human impacts.¹ As Steffen et al. put it in a more recent article, human influence “has become so large and active that it now rivals some of the great forces of Nature in its impact on the functioning of the Earth system.” In addition to influencing the carbon cycle, they explain, “humans are (i) significantly altering several other biogeochemical, or element cycles . . .; (ii) strongly modifying the terrestrial water cycle . . ., altering the water vapour flow from the land to the atmosphere; and (iii) likely driving the sixth major extinction event in Earth history.”² The great task of the future, they agree, will have to involve major changes in the way we think about and behave toward the natural world; it will require us to develop new strategies for sustainability that involve intensive research, and, as Crutzen and Stoermer put it, “wise application” of this research (18).

Crutzen and Stoermer as well as Steffen et al. date the beginning of the Anthropocene to 1800, coinciding with the rise of industry and hence of energy-dependent processes, which significantly increased the human imprint on the environment. Whereas in 1750 the Industrial Revolution had barely begun, by 1850 England and much of Western Europe had been completely transformed. The year 1800 thus marks an important turning point

and a fundamental reorientation in the history of the earth and humanity. As Steffen et al. write, the beginning of the Anthropocene is “one of the great transitions . . . in the development of the human enterprise” (847).

The time around 1800 was also one of the richest periods in European cultural history, a period that is often identified with Goethe and his influence. Importantly, the *Goethezeit* was the source of some of the most intense and significant considerations of the natural world and the human place within it. It was, in short, not only a time of scientific discovery and technological advances but also a time of serious philosophical and literary engagement with the natural world—an engagement that was, more often than not, critical of mechanistic science and technological manipulations of nature. This coincidence is not entirely surprising. Rather, as four authors from this special section of the *Goethe Yearbook* remark, during the onset of the Anthropocene, writers, philosophers, and artists turned a critical eye on the dominant views of the natural world and the human relationship to nature. Goethe was at the forefront of this turn. As Ryan Feigenbaum suggestively puts it in his contribution on Goethe’s nonanthropocentrism: “In the same moments, then, in which the human relation to nature became formidable enough to presage a new geological epoch, one can also find an antidote of sorts: Goethe’s criticism of that very relation and an alternative to it.”

Goethe’s critique of the sciences of his time, his contrasting qualitative approach to the study of nature, along with his endeavor to bridge the ever-widening gap between literary and scientific approaches to nature, make him a particularly relevant thinker for our time. While Goethe’s methodological views, as well as his practice as a poet-scientist, were criticized in his own time,³ from our current perspective they appear to be significant and even prescient: a growing number of scientists and humanists have come to realize that the only way to seriously address the environmental crisis is to join forces.⁴ Goethe’s literary and scientific writings, and his practice as a poet-scientist, can give us important insights into what such a humanistic-scientific approach to nature might look like and how it can be further developed, and can ultimately incite us to think more deeply about the role of the humanities in addressing the environmental crisis.

The Humanities and the Environment

Over the last two decades, it has become increasingly apparent that the environmental crisis is not simply a crisis of nature but also, and even more fundamentally, a cultural crisis—that is, a crisis of the way in which we understand and portray the natural world and our place within it.⁵ Thus, any serious response to the manifold and urgent environmental problems must involve critical and thorough examinations of the thought patterns and premises that have led to the crisis, including an interrogation of the natural sciences. The humanities, therefore, can no longer stand apart from either the natural world or the natural sciences. Rather, they must directly engage with natural phenomena, both by analyzing diverse representations of the environment and by challenging current epistemological frameworks and

ontological assumptions regarding nature and our relation to it (which result in environmentally destructive actions).

One of the central imperatives of the environmental humanities is thus to bridge and remedy the unfortunate divide between the “two cultures” (as C. P. Snow famously put it) of the natural sciences and the humanities, which has grown ever wider subsequent to the *Goethezeit*. Over the last two centuries, literary scholarship and philosophy have increasingly narrowed their sphere of significance and influence and abandoned inquiry into nature to the natural sciences. Most recently, this is particularly evident in the postmodern concern with texts and textuality. Although some aspects of postmodern thought might be aptly described as posthumanist, when viewed through the lens of environmental questions, the postmodern project mostly appears as humanist and anthropocentric.⁶ Its concern with the linguistic construction of “reality,” and what might be called its linguistic solipsism, is ultimately a focus on human language that neglects the “other-than-human world.”

In the fields of environmental philosophy and ecocriticism, much consideration has been given to reviving “nature” as a theme of inquiry and to the biosphere as an extratextual reality that is nevertheless intertwined with textual construction.⁷ In these attempts to bridge the humanities and natural sciences, the science of ecology has been particularly significant both in its specific scientific scope and as a model and metaphor for the interconnectiveness of all beings.

In the 1970s, environmental ethics developed as a field of inquiry concerned with, on the one hand, critiquing anthropocentric theories and, on the other, developing nonanthropocentric (or weak anthropocentric) ethics, through, for instance, the notion of intrinsic value or the view that rights extend beyond the human realm.⁸ Since then, however, philosophical discussions of the environmental crisis have moved beyond solely moral concerns.⁹ Philosophers have become increasingly interested in the epistemological and ontological foundations of the environmental crisis, arguing that the ethical or moral concerns of environmental ethics cannot be separated from ontological and epistemological questions. This means that philosophers must critically consider dominant understandings of nature (e.g., scientific assumptions and methods)¹⁰ and develop epistemologies and ontologies of nature—that is, a *philosophy* of nature—that are not restricted to the assumptions and aims of modern science.¹¹

Similarly, ecocriticism and the environmental humanities in general approach the environmental crisis with the premise that any solution can be achieved only if we bridge the divide between nature and culture, the natural and the human sciences. This means, as Kate Rigby puts it, humanists must begin to take account of “the world beyond the page.”¹² In the case of ecocriticism, this has led to a break with the textual internalism of postmodern criticism (while maintaining some of the key insights of the latter) and to the consideration of texts in light of their engagements with and thematizations of the natural, or more-than-human, world. Ecocriticism also complements and supplements other sociopolitical and ethical readings of literature. As Cheryl Glotfelty states in her 1996 introduction to ecocriticism: “Just as feminist criticism examines language and literature

from a gender-conscious perspective, and Marxist criticism brings an awareness of modes of production and economic class to its reading of texts, ecocriticism takes an earth-centered approach to literary studies" (xvi). Moreover, ecofeminist readings and green-left criticism reveal interconnections between gender and nature and between social injustice and the exploitation of nature.

Jonathan Bate's landmark study, *Romantic Ecology* (1991), is a case in point. By arguing that literary criticism must politicize itself in a new way, and foregrounding the pastoral in Wordsworth's poetry, Bate at once highlights the need for a "green" revolution in literary criticism and recasts the Romantic valorization of nature.¹³ In this way, to quote Rigby again, Bate reorients the very manner in which Wordsworth (and other Romantics) is read, such that he is regarded as part of a "tradition of environmental consciousness, according to which human wellbeing is understood to be coordinate with the ecological health of the land" ("Ecocriticism"). Similarly, Lawrence Buell's *Environmental Imagination* (1995) reads a number of canonical texts—with special attention to Henry David Thoreau—in their environmental context or in relation to the lived experience of the environment. As Buell explains, his aim is to focus "on the recuperation of natural objects and the relation between outer and inner landscapes as primary projects" of a text.¹⁴

However, the ecocritical project has not only sought to reclaim key authors from the literary canon by offering green readings of their works. In addition, ecocriticism also seeks to examine the very concepts that we have inherited—our conceptual apparatus, after all, is not neutral, and the environmental crisis cannot be dissociated from the very ways in which we think and conceptualize the more-than-human world. Thus, just as environmental ethics has sought to expose and assess the anthropocentric character of various ethical traditions, and environmental philosophy offers challenges to epistemological and ontological assumptions about the natural world, so ecocriticism and ecocritical theory have aimed to examine key conceptual tendencies in both literary and scientific writings.¹⁵ Timothy Morton's critique of the idea of "nature" is part of a general critical strain within ecocriticism and the environmental humanities, which, as Axel Goodbody puts it, aims to "draw attention to ideological subtexts, psychological displacements and unconscious dimensions, expose the layers of mediation by literary conventions in genres and individual texts, and elucidate the use of intertextual reference to 'supercharge' landscapes with cultural value" (27).¹⁶

Romanticism and the Environmental Humanities

It is not surprising that some of the first major works in ecocriticism were revaluations of Romantic authors and texts.¹⁷ Although in these works the terms "Romantic" and "Romanticism" are used to refer to certain authors or groups, we use them, in contrast, to designate an extended family of thinkers around 1800 who were inspired by the same questions and sought to overcome similar challenges.¹⁸ The questions and challenges of Romanticism are

intimately connected to the increasing pressures placed on the natural world by industrialization in Europe around 1800. Thus, Romanticism—we suggest—always already implies a protoenvironmentalism, and the Romantics have been rightly regarded as the first ecologists. Furthermore, although Goethe is not usually considered a Romantic in the narrower sense of the term, in this wider sense he can be regarded as such.¹⁹

Nature was both an explicit and an implicit theme in Romantic poetry, fiction, and nonfiction; in some instances, the integrity of organisms was regarded as exemplary of the principles of artistic form, and thus strong links were established between natural beauty and artistic beauty.²⁰ Furthermore, the Romantics argued that human cognition must be understood on the model of natural organization, and they maintained that the poetic imagination is an ideal manifestation of natural forces. In contrast to both their predecessors and their successors, the Romantics did not regard nature and culture as opposed or separate realms; nor did they conceive of beauty and morality as distinct from natural forces.²¹ Rather, they offered a conception of nature and culture as continuous and argued that the very same forces that underlie natural organisms are also at work in artistic creation and in moral acts.

Importantly, Romanticism sought to move beyond precisely the same disciplinary boundaries that the environmental humanities are seeking to transcend today. As Friedrich Schlegel famously put it in *Athenäum* Fragment 586, “Der romantische Imperativ fordert die Mischung aller Dichtarten. All Natur und Wissenschaft soll Kunst werden—Kunst soll Natur werden und Wissenschaft. Imperativ: die Poesie soll sittlich und die Sittlichkeit soll poetisch sein” (The Romantic imperative demands the mixing of all genres. All nature and science should become art—[and all] art should become nature and science. Imperative: Poetry should become ethical and ethics should become poetic).²² Although Schlegel himself was not a practicing scientist, Novalis and Goethe were both poets and scientists, and Schelling took a serious interest in the natural sciences and attempted to integrate the findings of empirical research into his philosophy of nature.²³

However, despite the great interest in Romanticism on the part of ecocritics, environmental philosophers have not engaged with Romantic views of nature or accounts of science to the same extent. Thus, while a number of ecophilosophers have argued that philosophers should no longer accept scientific conceptions of nature as adequate but rather offer alternative *philosophies* of nature, they have paid little attention to Romantic *Naturphilosophie*, or to the Romantic engagements with the sciences of their time.

Furthermore, and in spite of the fruitful dialogue that contemporary ecocritics have had with Romantic thought, some scholars worry that Romanticism might harbor notions that are anathema to the environmental agenda.²⁴ Any encounter with Romanticism must therefore be cautious, or as Gary Harrison puts it, “as people attempt to recuperate and realize within their contemporary ecological discourses the constructive, ecocentric ideals of romanticism, they must keep sight of those anthropocentric tendencies inherent in romantic nature philosophy that would simply reaffirm human claims to superiority over nature.”²⁵

In addition, the ecocritical reception of Romanticism, especially in the Anglophone context, has been focused almost exclusively on the British or American traditions. With the exception of Kate Rigby's *Topographies of the Sacred* (2004), which considers the notion of place in "European romanticism," no English-language monograph exists today that offers an environmental evaluation of German Romantic thought. The same holds for Goethe. With the exception of significant essays by Kate Rigby, Heather I. Sullivan, and Axel Goodbody, among a few others,²⁶ Goethe's environmental legacy and his potential contributions to current debates remain, in the Anglophone context, underexplored.²⁷

The lack of interest in the German tradition in general, and in Goethe in particular, is unfortunate for a number of reasons. The German Romantics preceded and in some ways significantly informed both the British and the American traditions (Emerson and Thoreau, for instance). Furthermore, they developed distinctive conceptions of nature that cannot be wholly identified with the views espoused by either their British or their American counterparts. As Bate has noted, the British and Americans each developed their own account of nature: while the Americans were concerned with the vastness of nature and emphasized the idea of wilderness, the British were interested in specific places and the ways in which these places can affect or vitalize the human spirit. In contrast to both, we regard the German Romantic tradition as concerned with, above all, the *relation* between nature and culture, between natural and cultural products and productions, and with understanding the ways in which the two can enhance or destroy one another.²⁸

This emphasis on the relation between nature and culture makes the German Romantics some of the most effective and relevant interlocutors for our contemporary situation. After all, as noted, the environmental crisis is also a cultural crisis, such that any account of nature must also be an account of culture, and any description of the natural world must concern itself with the ways in which nature is presented and distinguished from culture.

Furthermore, the philosophical sophistication of German Romanticism generally surpasses that of English and American Romanticism (within British Romanticism, Coleridge is a significant exception). As recent philosophical work on German Romanticism has revealed, Novalis, Schlegel, and Goethe were all deeply immersed in the philosophical questions of their time.²⁹ Thus, an examination of the philosophical foundations of the Romantic project can yield invaluable insights into the assumptions of both the Romantic tradition and contemporary environmental thought and illustrate the ways in which these assumptions may or may not furnish an ideal for our relationship to the natural world.

The aim of this special section of the *Goethe Yearbook* is to address this lacuna in the literature by focusing on the German Romantic thinker whose work we consider to be most relevant. Goethe's life and work exemplify the multidisciplinary aims of the environmental humanities, and his attempt to bridge the divide between nature and culture, between literature and science, with great sensitivity and philosophical astuteness, can provide us with significant insights into how we might be able to proceed today.

Goethe and the Art of Ecology

In his introduction to ecocriticism in Germany, Goodbody writes that Goethe is “the thinker and writer who has probably exercised the single greatest influence over the Germans’ perception of nature since the ‘ecological turn’ in the 1970s” (xii). Indeed, Goodbody elaborates, Goethe’s significance in Germany mirrors Thoreau’s significance in the United States: “If any single German writer comes close to the importance which Henry David Thoreau possesses in American culture as principal founder of the national ‘environmental imagination,’” he writes, “it is Johann Wolfgang von Goethe” (45). In light of the greater scope of Goethe’s literary work and scientific inquiries, it is, moreover, arguable that within an international context Goethe’s significance for environmental thought should exceed Thoreau’s.

Although from an international perspective Goethe’s relevance for environmentalism remains understudied, his views of nature and his conception and practice of science have gained significant attention over the last three decades. Within the history of philosophy, major studies of German Idealism and Romanticism have illustrated Goethe’s influence on the development of philosophy and argued for the exemplary significance of his scientific practice and his epistemology and ontology of nature.³⁰ Important work has also been done on the methodology and practice of Goethe’s science within the history and philosophy of science.³¹ In addition, there exists a relatively small but active international community of scientists and philosophers of science who are undertaking pioneering work in the tradition of Goethean science. “Goethean scientists” aim not only to interpret Goethe’s science in its historical milieu but also to further Goethe’s holistic research and “delicate empiricism” (*zarte Empirie*) in a contemporary context.³² The writings of Goethean scientists have, moreover, included significant discussions of the environmental importance of a Goethean approach.³³

As mentioned above, for environmental philosophers (sometimes in contrast to environmental ethicists), ethical questions about how we should relate to the natural world cannot be separated from either epistemological or ontological questions. Furthermore, various philosophers and historians of science have argued that modern science itself is technological in character and based on attitudes of controlling and dominating nature.³⁴ Baconian scientific method recommends that nature be forced to divulge her secrets, and there are disturbing connections between the persecution and torture of witches and these representations of scientific method, as feminist historians, ecofeminists, and other scholars have shown.³⁵ The image of nature developed during the early modern era—of nature as “dead,” “mechanical,” “inanimate,” “passive,” and therefore as distinct from or opposed to the living, active, moral, and meaningful world of human beings—goes hand in hand with our willingness to manipulate and exploit nature and differs strongly from Indigenous views of the human-nature relation as well as earlier European views.

In this context of scholarship, which is not afraid to interrogate and supplement science (while at the same time acknowledging the huge benefits to humanity that have resulted from modern science as well as the significant

role of the sciences—ecology, climate science, environmental science, etc.—in addressing the environmental crisis), Goethe seems especially significant, both as a natural scientist and as a philosopher of nature. As Frederick Amrine states in his article for this special section, and Gernot Böhme and others have argued elsewhere, Goethe's scientific studies present a "counter-paradigm." In contrast to the will to control nature, Goethe revered the natural world and developed a "delicate empiricism" that enables a participatory relation between the knower and nature that is mutually transformative.³⁶ Long before quantum physics recognized the inextricable role of the scientist in the results of scientific observation, Goethe systematically included the scientist as an integral part of all scientific inquiry. For this reason, as well as his refusal to reduce qualitative experience to quantifiable abstractions, Goethe's scientific studies (from his plant morphology to his color theory) are rightly described as a phenomenology of nature.³⁷

Furthermore, Goethean scientists have compellingly illustrated that the practice of a Goethean approach and the dialogical relationship that it enables between the scientist and the subject of study (rather than "object" of study) form the basis of an ethical responsibility toward the more-than-human world.³⁸ Just as I am likely to feel a greater moral concern for human others with whom I share an intimate relationship than for those whom I know only superficially, so a deeper relationship to the environment can foster a sense of moral responsibility toward the latter. In addition, a central tenet of Goethean methodology is that in order to understand nature adequately the scientist needs to become mentally as flexible and dynamic as natural formations and transformations.³⁹ Goethean science thus attunes the human being to the natural order in a way that can translate into various human endeavors that reflect this attunement and are thereby more ecological than actions determined by a sense of alienation from the environment.

The environmental humanities and environmental philosophy have been especially critical of many of the dualisms that plague modern Western culture: the binary oppositions between nature and culture, matter and mind, the natural and the human, body and soul, female and male, and so on. Many of these dualisms are in turn closely interconnected.⁴⁰ For instance, representations of the body, women, and nature have been opposed to those of mind (reason), men, and culture in overlapping ways. Goethe is, in this respect, once again particularly relevant. Böhme has specifically argued for the significance of Goethe's phenomenological science (particularly his morphology and color theory) in relation to the human/nature and mind/body oppositions. Modern science's abstraction from the lived experience of the embodied subject is, according to Böhme, a disconnection from both our own nature and surrounding nature. The "animate body," or *Leib*, is, for Böhme, "[die] Natur, die wir selbst sind" (the nature that we ourselves are).⁴¹ Goethe's scientific method does not abstract from the embodied subject but includes embodied experience as integral to scientific inquiry. In educating our sensibility, it connects us more deeply to our own embodiment, or *Leiblichkeit*, and deepens our "aesthetic" (in the broad sense of "perceptual") sensitivity to the environment.

In Goethe one can also speak of a methodological resolution of dualisms. What Schiller called Goethe's "rational empiricism" (MA 8.1:492, 499) methodologically overcomes the opposition between rationalist (as well as idealist) and empirical, philosophical and scientific, approaches to the natural world.⁴² Goethe's approach to nature is both open and receptive to the diversity of empirical phenomena and philosophically informed. He neither denies difference for the sake of unity nor emphasizes difference at the expense of meaningfulness or coherence. Goethe finds the universal in its particular variations and sees the particular as a distinctive embodiment of the universal. In doing so, he employs a specific intuitive capacity of judgment that is at once perceptual and intellectual, which he calls *anschauende Urteilskraft* (MA 12:99; intuitive judgment).⁴³

In a sense, Goethe was a naturalist but there is nothing reductive about his naturalism. He does not reduce mind to matter, and his vision of nature includes the divine: God and Nature are synonyms, as evidenced by his hyphenated expression (drawn from Spinoza) "Gott-Natur."⁴⁴ There is no dualism between God and Nature, as the divine is immanent to the creative becoming of Nature (MA 19:286). The concept of nature, as aforementioned, has itself been criticized by environmental theorists. In this respect, David Macauley discusses the need for more concrete ideas and modes of engagement with the environment and refers to the various critiques of the "elusive and elastic notion of nature."⁴⁵ The concept of nature certainly plays a central role in Goethe's thought; however, Goethe, the *Augenmensch*, is at the same time exceptionally concrete and sensitive to environmental phenomena. His dynamic and encompassing idea of nature serves to grant integrity to his views without entailing a withdrawal from the richness of the sensuous world.⁴⁶

Like his concept of metamorphosis, which enables the simultaneous perception of an encompassing identity and distinctive variation, Goethe is generally exemplary in the manner in which he is able to distinguish without dividing (to borrow Coleridge's well-known distinction), to perceive continuities without resorting to amorphous unities (or nights when all cows are black, to resurrect the Hegelian metaphor). Goethe's views and methodology are able to resolve many dualisms without resorting to either reductionism or the exclusion of difference.

Goethe's scientific and literary endeavors cannot ultimately be disconnected from one another, as they mutually informed each other. A number of ecocritics and Goethe scholars have explicated the environmental significance of Goethe's literary works and noted connections between the two.⁴⁷ Particularly obvious examples of such connections are poems that grew directly out of his scientific studies and interests, such as "Die Metamorphose der Pflanzen" (MA 13.1:150–52; The Metamorphosis of Plants),⁴⁸ "Metamorphose der Tiere" (MA 13.1:153–55; Metamorphosis of Animals), and "Howards Ehrengedächtnis" (MA 13.1:158–59; In Honor of Howard), which praises Luke Howard's morphological classification of cloud types. There is nothing contrived about Goethe's poetic articulation of his scientific ideas, as, for example, his scientific practice itself involves the application of artistic capacities.⁴⁹

Goethe was deeply aware of interrelationships in the natural world and the ultimate unity of nature, such that he can be described as a protoecologist.⁵⁰ However, ecology tends to focus on the functional interdependence of beings and the importance of symbiotic relations for the survival of organisms, and there are aspects of Goethe's approach that can supplement this common understanding of ecology. One of the key words in Goethe's vocabulary is *Bildung* (formation) and he literally saw interrelationships between natural formation (such as that of an organism), artistic creation, and human culture.⁵¹ Goethe was primarily a morphologist, a hylomorphist in the Aristotelian tradition.⁵² In Goethe we find what could be called an ecological morphology or a morphological ecology. His approach to comparative morphology reveals deep relationships and continuities between various organisms (e.g., different plant species) as well as intimate connections between organisms and their environments.⁵³ In their articles in this special section, Frederick Amrine and Ryan Feigenbaum both draw attention to what we are calling Goethe's ecological morphology. Feigenbaum discusses Goethe's example of the interdependence of fish and the element of water (as well as similarities between human and animal skeletons), and Amrine draws attention to connections between the biology of Jakob von Uexküll and Goethe's science. Both contributors emphasize a bidirectionality (sometimes more implicit than explicit) in Goethe's view of the interdependence of organisms and their environments, such that a fish, for instance, can be described as "waterlike" and water can be described as "fishlike," and the eye can be described as "sunlike" and the sun as "eyelike," the spider as "flylike" and the fly as "spiderlike." The form and appearance of organisms and their environments reflect one another. They are ontologically interrelated.

Goethe's preoccupation with form and formation not only is significant in contributing to an awareness of ecological relations but also reveals a link between organisms and human culture, especially art. While the common model of ecological interdependence can shed light on many aspects of art,⁵⁴ Goethe's focus on morphology can reveal especially concrete relationships that might otherwise remain overlooked. According to Goethe, the secret of art (and nature) lies in its form (MA 20.1:197). Art is the "spiritual-organic"; the form of the work of art reveals the same kind of internal coherence as that of an organism (MA 6.2:13). There is thus a deep connection between the morphological holism of ecological relations and the holistic character of the work of art (this theme is explored in a profound way with respect to music in Amrine's contribution to this special section).

Furthermore, Goethe perceives a deep *cognitive* significance in beauty and art. "Das Schöne ist eine Manifestation geheimer Naturgesetze, die uns ohne dessen Erscheinung ewig wären verborgen geblieben" (MA 17:749; Beauty is a manifestation of secret natural laws, which, were it not to appear, would forever remain hidden from us). Natural beauty, which in modern thought is often regarded as a merely subjective experience, is, for Goethe, an exemplary presencing of the inner lawfulness of nature and thereby mediates "objective" insights into the natural world. Hence, beauty and scientific knowledge (in Goethe's qualitative sense) are interrelated. In turn, art is the "würdigste Auslegerin" (MA 3.2:188; worthiest interpreter) of nature, and

artistic style is based “auf den tiefsten Grundfesten der Erkenntnis, auf dem Wesen der Dinge” (MA 17:751; on the most fundamental principle of cognition, on the essence of things).⁵⁵ Art can, in other words, mediate knowledge of nature and is thereby affiliated with the aims of science. While Böhme has highlighted the importance of certain features of Goethe’s work in the context of his ecological aesthetics (in accordance with his expanded notion of aesthetics), these connections between beauty, science, and art could also contribute new perspectives to current Anglophone debates on the relationship between natural beauty and scientific knowledge (and related themes) in the philosophical discipline of “environmental aesthetics.”⁵⁶

We have devoted a fair amount of consideration to aspects of Goethe’s oeuvre (particularly his science) that seem extremely pertinent to the central aim of the environmental humanities to wed the humanities and the natural sciences. Goethe is especially significant in this respect, as there is nothing forced about the marriage of art and science in his work. There are many reasons that make the unification of mainstream science and the humanities a difficult task. However, Goethe’s qualitative approach to science is intrinsically connected to the arts and the humanities. It affirms human experience, involves “exakte sinnliche Phantasie” (MA 12:356; exact sensorial imagination), sees truth in beauty, and lends itself to artistic expression. In fact, Goethe’s science in important respects finds its culmination in art. As Böhme has argued, it is Goethe’s poem “Die Metamorphose der Pflanzen” that offers the most adequate articulation of the *Urpflanze* (archetypal plant).⁵⁷

There are, of course, aspects of Goethe’s thought that may be regarded as problematic from a contemporary environmental perspective. For instance, his claim that in certain cases the work of art can surpass nature and his view that the human being exemplifies the consummation of nature’s development could be interpreted as anthropocentric.⁵⁸ Nonetheless, Goethe’s transdisciplinarity presents an ideal accord between the sciences and the humanities and bears the promise of a deeper attunement of nature and culture.

Synopsis of the Contributions to the Special Section

We are delighted to have six exciting and excellent articles on the environmental significance of various aspects of Goethe’s work. Four of the authors are already well known for their contributions to Goethe scholarship and environmental thought. Gernot Böhme is a leading environmental philosopher in Germany and internationally renowned for his work in environmental aesthetics. Kate Rigby is a pioneering ecocritic in Australia and is highly regarded internationally for her work on European Romanticism and ecocriticism. Frederick Amrine is a preeminent scholar of Goethe’s scientific thought and its contemporary relevance, and Heather I. Sullivan is a major contributor to scholarship on the ecocritical significance of Goethe. The two contributions by younger scholars reveal a sophisticated understanding of Goethe’s work and its contemporary relevance. Ryan Feigenbaum’s article demonstrates an exceptional grasp of the broader scientific context of

Goethe's empirical studies and his contemporary significance for environmental philosophy. Jason Groves's article offers a nuanced understanding of Goethe's geological views and the ways in which they anticipate later geological discoveries and the possibility of climate change.

Kate Rigby's article, "Art, Nature, and the Poesy of Plants in the *Goethezeit*: A Biosemiotic Perspective," discusses connections between nature and art in Goethe and, more specifically, Goethe's (and Schelling's) significance as a precursor to the contemporary interdisciplinary field of biosemiotics. The main premise of biosemiotics is that human language is not the only form of communicative process or semiosis. Rather, semiosis (signification and interpretation) is evident in virtually all beings, from the level of cell development and plant formation to animal behavior and human culture. Rigby discusses the legacy of Goethe and Romantic thought in contemporary biosemiotics, via figures such as the biologist Jakob von Uexküll (who also features strongly in Amrine's article), and explicates the similarities and differences between the Romantic idea of a "language of nature," or *Natursprache*, and biosemiotics. Furthermore, in a close reading of Goethe's poem "Die Metamorphose der Pflanzen," Rigby demonstrates how Goethe moves beyond the still-anthropocentric aspects of the idea of a *Natursprache* to anticipate the findings of contemporary biosemiotics. In short, Goethe explores ways in which living organisms are not only meaningful signs for human beings but also themselves engaged in processes of communication. This expansive view of communication clearly transcends a postmodern conception of language.

While Rigby's article traces the Goethean antecedents of biosemiotics, Frederick Amrine's contribution, "The Music of the Organism: Uexküll, Merleau-Ponty, Zuckerkandl, and Deleuze as Goethean Ecologists in Search of a New Paradigm," adds an important chapter to the history of ecological thought by distinguishing an implicit tradition of Goethean ecology in the work of later scientists and thinkers: the biology of Jakob von Uexküll, the phenomenological *Naturphilosophie* of Maurice Merleau-Ponty, the music theory of Victor Zuckerkandl, and the philosophy of Gilles Deleuze. These researchers articulate a "counterparadigm" to mechanistic science, and Goethe is shown to be both a direct influence and an insufficiently acknowledged progenitor of this counterparadigm. More specifically, the model and metaphor of music are central to these thinkers. Uexküll regarded nature as a grand and polyphonous harmony and described everything from embryological development to the dynamic relations between organisms and their environments (*Umwelten*) in musical terms. Uexküll (directly and indirectly) drew heavily on Goethe and was a major influence on Merleau-Ponty's late and incomplete philosophy of nature as well as on the "rhizomic" thought of Deleuze. Zuckerkandl was a music theorist who appropriated Goethe's morphological ideas as a key to the structures of musical composition. Thus, Amrine's article investigates not only "the music of the organism" as the title suggests but also "the organism of music." It maps an understudied legacy of Goethe's holistic science and reveals deep and illuminating connections between nature and art (especially music), the organic and what Goethe called the "spiritual-organic."

In his article “Toward a Nonanthropocentric Vision of Nature: Goethe’s Discovery of the Intermaxillary Bone,” Ryan Feigenbaum offers a fresh, lucid, and nuanced account of Goethe’s discovery of the intermaxillary bone and its significance from the perspective of contemporary environmental philosophy. Feigenbaum precisely delineates the scientific context of Goethe’s discovery and the controversies surrounding it. He both explicates the significance of Goethe’s discovery and sheds important light on the hermeneutics of scientific discovery—that is, on the crucial role of historical, scientific, and conceptual contexts in the meaning of any discovery. Most significantly, Feigenbaum argues that Goethe’s developing view of the unity of nature, which does not aim to separate the animal and the human, was at once crucial to Goethe’s discovery (though the matter is more complex than many previous commentators have assumed) and exemplary of a nonanthropocentric approach to the other-than-human world. Anthropocentrism and its ecologically minded alternatives (nonanthropocentrism, ecocentrism, biocentrism, etc.) are some of the most discussed and complex topics in environmental thought. A superficial gloss of a central critique of anthropocentrism is that any view of humans as morally or ontologically superior to the rest of nature directly or indirectly condones the human exploitation and destruction of the natural environment. In the context of his discussion of the intermaxillary bone, Feigenbaum explicates Goethe’s epistemology (scientific methodology) and ontology of nature (as an interconnected whole) as an exemplary non-anthropocentric view.

In his article “Goethe’s Petrofiction: Reading the *Wanderjahre* in the Anthropocene,” Jason Groves traces Goethe’s changing views of granite and, in particular, of erratic granite blocks. These erratic blocks were for a long time perplexing to geological inquiry because they appear displaced in relation to the geology of their surroundings. Groves points to significant affinities between Goethe’s approach to this perplexity and the ecocritical theory of Timothy Morton and illustrates how in various instances (in his scientific prose and fictional writings—especially *Wilhelm Meisters Wanderjahre* [Wilhelm Meister’s Journeyman Years]) Goethe was a forerunner in suggesting a glacial account (in connection to the idea of former ice ages) of how these granite blocks came to stand in their displaced locations. Furthermore, he draws significant connections between Goethe’s geological and climatological views of the volatility of the earth’s climate and the current threat of climate change.

Heather I. Sullivan’s and Gernot Böhme’s contributions offer environmental readings of two of Goethe’s major literary works, *Die Leiden des jungen Werther* (The Sorrows of Young Werther) and *Faust*, respectively. Sullivan’s article, “Nature and the ‘Dark Pastoral’ in Goethe’s *Werther*,” presents an illuminating discussion of the genre of pastoral literature and the place of *Werther* within this tradition. In contrast to widespread interpretations of the pastoral genre, Sullivan offers a sophisticated account of the inherent complexities of the pastoral from its very beginnings. While the pastoral traditionally invokes an idyllic Golden Age, this is not as naïve as it might often seem, as the utopianism of the pastoral and its explicit anachronism (its reference to

a preceding, better age) imply that negation is intrinsic to the genre. Sullivan draws on the work of Terry Gifford and other theorists in developing this account, though her focus on the negations and tensions inherent to the pastoral also recalls Hegel's understanding of conceptual determination as implying the negation of that which is excluded by the determination. In its opposition to the present, in its contrast to the urban, in its idealized utopianism, the pastoral subjects the present, the urban, and reality to critique. With this sophisticated conception of the pastoral as background, Sullivan proceeds to determine a subgenre or variation of the pastoral that carries these tensions and contradictions further; she calls it "dark pastoral." The "dark" in "dark pastoral" is taken from the ecocritical conception of "dark ecology," which was developed by Timothy Morton and "includes negativity and irony, ugliness and horror."⁵⁹ Sullivan offers a fresh reading of *Werther*, especially the final developments in the novel, as an early instance of the "dark pastoral" that coincides with the onset of the Anthropocene.

In "Goethe und die moderne Zivilisation," Gernot Böhme cogently discusses Goethe's critiques of modern civilization in ways that relate to his book *Goethes Faust als philosophischer Text*.⁶⁰ Böhme first outlines what he regards as an unfortunate distinction between "culture" and "civilization" in German thought, according to which the former refers to the arts and education while the latter concerns politics, economics, and the external ordering of society. While this dualism is unfortunate, it serves to frame his interpretation of Goethe as an opponent of central aspects of modern civilization that were only starting to become apparent in Goethe's time. In a lucid and penetrating discussion of various scenes from *Faust*, Böhme explicates inherent critiques of: modern "imaginary society," which lacks any substantial foundation and is ruled by money; paper currency that acquires independence from the exchange of real goods; the artificial transformation of nature and the will to emancipation from the natural order; and a technological civilization that is predicated on the exploitation of nature. Goethe appears as highly critical of these attempts to "liberate" ourselves from nature and anticipates the tragic consequences that we are facing today.

We hope that the readers of the *Goethe Yearbook* share our enthusiasm for these illuminating contributions to scholarship on Goethe's environmental significance. Moreover, while important research on Goethe and environmentalism has been carried out, it seems to us that the potential significance of Goethe's work for environmental philosophy, ecocriticism, and the environmental humanities is still insufficiently recognized and far from exhausted. Hence, we hope that these articles stimulate other scholars to join this conversation.

We would like to thank Elisabeth Krimmer and Adrian Daub for embracing our proposal for a special section on "Goethe and Environmentalism," and for their helpful feedback and assistance in bringing this project to fruition. We would also like to thank Inja Stracenski for her editorial assistance.

As we were completing the editorial work for this issue of the *Goethe Yearbook*, we were shocked and saddened by the sudden death of the distinguished Australian poet and ecocritical thinker Martin Harrison. Only a couple of days before his passing we had taken part in a seminar in which

he discussed his work with the leading environmental humanities scholar Deborah Bird Rose. We have chosen to dedicate this special section to him.
Sydney, Australia, September 2014

Dalia Nassar, The University of Sydney

Luke Fischer, The University of Sydney

NOTES

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1. Paul J. Crutzen and Eugene F. Stoermer, "The 'Anthropocene,'" *Global Change Newsletter* 41 (2000): 17–18.

2. Will Steffen, Jacques Grinevald, Paul Crutzen, and John McNeill, "The Anthropocene: Conceptual and Historical Perspectives," *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences* 369, no. 1938 (2011): 842–48, here 843.

3. See Goethe's remarks in "Schicksal der Druckschrift," in *Sämtliche Werke nach Epochen seines Schaffens*, Münchner Ausgabe (hereafter cited as MA), ed. Karl Richter, 21 vols. (Munich: Carl Hanser, 1985–98) 12:71–72. Importantly, however, they were embraced by major philosophers such as Schelling and Hegel.

4. As Joern Fischer et al. put it, "critical analysis of foundational and longer-term issues (e.g. values, beliefs and motivations) is needed to link short-term policy actions with agreed longer-term sustainability targets. Such analysis should draw on the humanities (e.g. history, anthropology and moral philosophy) and social sciences (e.g. institutional theory) to reflect on alternative values and institutions, and how they can foster or prevent the attainment of sustainability. Arguably, one of the greatest challenges at a societal level is to engage in constructive discussion aimed at identifying core values that can be sustained and that are worth sustaining. That is, the analysis of foundational issues must go beyond which institutional arrangements are needed, and must confront the ethical and normative dilemmas of modern consumer and aspirational societies." Joern Fischer et al., "Mind the Sustainability Gap," *Trends in Ecology and Evolution* 22, no. 12 (2007): 621–24, here 623.

5. Val Plumwood, for instance, calls it a "crisis of reason." Val Plumwood, *Environmental Culture: The Ecological Crisis of Reason* (London: Routledge, 2002).

6. Thus, in her introduction to the first ecocriticism reader (1996), Cheryll Glotfelty criticizes mainstream literary studies, which, in contrast to philosophy, history, and anthropology, have not yet taken account of the environmental crisis. She critically notes that although literary criticism regards itself as responding to "contemporary pressures," "the absence of any sign of an environmental perspective in literary studies" would lead one to think that the earth's systems were not under any pressure (xv–xvi). "Indeed," she adds, "you might not know that there was an earth at all" (xvi). Cheryll Glotfelty, introduction to *The Ecocriticism Reader: Landmarks in Literary Ecology*, ed. Cheryll Glotfelty and Harold Fromm (Athens: U of Georgia P, 1996) xv–xxxvii. See also Kate Rigby's and Ryan Feigenbaum's contributions to this special section.

7. For a discussion of Goethe's significance in relation to these issues, see Kate Rigby, "Prometheus Redeemed? From Autoconstruction to Ecopoetics," in *Ecospirit: Religions and Philosophies for the Earth*, ed. Laurel Kearns and Catherine Keller (New York: Fordham UP, 2007) 233–51.

8. For an overview of the history of environmental ethics, see Robin Attfield, *Environmental Ethics*, 2nd ed. (Cambridge: Polity, 2014), chap. 2.

9. Val Plumwood makes a strong call for environmental philosophy to move beyond environmental ethics in *Feminism and the Mastery of Nature* (1993; repr., New York: Routledge, 2002). She writes: “mainstream environmental philosophy is problematic not just because of restriction in ethics but also because of restriction to ethics” (173).

10. Although several important critiques of modern science from a feminist perspective appeared in the 1980s (such as Carolyn Merchant’s *The Death of Nature* in 1980), environmental ethicists have generally accepted the results of science—especially ecology—and have taken them as the starting point for their considerations. This contrasts with the more recent rise of environmental philosophy, which, as Bruce V. Foltz and Robert Frodeman’s introduction to a collection of essays illustrates, partly challenges the noncritical acceptance of scientific results (and premises). After all, they ask, “is it wise to so closely link philosophical reflection, and perhaps especially ethical reflection, to the results of the positive sciences, results that are essentially, and sometimes notoriously, subject to revision?” To this they importantly add that “the scientific understanding of nature [is] itself part of the problem” (5). Bruce V. Foltz and Robert Frodeman, introduction to *Rethinking Nature: Essays in Environmental Philosophy*, ed. Bruce V. Foltz and Robert Frodeman (Bloomington: Indiana UP, 2004) 1–9.

11. See, for instance, Ted Toadvine’s call for a new philosophy of nature in his book *Merleau-Ponty and the Philosophy of Nature* (Evanston, IL: Northwestern UP, 2009) and his coauthored introduction to *Eco-phenomenology: Back to the Earth*, ed. Charles S. Brown and Ted Toadvine (Albany: SUNY Press, 2003). Although Toadvine focuses on the phenomenological tradition, it is important to note that the German Idealists and Romantics, especially Schelling and Goethe, also offered philosophies of nature that can serve or deepen the aims of environmental philosophy.

12. Kate Rigby, “Ecocriticism,” accessed August 18, 2014, <http://www.asle.org/assets/docs/ECOCRITICISM+Rigby+article.pdf>. Or, in the words of Axel Goodbody, ecocriticism emphasizes “neglected subgenres from nature writing to ecological science fiction, explore[s] environmental subtexts in canonical works and [aims to] identify or reinterpret significant thematic configurations such as pastoral and eco-apocalypticism.” Axel Goodbody, *Nature, Technology and Cultural Change in Twentieth-Century German Literature: The Challenge of Ecocriticism* (Basingstoke: Palgrave Macmillan, 2007) 6.

13. Jonathan Bate, *Romantic Ecology: Wordsworth and the Environmental Tradition* (London: Routledge, 1991).

14. Lawrence Buell, *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture* (Cambridge, MA: Harvard UP, 1995) 88.

15. Thus, Greg Garrard writes that “environmental problems require analysis in cultural as well as scientific terms, because they are the outcome of an interaction between ecological knowledge of nature and its cultural inflection.” Greg Garrard, *Ecocriticism: New Critical Idiom* (Oxfordshire: Routledge, 2004) 14.

16. See Timothy Morton, *Ecology without Nature: Rethinking Environmental Aesthetics* (Cambridge, MA: Harvard UP, 2007). In their contributions to this special section, both Heather I. Sullivan and Jason Groves draw on Morton’s ideas.

17. In addition to the studies by Jonathan Bate and Lawrence Buell mentioned above, see Karl Kroeber, *Ecological Literary Criticism: Romantic Imagining and the Biology of Mind* (New York: Columbia UP, 1994); Mark S. Lussier, *Romantic Dynamics: The Poetics of Physicality* (London: Palgrave Macmillan, 1999); James McKusick, *Green Writing: Romanticism and Ecology* (New York: St. Martin’s Press, 2000); Kevin

D. Hutchings, *Imagining Nature: Blake's Environmental Poetics* (Montreal: McGill-Queen's UP, 2002); as well as Bate's more recent work, *The Song of the Earth* (Cambridge, MA: Harvard UP, 2000).

18. See Dalia Nassar, introduction to *The Relevance of Romanticism: Essays on German Romantic Philosophy* (Oxford: Oxford UP, 2014) 1–11. Or, as the editor of an anthology on "European Romanticism" argues, the term should not be thought of "as a set of beliefs or an aesthetic programme, but 'as a *set of responses*, highly differentiated and at times downright contradictory, to a historically specific *challenge*." Simon Haines, introduction to *European Romanticism: A Reader*, ed. Stephen Prickett and Simon Haines (London: Bloomsbury, 2010) 3–20, here 15.

19. See Kate Rigby, *Topographies of the Sacred* (Charlottesville: U of Virginia P, 2004) 10–11. Rigby notes that Goethe identifies himself as a Romantic in a conversation with Eckermann from March 21, 1830.

20. See, e.g., Luke Fischer, "Goethe contra Hegel: The Question of the End of Art," *Goethe Yearbook* 18 (2011): 127–57, for an account of the relationship between artistic and natural form in both Goethe's and Hegel's views. See also Frederick Amrine's contribution to this special section and Betty Rosznak and Theodore Rosznak, "Deep Form in Art and Nature," in *Green Studies Reader*, ed. Laurence Coupe (London: Routledge, 2000) 223–26.

21. For an account of the relationship between nature and morality in Novalis and Schlegel, see Dalia Nassar, *The Romantic Absolute: Being and Knowing in Early German Romantic Philosophy, 1795–1804* (Chicago: U of Chicago P, 2014).

22. *Kritische Friedrich Schlegel Ausgabe*, ed. Ernst Behler and Jean J. Anstett (Paderborn: Schöningh, 1981) 16:134, no. 586.

23. Regarding Schlegel's interest in nature, see Nassar, *Romantic Absolute*, chaps. 7–8.

24. These notions include anthropocentrism, holism, and the very idea of "nature." On anthropocentrism and holism, see Rigby, *Topographies of the Sacred*, 50, 211. Timothy Morton maintains that the idea of nature—inherited from the Romantics—"hinders authentic ecological politics, ethics, philosophy and art" because it is a "transcendental term in a material mask" (*Ecology without Nature*, 14).

25. Gary Harrison, "Romanticism," in *Encyclopedia of World Environmental Histories*, vol. 3, ed. Shepard Krech III, J. R. McNeill, and Carolyn Merchant (London: Routledge, 2003). Rigby ("Ecocriticism") similarly notes: "The romantic legacy too is a mixed one."

26. See, e.g., Heather Sullivan, "Affinity Studies and Open Systems: A Non-equilibrium and Eco-critical Reading of Goethe's *Faust*," in *Ecocritical Theory: New European Approaches*, ed. Axel Goodbody and Kate Rigby (Charlottesville: U of Virginia P, 2011) 243–55; Kate Rigby, "Freeing the Phenomena: Goethean Science and the Blindness of Faust," *Interdisciplinary Studies in Literature and the Environment* 7, no. 2 (Summer 2000): 25–42; and Axel Goodbody, *Nature, Technology and Cultural Change*, chaps. 1–2.

27. This is certainly not the case in Germany, although it is important to add that the interest in environmental humanities and ecocriticism is not as widespread in the German academy as it is in North America and Australia. There are also differences between the German and Anglophone environmental humanities. For a thorough account of ecocriticism in Germany, see Goodbody, *Nature, Technology and Cultural Change*.

28. The German Romantics did this by observing cultural differences in varying geographies, explicating the relation between natural organisms and artifacts, outlining a comprehensive theory of mind, and elaborating how the destruction of nature would lead to the destruction of culture. For the German Romantics, nature was never

thought of as a particular landscape or a vast expanse but was conceived as a dynamic reality in which human beings dwell and to which they contribute. See Dalia Nassar, "Romantic Empiricism after the 'End of Nature': Contributions to Environmental Philosophy," in *The Relevance of Romanticism: Essays on German Romantic Philosophy*, ed. Dalia Nassar (New York: Oxford UP, 2014) 296–311; see esp. 298–99.

29. See esp. Frederick Beiser, *German Idealism: The Struggle against Subjectivism* (Cambridge, MA: Harvard UP, 2002); Manfred Frank, "*Unendliche Annäherung*": *Die Anfänge der philosophischen Frühromantik* (Frankfurt/Main: Suhrkamp, 1997); Eckart Förster, *The Twenty-Five Years of Philosophy* (Cambridge, MA: Harvard UP, 2012); and Nassar, *Romantic Absolute*.

30. Förster, *Twenty-Five Years of Philosophy*; Nassar, *Romantic Absolute*; Robert J. Richards, *The Romantic Conception of Life* (Chicago: U of Chicago P, 2002); and Elizabeth Millán and John H. Smith, eds., "Special Section on Goethe and German Idealism," *Goethe Yearbook* 18 (2011).

31. See, e.g., Frederick Amrine, Francis J. Zucker, and Harvey Wheeler, eds., *Goethe and the Sciences: A Reappraisal* (Dordrecht: D. Reidel, 1987); Gernot Böhme and Gregor Schiemann, eds., *Phänomenologie der Natur* (Frankfurt/Main: Suhrkamp, 1997), particularly the chapters by Manfred Wenzel and John Neubauer; Astrida Orle Tantilillo, *The Will to Create: Goethe's Philosophy of Nature* (Pittsburgh, PA: U of Pittsburgh P, 2002); Richards, *Romantic Conception of Life*; Karl J. Fink, *Goethe's History of Science* (Cambridge: Cambridge UP, 1991); Dennis L. Sepper, *Goethe contra Newton* (Cambridge: Cambridge UP, 1988); George A. Wells, *Goethe and the Development of Science, 1750–1900* (Alphen aan den Rijn, the Netherlands: Sijthoff and Noordhoff, 1978); and Frederick Burwick, *The Damnation of Newton: Goethe's Color Theory and Romantic Perception* (Berlin: Walter de Gruyter, 1986). For an extensive bibliography of literature on Goethe's science from 1776 to 1990, see Frederick Amrine, ed., *Goethe in the History of Science*, 2 vols. (New York: Peter Lang, 1996).

32. See, e.g., David Seamon and Arthur Zajonc, eds., *Goethe's Way of Science: A Phenomenology of Nature* (Albany: SUNY Press, 1998); Böhme and Schiemann, *Phänomenologie der Natur*, particularly the chapters by Jochen Bockemühl and Martin Basfeld; and Henri Bortoft, *The Wholeness of Nature: Goethe's Way of Science* (Hudson, NY: Lindisfarne Press, 1996). Rudolf Steiner's philosophical interpretations of Goethe's science in the late nineteenth and early twentieth century have played a seminal role in this tradition. See, e.g., Rudolf Steiner, *Einleitungen zu Goethes Naturwissenschaftlichen Schriften (1884–1897)*, *Gesamtausgabe* (hereafter cited as GA) 1 (1884–97; Dornach, Switzerland: Rudolf Steiner, 1973); Rudolf Steiner, *Grundlinien einer Erkenntnistheorie der Goetheschen Weltanschauung*, GA 2 (1886; Dornach, Switzerland: Rudolf Steiner, 1979); and Rudolf Steiner, *Goethes Weltanschauung*, GA 6 (1897; Dornach, Switzerland: Rudolf Steiner, 1973).

33. See, for instance, Craig Holdrege's recent book on the way in which a Goethean approach to botany can provide a model for a sustainable and ethical relationship to the natural world: Craig Holdrege, *Thinking Like a Plant: A Living Science for Life* (Great Barrington, MA: Lindisfarne Books, 2013). See also David Seamon, "Goethe's Way of Science as a Phenomenology of Nature," *Janus Head* 8, no. 1 (2005): 86–101; Craig Holdrege and Steve Talbott, *Beyond Biotechnology: The Barren Promise of Genetic Engineering* (Lexington: UP of Kentucky, 2008).

34. See, e.g., Martin Heidegger, "Die Frage nach der Technik," in *Vorträge und Aufsätze*, *Gesamtausgabe*, vol. 7, ed. F.-W. von Herrmann (1953; Frankfurt/Main: Vittorio Klostermann, 2000) 7–36; Carolyn Merchant, *The Death of Nature: Women, Ecology, and the Scientific Revolution* (San Francisco, CA: Harper and Row, 1980); and Plumwood, *Feminism and the Mastery of Nature*. On Goethe's significance in this

context, see the chapter "Lebendige Natur: Wissenschaftskritik, Naturforschung und allegorische Hermetik bei Goethe," in Hartmut Böhme, *Natur und Subjekt* (Frankfurt/Main: Suhrkamp, 1988) 145–78.

35. Merchant, *Death of Nature*; and Plumwood, *Feminism and the Mastery of Nature*. On Goethe's significance in this context, see Frederick Amrine, "The Unconscious of Nature: Analyzing Disenchantment in *Faust I*," *Goethe Yearbook* 17 (2010): 117–32.

36. See Frederick Amrine, "The Metamorphosis of the Scientist," in *Goethe's Way of Science*, ed. Seamon and Zajonc, 33–54.

37. Seamon and Zajonc, *Goethe's Way of Science*; Bortoft, *Wholeness of Nature*; and Böhme and Schiemann, *Phänomenologie der Natur*. Böhme specifies that not all of Goethe's scientific studies are phenomenological; because his meteorological views, for instance, rely heavily on barometric readings, in contrast to technologically unmediated perception, Goethe's methodology in this case cannot be regarded as phenomenological. Gernot Böhme, "Phänomenologie der Natur—ein Projekt," in *Phänomenologie der Natur*, ed. Böhme and Schiemann, 11–43, here 19.

38. Holdrege, *Thinking Like a Plant*, 137ff.; Seamon, "Goethe's Way of Science as a Phenomenology of Nature"; and Nassar, "Romantic Empiricism."

39. A key statement by Goethe in this respect is the following from "Die Absicht eingeleitet" in *Zur Morphologie*: "wir haben uns, wenn wir einigermaßen zum lebendigen Anschauen der Natur gelangen wollen, selbst so beweglich und bildsam zu erhalten, nach dem Beispiele mit dem sie uns vorgeht" (MA 12:13; if we want to acquire to some degree a living vision of nature, we ourselves have to remain as nimble and plastic as the example with which she proceeds).

40. See, e.g., Plumwood, *Feminism and the Mastery of Nature*.

41. Gernot Böhme, *Für eine ökologische Naturästhetik* (Frankfurt/Main: Suhrkamp, 1989) 35; and Böhme, "Phänomenologie der Natur—ein Projekt."

42. In *Goethes Weltanschauung* (Goethe's Worldview) Steiner presents Goethe's rational empiricism as an overcoming of a one-sided Platonism or idealism (a way of thinking that one-sidedly abstracts from empirical phenomena) that is characteristic of modern philosophy. Similarly, in *Grundlinien einer Erkenntnistheorie der Goetheschen Weltanschauung* (Outline of a Theory of Knowledge Implicit in Goethe's Worldview) Steiner presents an epistemology inherent in Goethe's approach, which involves a synthesis of percept and concept, perception and thinking, and thereby attains the form and goal of genuine knowledge. See also Jakob Ziguas, "Archē as *Urbphänomen*: A Goethean Interpretation of Aristotle's Theory of Scientific Knowledge," *Epoché: A Journal for the History of Philosophy* 18, no. 1 (2013): 79–105.

43. See also Eckart Förster, "Die Bedeutung von Paragraphen 76, 77 der 'Kritik der Urteilskraft' für die Entwicklung der nachkantischen Philosophie [Teil 1]," *Zeitschrift für philosophische Forschung* 56, no. 2 (2002): 169–90; Gunnar Hindrichs, "Goethe's Notion of an Intuitive Power of Judgment," *Goethe Yearbook* 18 (2011): 51–65.

44. For instance, toward the end of the poem "Im ernsten Beinhaus" (In the solemn charnel house) are the lines "Was kann der Mensch im Leben mehr gewinnen, / Als daß sich Gott-Natur ihm offenbare" (MA 13.1:189; What more can a human being attain in life, / Than that God-Nature reveal itself to him).

45. David Macauley, *Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas* (Albany: SUNY Press, 2010) 4.

46. Furthermore, principles such as polarity and intensification (*Steigerung*), as well as his dynamic conception of types, allow Goethe to distinguish structured differ-

ences and developments in nature, which at the same time are interconnected. Goethe's idea of nature is anything but an amorphous and abstract unity. With regard to the contemporary relevance of some of these notions, it is worth mentioning that the biologist Mark Riegner has recently argued for the significance of Goethe's dynamic understanding of types for the emerging field of evolutionary developmental biology. Mark Riegner, "Ancestor of the New Archetypal Biology: Goethe's Dynamic Typology as a Model for Contemporary Evolutionary Developmental Biology," *Studies in History and Philosophy of Biological and Biomedical Sciences* 44 (2013): 735–44.

47. See works by Kate Rigby, Heather I. Sullivan, Axel Goodbody, Frederick Amrine, Hartmut Böhme, Gernot Böhme, among others.

48. Also see Kate Rigby's article for this special section.

49. Richards, *Romantic Conception of Life*, 450ff. In the context of contemporary Goethean science, Nigel Hoffmann explores various connections between distinctive artistic capacities and the study of nature. Nigel Hoffmann, *Goethe's Science of Living Form: The Artistic Stages* (Hillsdale, NY: Adonis Press, 2007).

50. See Feigenbaum's and Amrine's contributions to this special section.

51. See Fischer, "Goethe contra Hegel." See also Rigby's and Amrine's articles for this special section.

52. There are also strong connections between Goethe's and Aristotle's theories of scientific knowledge. See, e.g., Ziguras, "Archē as Urphänomen."

53. This is also an area in which contemporary Goethean scientists have significantly expanded on Goethe's research. See, e.g., Jochen Bockemühl, "Transformation in the Foliage Leaves of the Higher Plants," in *Goethe's Way of Science*, ed. Seamon and Zajonc, 115–28; Craig Holdrege, *The Flexible Giant: Seeing the Elephant Whole* (Ghent, NY: Nature Institute, 2003); and Holdrege, *Thinking Like a Plant*.

54. For a highly interesting exploration of some of the ways in which ecological views can inform contemporary poetry and poetics, see Martin Harrison, "The Act of Writing and the Act of Attention," in "Writing Creates Ecology and Ecology Creates Writing," ed. Martin Harrison, Deborah Bird Rose, Lorraine Shannon, and Kim Satchell, special issue, *TEXT* 20 (2013), accessed September 16, 2014, <http://www.textjournal.com.au/speciss/issue20/Harrison.pdf>.

55. For an in-depth discussion of these connections between nature, knowledge, and art, see Fischer, "Goethe contra Hegel."

56. See, e.g., Arnold Berleant and Allen Carlson, eds., *The Aesthetics of Natural Environments* (Toronto: Broadview Press, 2004). Luke Fischer draws on Goethe, seasonal poetry, and phenomenological thought in order to illustrate how poetic and aesthetic modes of engaging with the phenomena of the seasons can foster a participative understanding of natural rhythms. Luke Fischer, "A Poetic Phenomenology of the Temperate Seasons," *Environment, Space, Place* 6, no. 1 (2014): 7–32.

57. Böhme, *Für eine ökologische Naturästhetik*, 96ff.

58. See nn. 24 and 25 above; and Rigby, *Topographies of the Sacred*, 210–11.

59. Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard UP, 2010) 17.

60. Gernot Böhme, *Goethes "Faust" als philosophischer Text* (Zug, Switzerland: Die Graue Edition, 2005).

KATE RIGBY

Art, Nature, and the Poesy of Plants in the *Goethezeit*: A Biosemiotic Perspective

SOMETIME AROUND 1800, toward the end of his period of programmatic neoclassicism, Goethe took time out from his official duties at the Weimar court, and from his own scientific research, to compose a perfect Petrarchan sonnet addressed to the relationship between “art” and “nature.” While seemingly in flight from one another, we are told in the opening stanza, the apparent divergence of the entities thus named actually effects their unforeseen reunion: “Natur und Kunst, sie scheinen sich zu fliehen, / Und haben sich, eh man es denkt, gefunden” (Though art and nature seem sore disunited / Yet each, before you think, to each is turning).¹ Reassured by this apparent reconciliation of nature and art, the speaker declares that his antipathy (*Widerwille*) (whether to the one or the other or, perhaps, to their apparently antipathetic trajectories) has also disappeared, and he now finds himself drawn equally to both. This bold beginning raises a series of questions, arising in no small part from the multivalence of the very terms “nature” and “art,” which are only partially and indirectly answered in the following stanzas. “Nature,” as Raymond Williams remarks in *Keywords*, is “perhaps the most complex word in the [English] language,” and judging by the lengthy entry in the Grimms’ *Deutsches Wörterbuch*, the same can certainly be said for *Natur* in German.² One wonders, then, what conception and dimension of “nature” is in play here? “Art” is somewhat less prodigiously polysemous, but it was significantly more so in Goethe’s day. While we tend to associate this word primarily with the sphere of aesthetic production, as in the creation of works of art, around 1800, *Kunst*, like “art” in English, could also refer to activities that would today be classified in terms of “craft.” Such crafty “arts” could also include the experimental techniques deployed by those who had adopted Sir Francis Bacon’s *novum organon* in order to induce “nature” to surrender “her” closely guarded secrets.³ What kind of “art” is this, then, that is seemingly so at odds with “nature”? Why are they in flight from one another? And on what basis, and in what manner, might their apparent reunification be effected?

In this essay, I propose to explore these questions from an ecocritical and ecophilosophical perspective. In particular, I wish to reconsider German Romantic-era understandings of the interrelationship of art and nature from the perspective of the burgeoning new field of multi- and interdisciplinary study that became known in the 1980s as “biosemiotics.”