## **ENVIRONMENTAL CULTURES**

# Literature as Cultural Ecology

Sustainable Texts

Hubert Zapf

# Literature as Cultural Ecology

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Hubert Zapf

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## Contents

| ACI | knowledgments   | VII |
|-----|---|-----|
| Par | t I Cultural Ecology and Literary Studies   |     |
| 1   | Introductory Remarks  | 3   |
| 2   | The Ecocultural Potential of Literature   | 11  |
| 3   | Sustainability and Literature   | 15  |
| 4   | Literature as an Ecological Force within Culture  | 27  |
| Par | t II Ecocriticism and Cultural Ecology  |     |
| 5   | Ecocriticism in the Twentieth Century: The Return of Nature to Writing about Culture    | 39  |
| 6   | Ecocriticism in the Twenty-First Century: The Return of Culture to Writing about Nature | 45  |
| 7   | Politicized Ecocriticism: From Nature Worship to<br>Civilizational Critique             | 51  |
| 8   | Ecological Thought and Critical Theory: From Antagonism to Alliance                     | 61  |
| Par | t III Literature as Cultural Ecology  |     |
| 9   | From Natural Ecology to Cultural Ecology  | 77  |
| 10  | Cultural Ecology and Material Ecocriticism  | 81  |
| 11  | Literature as Cultural Ecology  | 89  |
| 12  | Triadic Functional Model of Literature as Cultural Ecology                              | 95  |

vi Contents

Part IV Transdisciplinary Contexts of a Cultural Ecology

| C     | of Literature                             |     |
|-------|---|-----|
| 13    | Text and Life                             | 125 |
| 14    | Order and Chaos                           | 139 |
| 15    | Connecting Patterns and Creative Energies | 159 |
| 16    | Matter and Mind                           | 177 |
| 17    | Solid and Fluid                           | 189 |
| 18    | Wound and Voice                           | 207 |
| 19    | Absence and Presence                      | 229 |
| 20    | Local and Global                          | 241 |
| Rib   | liography                                 | 269 |
| Index |   | 295 |
| 1110  |   |     |

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## Part One

# Cultural Ecology and Literary Studies

## **Introductory Remarks**

This book offers a theory of imaginative literature based on the paradigm of cultural ecology. Cultural ecology is a new direction in recent ecocriticism which has found considerable attention in Europe and the German-speaking world but which is also beginning to be discussed in English-language publications in the field.<sup>1</sup> A paradigm in the sense used in this study is no totalizing or all-explanatory system but an explorative perspective on its subject. In its dictionary definition, a paradigm is "an example, pattern or model" (OED); a "narrative, story with exemplary, model-like character" (Duden. My trans.). In this sense of an explorative model and meta-narrative, a cultural ecology of literature proposes a transdisciplinary approach to literary texts, in which the interaction and mutual interdependence between culture and nature is posited as a fundamental dimension of literary production and creativity. Between an anthropocentric cultural studies perspective, in which nature is dematerialized into a discursive human construct, and a radical ecocentrism, in which cultural processes are basically subsumed under naturalist assumptions, cultural ecology looks at the interaction and living interrelationship between culture and nature, without reducing one to the other. Literature is seen as a cultural form in which this living interrelationship is explored in specifically productive ways, providing a site of critical self-reflection of modern civilization as well as a source of creative cultural self-renewal. This is not merely a question of thematic orientation or content but of the aesthetic processes staged in

<sup>&</sup>lt;sup>1</sup> The approach of a cultural ecology of literature as proposed in this book has evolved from previous publications in German, notably the monograph *Literatur als kulturelle Ökologie* (2002) and the edited volume *Kulturökologie und Literatur* (2008), in which the theoretical contexts and methodological implications of the approach were explored mainly by German and European scholars. The dialogue with an Anglophone audience and community of ecocritics has however begun to take place in several publications (Goodbody 2006, chapter "Theoretical Perspectives"; Rigby and Goodbody 2011: 71–83; Clark 2011: 153–155).

imaginative texts, which in this sense can be described as functioning like an ecological force within the larger system of cultural discourses.

A cultural ecology of literature is based on a functional-evolutionary view of cultural and literary history, in which literary texts as imaginative and artistic forms of textuality have acquired specific qualities, modes, and features of writing that are both interrelated with and different from other forms of writing. Literature is described as a transformative force of language and discourse, which combines civilizational critique with cultural self-renewal in ways that turn literary texts into forms of sustainable textuality. Literature uses the resources of language, imagination, and discourse for the creation of long-term, self-reflexive models of ecosemiotic complexity. If sustainability in a biological sense means the ways in which living systems remain alive and productive over time, then the cultural ecosystem of literature fulfills a similar function of sustainable productivity within cultural discourses. And if sustainability in a *cultural* sense means the ways in which the life of culture can be kept in "equilibrium with basic ecological support systems" (Stivers), then this criterion applies in a special degree to literary culture, which is characterized in its functional dynamics by maintaining a deep-rooted affinity between its modes of (re-)generation and the ecological processes of life that it both reflects and creatively transforms.

On the one hand, this approach is grounded in a general theory of cultural ecology as a field of transdisciplinary studies that has gained considerable visibility in recent ecological thought, bringing together the formerly separate epistemic domains of ecology and culture, biological life sciences and the sciences of mind, systems theory and textual theory, natural and cultural evolution in manifold and promising new ways. On the other hand, the book adapts, translates, and integrates these insights from various disciplines into a more specific theory of literature itself as a medium of cultural ecology. It focuses attention on the forms, modes, and functions of representation and communication that have evolved in literary history as a generative potential of texts. A guiding assumption of this approach is that imaginative literature deals with the basic relation between culture and nature in particularly multifaceted, self-reflexive, and transformative ways and that it produces an "ecological" dimension of discourse precisely on account of its semantic openness, imaginative intensity, and aesthetic complexity. As I hope to show

in the examples from various genres and cultures that make up the textual corpus of the book, this focus on imaginative, artistically complex texts doesn't imply any presumption of cultural elitism but rather an exploration of the critical-creative potential of the aesthetic as a vital mode of ecological knowledge and transformation. It resonates with Derek Attridge's notion of the "singularity of literature" (Attridge), even while acknowledging the indissoluble interdependence and semiotic co-agency of individual texts with its intertextual and historical-cultural environments. My attention is therefore not on a strict separation between genres or between fictional and nonfictional modes of writing but on the imaginative and artistic procedures with which they activate what seems to be a transculturally effective ecological potency of texts.

One fascinating but also disturbing implication of the recent explosion of productivity in ecocritical thought and of its expansion into more and more disciplines across the environmental humanities and beyond is the enormous challenge that it poses for individual scholars to integrate the vast, transdisciplinary but also highly specialized and differentiated knowledge that is relevant to the field. Ideally, a contemporary ecocritic would have to be conversant with the most recent state of knowledge in such diverse areas as scientific ecology, evolutionary biology, historical anthropology, social systems theory, environmental history, geography, geology, as well as phenomenology, history of philosophy, art history, media theory, gender studies, postcolonialism, globalization studies, and, of course, cultural and literary studies. The impossibility of coping as an individual with such a complex agglomerate of highly diversified forms of knowledge is self-evident. One consequence of this is that ecocritical scholarship must always be seen as part of an ongoing dialogue and cooperative form of work-in-progress between scholars rather than only an accumulation of singular isolated contributions of individual minds. Such a cooperative project corresponds to the idea of intersubjective communication circuits within an "ecology of mind" as proposed by Gregory Bateson, and it also underlies the cultural-ecological approach advocated here (Bateson 1973). The present book considers itself as part of such an ongoing dialogue. It is written from the awareness that its argument only lives from its constant exchange with other scholars, ideas, and, indeed, with the literary writers and texts that are the main source and

inspiration of its cultural-ecological argument. Another response to the huge scope and complexity of the field is to narrow down the focus of investigation both in terms of discipline and of subject matter. This is what I am doing in the present study, whose focus is explicitly directed toward the ecological potential of *literary culture*, which comprises both the scholarly disciplines concerned with literary studies and the ecological knowledge provided by literary texts themselves. Even more specifically, I concentrate in my book on examples from American literature as my main field of specialization, even though texts from other literary cultures are included as well to indicate the transnational and transcultural horizon of a cultural ecology of literature. Of course, when zooming in on such a more concrete research agenda, it turns out in the end that the multidisciplinary questions that have temporarily been bracketed, open up again on a different scale, especially in the case of the culture of literature, which is itself the site of a constant crossing of discursive boundaries and a complex fusion of heterogeneous domains of knowledge.

The argument of the book does not simply proceed in a linear way. It follows neither a merely deductive method, which would derive concrete observations from general premises of thought, nor a merely inductive method, which would develop ascending scales of generalization from the observation of concrete phenomena. It rather practices an "abductive" procedure in the sense described by Charles Sanders Peirce, which involves intuitive guesses and methodological leaps across different, heterogeneous domains of knowledge in order to establish new, hitherto unseen connections and analogies between them—in this case between the domains of ecological and literary knowledge (Peirce 1998; Wheeler 2011). The book proceeds in such a way that theory is related to texts and texts to theory in evolving feedback loops and spirals of reflexivity, in which the aim of new knowledge is successively validated by the mutually illuminating evidence of discursive argument and aesthetic concretization. Theoretical discussions alternate throughout with text-oriented analyses in the attempt to bring out the argument of a cultural ecology of literature in an ongoing dialogue between theory and text.

Nevertheless, the book follows a general structure which is organized in successive methodological steps. The first part, "Cultural Ecology and Literary Studies," introduces the aims, conception, procedure, and thesis of the book. It contextualizes its main assumptions with a view to the ecocultural

potential of imaginative literature on the one hand and the current debate on sustainability as a cultural phenomenon on the other, and it exemplifies these assumptions in three poems from different periods of American literature. The second part, "Ecocriticism and Cultural Ecology," positions cultural ecology within the wider field of ecocriticism and ecological thought, relating it to the spectrum of ecocritical directions that have evolved between nature-oriented, culture-critical, and political forms of ecology. It argues that the initial antagonism between ecological thought and critical theory is currently opening up in favor of mutual dialogue and conceptual enrichment. The third part, "Literature as Cultural Ecology," presents the general approach of cultural ecology within bio-evolutionary, systems-theoretical, linguistic, and material-ecocritical frameworks. On its basis, it develops a specific theory of literature as cultural ecology and proposes a triadic functional model for describing the transformative role of imaginative texts within cultural systems and discourses.

The fourth part, "Transdisciplinary Contexts of a Cultural Ecology of Literature," discusses various transdisciplinary contexts, which are of relevance to a cultural ecology of literature and to the sustainable form of textuality that it provides for cultural criticism and self-renewal. It focuses not on isolated concepts but on patterns of relational polarities, in which the mutually defining movement between the constitutive terms, rather than any single semantic reference domains, are foregrounded. This will help to place the approach of a cultural ecology of literature within a number of widely discussed frameworks of ecocultural debates in order to demonstrate and further differentiate its transdisciplinary potential as a generative paradigm of literary and cultural studies. These relational polarities are "Text and Life," dealing with literature as a cultural-ecological form of "knowledge of life" that self-reflexively stages complex dynamical life processes, which are described in related but different ways in the life sciences; "Order and Chaos," discussing the necessary coagency of the forces of order and chaos in both ecology and in aesthetics; "Connecting Patterns and Creative Energies," exploring the interplay between "patterns which connect" (Bateson) and transgressive excess in creative processes; "Matter and Mind," examining the dynamic interactivity between matter and mind in literary texts as exemplified in the poetics of the four elements; "Solid and Fluid," focusing on the beach as a liminal space between land and sea, culture and nature, as a particularly productive site of literary

creativity; "Wound and Voice," mapping the outlines of a cultural ecology of literary trauma narratives; "Absence and Presence," placing a cultural ecology of literature within postmodern debates on absence and presence as discursive modes of texts; and "Local and Global," tracing conflicting orientations between the local and the global, and between postcolonial and transcultural-ecocosmopolitan models of ecological thought in contemporary texts within the frameworks of climate change and the Anthropocene. In all of these chapters, different dimensions of transdisciplinarity are explored, in which the epistemological, ethical, and aesthetic functions of literature as cultural ecology are demonstrated both on a theoretical plane and in textual examples.

These textual examples are taken from different periods and genres of literary history, and they especially revolve around a number of core texts which I believe are not only milestones in American literary history but also represent particularly rich models of a cultural ecology of literature. Among these are, besides the obvious case of Henry David Thoreau's Walden, Nathaniel Hawthornes' Scarlet Letter, Melville's "Bartleby" and Moby-Dick, Edgar Allan Poe's "Masque of the Red Death," Kate Chopin's The Awakening, William Faulkner's *The Sound and the Fury*, Leslie Marmon Silko's *Ceremony*, and Toni Morrison's Beloved, along with poems by Emily Dickinson, Walt Whitman, Robert Frost, and more recent writers like Allen Ginsberg, Linda Hogan, Simon Ortiz, and A. R. Ammons. The book's argument circles back to some of these texts several times in order to establish a field of references in which various aspects and contexts of a cultural ecology of literature can be illuminated from within a network of shifting angles and frames. This textual corpus is deliberately heterogeneous and includes such aesthetically and stylistically diverse artistic models as represented by the writings of Thoreau and Poe, Frost and Hogan, Chopin and Morrison; the aim here is to pay due attention to cultural and aesthetic differences while at the same time emphasizing a shared code of literary productivity which seems to indicate a deeper, ecosemiotic potential of literature across such cultural and aesthetic boundaries. Examples from African American and Native American literatures are part of this network of core texts to indicate the transcultural and, indeed, ecoglobal implications of a cultural ecology of literature, which are underlined by intermittent references to various texts beyond US literature, including Indian, South African, British, and German literature.

However, the main focus remains on US literature, which is considered not an exclusionary national phenomenon but a multiply connected, exemplary field of literary production in which the theory and aesthetics of a cultural ecology of literature can be paradigmatically explored.

While the book deals with examples from literary art, other forms of art and imaginative production in different genres and media could equally be included in such a cultural-ecological analysis—such as film, painting, the visual arts, theater, music, opera, and so forth. While such an analysis would evidently require genre- and media-specific modifications, some of the fundamental characteristics of an aesthetic transformation of knowledge and experience as described by cultural ecology are shared across the boundaries of these genres and media—as is evidenced in the many examples of intermedial and cross-medial forms of artistic production that characterize the modern and contemporary art world. While such extensions are clearly desirable, I will confine myself in this book to an analysis of literature, even though much of what will be said about the critical-creative potential of texts can also productively be transferred to other art forms and media.

### The Ecocultural Potential of Literature

It seems to me that the enormous ecocultural potential of imaginative literature, in the sense of a specifically artistic form of cultural productivity, is just beginning to find the attention in ecocriticism that it deserves. This focus on imaginative literature as a culturally embedded but nevertheless distinct form of textuality and knowledge differs from a prevailing tendency in ecocritical studies to consider questions of art and the aesthetic as marginal to the main task of tracing and identifying environmental issues in texts. (Cf. also Easterlin 39ff.) To be sure, ever more examples from nonrealist fiction and other genres of imaginative writing have been included in ecocritical analyses; but more often than not, they have been treated rather indiscriminately with other forms of textuality and not been explored as distinctive, semiotically condensed models of ecocultural critique and communication. The insistence on such differences in this book is not a question of hierarchy or ideology but of historical and textual evidence. Its argument assumes no metaphysical autonomy of the aesthetic but rather a metadiscursive space that the aesthetic transformation of cultural discourses opens up in language, text, and communication.

More generally speaking, this attention to difference and evolutionary diversity in the emergence and functional differentiation of textual genres and modes of writing has its foundation in ecological thought itself. To be sure, one central axiom of ecological thought is universal interconnectedness in the sense of Barry Commoner's First Law of Ecology that "everything is connected to everything else" (Commoner). On the other hand, however, an equally important axiom of ecological thought is diversity, that is, the acknowledgment of the emergence and coexistence of multiple forms of life and culture, which are interrelated but nevertheless also distinct from each

other, connected but also singular in their evolutionary signature and non-identity. This is expressed with particular acuity in Morton's deconstructionist ecological philosophy of all existence as coexistence, as radical alterity within a shared world of planetary coexistence (Morton 2010). In a cultural-ecological approach, this relates not only to a material or bio-existential level but to processes of evolutionary cultural differentiation, and it means that any ecological account of literary and cultural history has to proceed on the two fundamental assumptions of an ecological epistemology, interrelatedness *and* diversity, similarity *and* difference, connectivity *and* singularity. By implication, this also applies to literature and art as forms of cultural production that have developed in coevolution and competition with other forms of cultural production in cultural history. It seems crucial from a cultural-ecological perspective to consider art and literature not just as illustrations, however well-intentioned, of already existing forms of knowledge but as explorative forms of cultural knowledge and creativity in their own right.

Imaginative literature is clearly interacting with other forms of cultural discourse and is in many ways composed from the ideas, concepts, themes, values, symbols, and worldviews transmitted by them. But it is also the other of these discourses, a different form and medium of representation with its own codes and autopoetic rules of production. Indeed, one way of describing the specific dynamics of literary texts is that, within their imaginative counter-discourses, those two ecological principles connectivity and singularity, relationality and difference—are brought out in special intensity. Literary texts are sites of radical strangeness, alienation, and alterity, both in terms of aesthetic procedures of defamiliarization and of existential experiences of alienation and radical difference; and they are also simultaneously sites of reconnection, reintegration, and, at least potentially, of regeneration on psychic, social, and aesthetic levels. In foregrounding this ecocultural potential of aesthetic texts, I will deal in this book not primarily with environmental writing in a thematic sense but with texts which are less obviously relevant for ecocritical than for literary contexts. Indeed, on one level, the textual examples and analyses offered in the book seem to indicate that there is a degree of correlation between the artistic and the ecological potency of texts. My examples are diverse in terms of period, genre, and aesthetic conceptions; but all of them are cases of that artistic potency, which turns out to be inherently connected to their agency as an ecological force within cultural discourses.

Some of my textual examples are therefore, inevitably, taken from what has come to be regarded with suspicion as the canon of "great works" of literature, while others represent the writings of less established authors. For some time now, the critique of traditional canon-formation as a strategy of cultural power and exclusion has led to continuous revisions and extensions of the traditional canon during the past decades. Nevertheless, in this revisionary dynamics literary scholarship still needs, at some stage, to rely on criteria of quality, representativeness, or some other form of artistic or cultural significance for the revaluation of the authors, works, genres, or styles that it includes in the new corpus of relevant texts or literary phenomena (Bartosch 2012). Both the tradition of past works of literature and art, which are still thought of as important today, and the inclusion of new works in a revised canon are dependent on explicit or implicit criteria of evaluation, however cautious and provisional these criteria may be. The charge that the canon of great works of literature has often been constructed in complicity with historical power formations related to nation, class, gender, ethnicity, or sexuality was doubtlessly justified in the face of the massive exclusion of non-western, non-white, non-male, nonheterosexual writers from a normatively homogenized practice of selection and artistic recognition. But this doesn't mean that works of literature of the past are solely the construct of such power strategies. On the contrary, as I will argue later in more detail, there has always been an intrinsic tension between the creative energies of literary artworks and the political and cultural systems within which they are inevitably positioned. This tension has sometimes been especially emphasized, such as in romanticism, surrealism, or postcolonialism, and sometimes been downplayed or covered over, such as in classicism, socialist realism or some versions of affirmative postmodernism. But it is one important source of the criteria that have evolved and are constantly being redefined in the literary field for evaluating the power of imaginative texts as complex forms of cultural criticism and self-representation. It points to a dimension in texts which includes, but also goes beyond, the conditions of their historical-cultural emergence, turning them into a transhistorically effective site of knowledge and aesthetic experience that can be activated in ever new historical situations and cultural contexts by ever new generations of readers.

In this view, the power of literature is not a power in the sense of dominance or domestication but a power of production and creativity, in a Nietzschean sense of the productive energies of the creative human being, *der schaffende Mensch*, as an archetype of civilizational self-renewal (Pütz). The artwork in this view is not only *ergon* but *energeia*, a living force field of transformative energies which both subvert and enhance human consciousness and existence in rationalized modern societies. As a singular product and event, the individual text nevertheless feeds into the circuits of literary communication which are sustained in the continuous exchange between texts and readers. Literary texts are open semiotic systems, which depend on the active participation of their readers in the creation of their meanings. The power of imaginative texts is not so much the empowerment of writers but the empowerment of readers in terms of a creative activity that both thrives on and goes beyond differences of texts and cultures. In this way, the creative energies of texts can travel across periods and cultures and can be shared by a potentially global audience.

All literature, in this sense, is always also world literature (Arac). It does not exist in the diachronic context of its historical genesis alone but in a synchronic relation of constant reaction, interaction, exchange, and copresence with other texts in an ever-expanding literary field. It represents a sustainable form of textuality, which, in the very indeterminacy and polysemic openness of aesthetic processes, provides a source of critical self-reflection and ever-renewable creative energy for ever new generations of readers (Rueckert).

## Sustainability and Literature

To discuss literature in connection with the concept of sustainability raises the question about its relationship to economic, social, and ecological concepts of sustainability, which are being debated on a broad scale in the environmental sciences. Sustainability in its German equivalent of Nachhaltigkeit was first used as a term in the early eighteenth century in the context of forestry "to characterize a management of forests that would not deplete resources, but allow the renewable natural resources to regenerate and thus ensure its exploitation in the long term" (Kagan 9). However, the concept only gained more widespread significance in the later twentieth century within economic debates about the future of industrial capitalism and the limits of growth, as manifested in the Club of Rome report from 1972, in which the exhaustion of natural resources by reckless economic exploitation was first addressed as a massive threat to human well-being and survival on the planet, and in the United Nations Brundtland Report of 1987, in which sustainable development was primarily defined as a transgenerational justice problem:

Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development does imply limits – not absolute limits but limitations imposed by the present state of technology and social organization on environmental resources and by the ability of the biosphere to absorb the effects of human activities. But technology and social organization can be both managed and improved to make way for a new era of economic growth. (Brundtland Report)

While such notions of sustainable development kept environmental policies within the framework of a linear model of overall economic

growth, subsequent and alternative notions of "sustainability" involved the call for deeper and more radical changes across different areas of society not only within the economic system itself in terms of its adaption to and responsible use of the natural ecosystems and energy resources on which it relies, but in terms of the recognition that the social organization of human civilization in all its diverse aspects depends on a balanced relationship between economic and ecological as well as social factors. On a personal and community level, this links up with the concept of sustainable living, which includes potentially all areas of life in their implications for a sustainable future. One such holistic approach to sustainability linking the areas of economy, chemistry, industry, society, and lifestyle is the "Cradle to Cradle" design developed by Michael Braungart and William McDonough, in which industrial processes are no longer seen as "downcycling" products to waste but as fully recycling both inorganic and organic materials into ever new use without loss of quality. Production and consumption is composed of technical as well as biological "nutrients" in a metabolism of completely self-renewing life cycles. The Cradle to Cradle design thus aims to reconcile economic with environmental principles by turning into practice the vision of a socially just and ecologically sustainable future in a new, "regenerative" phase of the industrial revolution (Braungart and McDonough). Another promising example of the practical implementation of ideas of sustainability in the economic world is Herrmann Fischer's concept of Stoffwechsel, or "metabolism of substances" (Fischer). In the shift from petrochemical to solar energy, Fischer sees the possibility of an almost complete avoidance of waste, toxic pollution, and environmental abuse while at the same maintaining a high degree of quality and diversity in economic products and social living standards. His model of sustainable productivity, which he advances as a viable alternative for a future economy, is based on decentered, regional, and local structures, which allow for a relative autonomy from the influences of large-scale businesses that are mostly controlled by the petrochemical industry. What is especially interesting in our context is that for his company Auro Naturfarben, which produces natural colors from solar chemistry, Fischer has adopted concepts from German romantic literature such as Novalis' notions of Übergang, or "transition," and innere Mannigfaltigkeit, or "inner manifoldedness,"

as connective-holistic principles of a sustainable, environmentally and ethically oriented economic practice (Fischer).<sup>1</sup>

In view of this general relevance of the concept of sustainability, it has taken a surprisingly long time to be acknowledged and find serious attention as a phenomenon of *culture*. In the general public, the three pillars of sustainability comprise ecology, economy, and society—but usually not culture. One of the few surveys of cultural dimensions of sustainability is Ulrich Grober's Sustainability: A Cultural History (2012), which gives useful insights into the long, though rarely adequately acknowledged history of sustainable thinking reaching back long before the present sustainability debate. At universities, typical disciplines involved in sustainability studies include economics, material sciences, physics, biology, chemistry, environmental history, geography, sociology, and political science—but rarely disciplines from cultural and literary studies. It is true that a growing number of the sustainability programs in university curricula do include the occasional inputs from the social sciences and the humanities. Also, there have been attempts to implement ideas of sustainability within programs of education and teacher training, in order to raise the awareness of educators and students for responsible learning cultures of the future in terms of an "ecological literacy" (Stone and Barlow). Cultural sustainability studies with a didactic orientation have been instituted in various places such as the Center for Ecoliteracy: Education for Sustainable Living at Berkeley or the UNESCO supported program at the Center for Sustainability and Cultural Ecology at Siegen University (Wanning). Major influences on these projects have been David Orr and Fritjof Capra, who have helped to spread and popularize ecological knowledge in terms of its relevance for all domains of science, politics, society, culture, and, particularly, of education (Orr). For the most part, however, definitions of cultural sustainability remain rather general and unspecific: "To us, sustainability is the dream of living well; sustainability is a dynamic balance with others and the environment, it is the harmony among differences" (Gadotti 13–14). Yet even though such programs are signs of an increased awareness of the cultural dimension of sustainability, it has not yet found the systematic and "sustained" attention that it deserves.

See Novalis, "Traktat vom Licht": "Alle Wirkung ist Übergang. Bei der Chemie geht beides ineinander verändernd über." ("All agency is transition. In chemistry, different substances are mutually transforming and changing into one another." My trans.) (Novalis 1802)

There has also been a growing discussion of sustainability in contemporary art and art theory, pioneered by developments in landscape and urban art such as Alan Sonfist's *Time Landscape* reintroducing a pre-colonial indigenous forest in New York City, or Joseph Beuys' project 7000 Oaks—City Forestation Instead of City Administration at the 1982 Documenta 7 in Kassel, which involved the planting of oaks and of accompanying basalt stones over several years and, extending from the exhibition site into the city, still shapes the cityscape today. This links up with experimental forms of architecture not only in terms of providing green spaces in cities but of creating new concepts of urban living in which technomorphic and biomorphic forms of architectural composition are interfused, pioneered already in Friedensreich Hundertwasser's innercity biotopes, and successively spreading into different architectural styles, green building programs, and concepts of "sustainable design" (Jarzombek). Sustainable architecture is meanwhile officially endorsed, for example, by the Royal Institute of British Architects as a "broad concept which aims to reduce the adverse effect of human activities on our world, particularly climate change" (RIBA). While it follows "eco-friendly" criteria such as energy-efficiency, carbon dioxide neutrality, and recycling of material resources, its aesthetic features are also often deliberately experimental and innovative. The agenda of sustainability also gained popularity in different variations of eco-art, earth art, and land art, in which natural processes and materials were integrated or even became primary agents of sustained aesthetic activity, as well as in various forms of waste art and "post-environmental art," in which the difference between nature and culture was blurred and emphasis was placed on procedures of recycling, upcycling, or reusing natural-artistic material (Kagan 372). In the first exhibition directly featuring sustainability as a topic, Beyond Green: Toward a Sustainable Art at the Smart Museum in Chicago in 2005, sustainable art was described as "an approach that balances emotional, social, economic, and aesthetic concerns...emphasizing the responsible and equitable use of resources and linking environmental and social justice" (Smith 13).

In terms of academic attention and research, sustainability as a concept has been viewed rather critically in parts of the humanities because of its usurpation by primarily economic-technological models of environmental epistemology and agency. As Stacy Alaimo, a member of the interdisciplinary research center in the School of Sustainability at the University of Texas,

Arlington, observes, the dominance of a "sanitized term of sustainability" that does not "in any way question capitalist ideas of unfettered expansion" creates a problem especially for the humanities and for literary studies, because its adherence to the "gospel of efficiency" involves a preference for disciplines such as "engineering, the sciences, and maybe architecture," at the expense of "philosophical questions, social and political analyses, historical reflections, or literary musings," which seem a waste of time in the face of pressing environmental realities and responsibilities and thus "irrelevant for the serious business of sustainability" (Alaimo 2012: 560). In its adaptation to cultural and humanist studies, then, the discourse of sustainability needs critical questioning and epistemic extension from such a narrow "techno-scientific focus" toward an inclusion of "issues of human choice involved in putting sustainability into effect and ... the socio-cultural practices, behaviours, and structures such choice involves" (Goeminne 20). It requires recognition that "one's very self is substantially interconnected with the world" (Alaimo 2012: 561), and that this entails a "regrounding of the subject in a materially embedded sense of responsibility for the environments he or she inhabits" (Braidotti 137). Braidotti helpfully differentiates the concept further by adapting Deleuze's processual thought to the idea of "sustainable becoming," relating it to everyday practices of personal life as "transformative micropractices," which should be complemented on a collective level by practices of environmental justice and environmental-health activism (Alaimo 2012: 561). Sustainability in this cultural sense would then involve the transformation of a "technocratic, anthropocentric perspective" toward "more complex epistemological, ontological, ethical, and political perspectives," which counter the tendency "to externalize and objectify the world" and instead broaden this revised concept of sustainability by incorporating the "lively relationalities of becoming of which we are part" (Braidotti 393). It will be the argument of this book that literature and art provide one medium of cultural representation and communication in which this more complex, self-reflexive, and ethically responsive concept of sustainability or "sustainable becoming" (Braidotti 393) is part of its generative potential and transformative function within the larger discursive system of cultural knowledge and semiotic practices.

Meanwhile in Europe, the Art and Sustainability Program at the University of Rotterdam (since 2000) and the *Tutzinger Manifesto for the cultural-aesthetic* 

dimension of sustainability (2001) were following comparable intentions in trying to activate the creative intensities of art for long-term perspectives of sustainable living. Criteria that were established for an aesthetics of sustainability ranged from sensitivity to nonhuman nature to affirming cultural diversity, from a new awareness of space and time to "sensual awareness" and "aesthetic competence" as a force of designing "life-sustaining futures," from the recovery of "forgotten nature in our culture" to the inclusion of the social values of justice, participation, and community in ecological thought, guided by the conviction that an "aesthetics of sustainability will always be an aesthetics of participation as well" (Kagan 346). Taking up and systematizing such developments in art and art theory, Sascha Kagan in his study Art and Sustainability conjoins systems thinking, complexity science, and aesthetic theory into a model of sustainable art, distinguishing it from "unsustainable," socially disconnected forms of modernist art, and supplanting an autonomous aesthetic by a process- and interaction-oriented art whose explicit purpose is to transmit "norms and values ... informing the transition to more sustainable practices" (Kagan 16). Kagan's approach is interesting to this study because it relies to a considerable degree on Gregory Bateson's ecology of mind, which also informs the conception of a cultural ecology of art and literature proposed in this book. In particular, Kagan posits the "sensitivity to patterns which connect" (225f.), which Bateson defines as the core feature of both ecology and aesthetics, as a central aspect of sustainability in art, in which complex processes of interaction in the living world of material nature are linked with the complexity of cultural processes and in which the participatory aesthetic response becomes an intrinsic part of artistic sustainability. Such ideas are also relevant for the notion of sustainable texts I am suggesting here. Aesthetic forms of communication represent a special potential as a sustainable cultural practice because of their "heightened sensibility" for the connectivity and complexity of the natural as well as the cultural worlds. In their "expanded mode" (218) of nondiscursive knowledge, they can tap into deeper, unconscious realms of mind and life, activating them as alternative forms of dealing with the contemporary ecological crisis within longer-term perspectives of evolution and survival beyond short-term economic interests. What is especially important is the emphasis on the active, participatory role of the recipient in the creative processes of art, which are recursively related to creative processes in nonhuman nature but are also necessary for the continued evolution and self-renewal of human civilization.

Kagan's approach marks a significant contribution toward creating an awareness of the relevance of art to the overall question of sustainability and indicates some of the ways in which conceptions of a cultural-ecological aesthetics can be productively compared across the boundaries of different genres and media. Yet Kagan's book is exclusively devoted to the visual arts and does not relate to literary culture. It also favors a more normative and less inclusive concept of aesthetics and sustainability than I am proposing here. It conceives of ecological art as a medium of transmitting and conveying certain ethical and political environmental agendas rather than as a form of ecological knowledge and communication in its own right, which can never be fully transparent to and translated into other forms of discourse. While Kagan marshals aesthetic processes for fostering the larger aims of sustainable development outside art, I want to make the point here that art itself, and especially literary art, constitutes a form of sustainable aesthetic and textual culture.

The relation of sustainability to literary texts and aesthetics has so far rarely been explicitly addressed. Apart from occasional contributions in various journals, a recent special issue of American Literary History has been devoted to the subject, in which the concept of sustainability is examined in a spectrum of contributions addressing topics such as the relation between the humanities and the sciences (Wood); environmental justice aspects of sustainability implied in the "indigenous cosmopolitics" in literary works by indigenous authors (Adamson 2012); the intertwined aspects of race and labor within a critical socioeconomic contextualization of sustainability (James 2012); reimaginings of oil-dependent economic practices in texts that confront "the challenge of powering down to create smaller-scale, post-oil economies" (quoted in Slovic 2012: 185); nonlinear modes of imaginative stagings of the food discourse in film and popular media (Newbury); disruptive weather and water conditions as an environmental-historical subtext of Faulkner's novel The Sound and the Fury (Parrish); and more general epistemological questions on the potential contribution of the humanities to the sustainability discourse in terms of a critical and self-reflexive metadiscourse on the categories defining that discourse (Philippon); all of them revealing, as Slovic rightly points out,

that sustainability is no fixed concept, content, or program but "a moving target, a distant goal, not a permanently achievable plateau of being" (2012: 187). All of these perspectives are promising and useful, and they suggest that the dialogue between the discourses of literature and sustainability may have a considerable potential for the future of ecocritical thought. For the most part, though, these are still first steps that are largely focused on thematic issues and environmental content rather than on art and literary aesthetics itself as a site and medium of cultural sustainability.

Two short contributions, however, can indicate complementary ways in which this relation can be conceived. Both of them consider sustainability as a concept connected with long-term ethical perspectives of human living that is transmitted in texts. One comment is John P. O'Grady's article in ISLE on "How Sustainable is the Idea of Sustainability?", in which the author questions the predominance of a managerial, economic-developmental and scientific approach to sustainability. O'Grady exposes fundamental ambiguities of the term. For one thing, the reality of life and nature is not characterized by unchanging constancy but by constant change, since "all beings flow" and "everything is in flux" (3), and therefore predictions about future developments, which are required by any rational sustainability management, are quite uncertain and unreliable. For another thing, the notion of sustainability involves not just external but internal, ethical values, which have to do with the question of the "good life" in the ancient classical sense of eudaimonia, the sense of living well in a fulfilled, responsibly balanced relation between the self, other humans, and the nonhuman environment. This ethical sense of a "good and sustainable life" (7), however, is nothing objective but a question of the imagination, of literary texts, which can help to reconnect the abstract modern mind to the "lost face of the world" (Hillman 149–50, quoted in O'Grady 7). O'Grady exemplifies this in a poem by Wendell Berry, "A Meeting in a Part," in which the very mutability and changeability of the world, whose existentially most distressing fact is death, becomes a source of sharing and "understanding whatever it is that truly sustains us" (8). The poem, which deals with the return of a dead friend in a dream, becomes the medium of a spiritual form of sustainability, which both reflects and redeems what is continually lost in the material world of nature, time, and history.

While O'Grady emphasizes the fundamental difference between poetic and scientific concepts of sustainability, Hannes Bergthaller insists on the relevance of the latter for the ecocritical analysis of literature in his response essay to O'Grady in ISLE on "Humanism and the Problem of Sustainability in Margaret Atwood" (Bergthaller 2010). Criticizing O'Grady's approach as symptomatic of a romantic ecology that posits a pristine, precultural state of nature as an ideal of human cultural self-realization, Bergthaller points out how Atwood, in the dystopian, postapocalyptic scenarios of her novels *Oryx and Crake* and *The* Year of the Flood, shows how human nature is no reliable basis for a sustainable future but is fundamentally flawed and driven by egocentric rather than ethical or environmentally responsible motives. Human nature therefore needs the correctives of rational cultural self-management and self-domestication that are represented by science and technology but also by "anthropotechnologies" (Sloterdijk 23, quoted in Bergthaller 729) like the arts. The creation of a new, ecologically perfectly well-adapted post-human species, which the socialgenetic engineer and "mad scientist" Crake achieves, is the extreme, perverted manifestation of a civilizational impulse of human self-immunization and selfoptimization, which the novel opposes to the traditional, flawed humanism of Snowman alias Jimmy. According to Bergthaller, neither of these poles can claim validity, and the failure of both can only demonstrate that human nature needs the "imaginary order" of culture that "transcends and, as it were, extenuates the biological givens" (739) for its successful adaptation to the goal of sustainability. Sustainability in this sense doesn't result from adaptation of humans to nature but from cultural attempts to adapt human nature to imperatives of survival that are posed precisely by the disastrous results of the uncontrolled and ruthless but nevertheless "natural" species expansion of humans.

Whether this is a fully convincing account of Atwood's dystopian account of the ecological crisis remains open to debate; most critical responses tend to read her novels as critical comments on the modern myth of the *homo faber* and the excesses of a globalized capitalism, which is not simply to be identified with an expression of human "nature" but with a belief in scientific-technological progress that calls for ethical alternatives to check its uncontrollable exploitation of both human and nonhuman nature (DiMarco). The problem with interpretations that subsume the arts under the

"anthropotechnologies" (Sloterdijk) of human self-domestication, is that they tend to underrate the radical social and cultural criticism that is contained in literary responses to a globalized capitalist system such as in Atwoods novels but also in many other literary texts. Whereas O'Grady locates the contribution of texts to sustainability in their liberating of human nature and its spiritual potential from the restrictions of economic and scientific control, Bergthaller, in contrast, assigns the sustainability of texts to their role as part of a larger civilizational program of "bio-political control" and cultural self-domestication of the human species (729). O'Grady's concept of sustainability is internal and mystic, while Bergthaller's is scientific and rational. O'Grady's concept looks to texts for the recovery of a lost past, whereas Bergthaller considers them a medium of probing viable perspectives for a yet-to-be gained future. Both approaches tend to link literary texts with a certain agenda rather than with the functional potential of their own evolved forms and aesthetic procedures, which is what the present study is aiming for.

Perhaps the figure of Snowman and Jimmy in Oryx and Crake points toward characteristic ambiguities involved in the question of literature and sustainability. He is a half-imaginary figure "existing and not existing, flickering at the edges of blizzards...known only through rumours and through its backward-pointing footprints" (Atwood 7-8). As Steve Kangas writes: "These mythic and multi-directional footprints (they point backward as they move forward) represent Snowman's liminal position and potential power—to repeat a past cycle of aggression against nature in the name of personal profit, or to re-imagine a way for future living grounded in a genuine concern for others" (Kangas 2). This double orientation on past and future is underlined in the flashback technique of the narrative. It also involves a double ambiguity, which seems to me an important feature in the relation between literature and sustainability. While the look backwards can become a retrogressive fantasy preventing change and development, it is also necessary for developing sustainable, sufficiently complex perspectives for the future. And while the look forward without a sufficiently complex awareness of the past can lead to unsustainable solutions, it is likewise essential in the attempt to search for "new beginnings" (DiMarco) after past catastrophes, which is inscribed into this and other novels. Literature acts between these poles in interconnected zones of radical ambiguities, and the open ending of Oryx

and Crake, where Snowman and Jimmy meets the human strangers intruding from the past into a posthuman world, is an exemplary case, since it illustrates both the recursive connection of past and future in the exploration of new beginnings and the dialogic openness of the text, which is the condition of its co-creative reception by the reader.

Thinking sustainability is thus by no means opposed to innovation and creativity as such. While sustainability contradicts and endeavors to overcome the currently prevalent short-term, instrumental, and profit-driven form of economic and scientific innovation, it necessarily presupposes an alternative, more complex notion of cultural creativity oriented on the long-term survival of cultural and natural ecosystems as interdependent realities enabling the continuation of life on the planet. It has to constantly negotiate between the poles of continuity and change in the imaginative anticipation of possible future scenarios in a newly conceived, democratically legitimated form of cultural evolution, which combines the awareness of its natural-historical conditions of emergence with the consideration of the ethical-ecological consequences of its future agendas. Thinking sustainability in this sense involves "no dogma, no fixed set of formulas and rules that tell you you have to do this and that in order to be sustainable." Rather, it provides "a playing field where one can experiment" (Dürr in Grober 2002: 175, my trans.). And it seems to me that art and literature represent a form of cultural creativity that provides important playing fields for such experiments in the interest of longterm cultural evolution.

In spite of the semantic openness and variable use of the concept of sustainability in culture and literature, a first approximation of the notion of "sustainable texts" seems possible on the basis of the various aspects discussed so far. It involves the basic assumption that imaginative literature as a special, artistic form of cultural textuality is characterized by several traits of a sustainable cultural practice: a *long-term* perspective of culture-nature co-evolution vs. short-term concerns; a double orientation on continuity and change, on past and future, cultural memory and cultural creativity; a sensitivity to the multi-layered forms of relationality between self and other, mind and life, humans and the nonhuman world, encompassing perceptual, sensory, emotional, cognitive, communicational, and creative dimensions; an attention both to life-sustaining diversities and to patterns of connectivity

across the boundaries of categories, discourses, and life-forms; and an implicit but crucial relevance of this ecocultural potential of imaginative texts for the *survival* of the cultural ecosystem in its long-term co-evolution with natural ecosystems. It will be an important point of my argument that these aspects of sustainability describe no self-evident or objectively given set of properties but a *potentiality* of texts that only comes alive through its ever new actualizations within always changing historical, social, and individual conditions.

In concluding this chapter, I would like to add that while the present book is, on one level, a contribution to the relation between literature and sustainability, its main concern and argument are not positioned primarily within the wider discourse of sustainability in disciplines outside the humanities but within the framework of ecological literary studies and ecocritical theory. Sustainability in the textual sense advocated in this book is no fixed or unitary concept but a field of cross-discursive resonances that is not foregrounded throughout but co-emerges with the developing argument of a cultural ecology of literature. It is certainly not a concept that would support a notion of literature as a mere anthropotechnology of civilizational self-domestication but explicitly includes the radical potential of literary art, both in terms of cultural critique and aesthetic experiment. The sustainability of texts is, paradoxically and inseparably, tied to its innovational aesthetic function as a medium of continual imaginative self-renewal within society and culture.

## Literature as an Ecological Force within Culture

In its most general form, the thesis of a cultural ecology of literature is that imaginative literature acts like an ecological force within the larger system of culture and of cultural discourses. This thesis raises a number of questions, which have already been cursorily addressed but which will have to be more substantively answered in the course of this book, such as what concept of literature and the text is involved here; what does it mean to speak of texts and linguistic artifacts as an ecological force; and what is the relation of this textual-ecological force to cultural history and to the larger system of cultural discourses? As has been indicated already, the concept of literature informing this study is a functional-evolutionary concept, which considers the evolution of aesthetic and imaginative forms of textuality as doubly coded—as a deeprooted, transhistorical feature of human cultural evolution that has manifested itself across different cultures and periods from archaic to modern civilizations; and as a historical-specific phenomenon as the result of the functional differentiation and specialization of different kinds of writing, discourse, and cultural practice especially since the eighteenth century. In this process, literature as a "depragmatized" (Iser) form of textuality has gained increased even though always only relative—autonomy toward other, pragmatically differentiated forms of text and discourse (e.g., political, economic, scientific, bureaucratic, religious, or ideological discourses) (Luhmann; Finke 2003).

Literature has thereby evolved into a kind of discursive heterotopia that operates both inside and outside the discourses of the larger culture, opening up an imaginative space in which dominant developments, beliefs, truth-claims, and models of human life are being critically reflected and symbolically transgressed in counter-discourses to prevailing economic-technoscientific forms of

modernization and globalization. Literary texts provide a transformative site of cultural self-reflection and cultural self-exploration, in which the historically marginalized and excluded is semiotically empowered and activated as a source of their artistic creativity, and is thus reconnected to the civilizational reality-system in both deconstructive and reconstructive ways. In this first approximation, literature as an ecological force within culture operates in a twofold way: as a sensorium and imaginative sounding-board for hidden conflicts, contradictions, traumas, and pathogenic structures of modern life and civilization; and as a source of constant creative renewal of language, perception, imagination, and communication. As a medium of radical civilizational critique, literature simultaneously provides a sustainable generative matrix for the continuous self-renewal of the civilizational system.

To describe this cultural work in terms of an ecological force is meant to imply that it is conceived as a dynamic, transformative aspect of discourse, which is not fully accounted for in merely conceptual or rhetorical terms but involves a form of textual energy,1 a vital movement of acting and reacting between signifiers, bodies, minds, selves, environments, chronotopes and, pervading them all, the fundamental interaction between culture and nature. It is a force which transgresses boundaries of linguistic and social conventions, creating ecosemiotic energy fields in borderline situations between identity and difference, conflict and communication, distance and empathy, climax and denouement, crisis and resolution, language and silence. It is a force which manifests itself not only in linear narrated worlds and story lines but in alternating rhythms of intensity, of expansion and contraction, acceleration and deceleration, emergence and disappearance, absence and presence, opening and closure, endings and new beginnings. It is a force which brings discourse "alive" by enacting complex dynamical life processes in the ecocultural biotopes of language and the text. Literature in this sense is the self-reflexive staging of ecosemiotic life processes on the boundary of culture-nature interaction. It is a sustainable form of text operating in a high-energy field of open discursive

For the notion of "stored energy" as a conceptual metaphor for the renewable creativity of literature, see Rueckert. The translation of biophysical into psychic, cultural energy is also an important topic in Peter Finke's evolutionary cultural ecology (Finke 2003; see also Chapters 9 and 14). Cultural and textual energy are used here however not merely in terms of "stored" but of creative, transformative energy.

space, and gaining its ever-renewable creativity from the reflexive interactivity between natural and cultural ecosystems.

To an extent, the concept of an ecological force I am using here with reference to a textual-cultural phenomenon evokes analogies to the "forces" constituting the processes of emergence, evolution, and dynamic self-organization in the biophysical world as described by scientific ecology. Material ecocritics have highlighted this "creative" dimension of the material world as an inseparable context and matrix of human and cultural creativity (Iovino and Oppermann). The notion of force therefore plays an important role in material ecocriticism as well, which posits a fundamental continuity between "human and nonhuman forces" (Oppermann 2014: 21), between creative processes of matter and processes of discursivecultural creativity. The ecological force of texts I am describing is however not simply continuous with material bio-physical forces but gains its artistic potency through the *imaginative translation* of natural into cultural energies, of elemental forces of life into the communicational, self-reflexive space of language, culture, and aesthetics (see Chapter 9 and "Literary Creativity as Translation of Natural into Cultural Energy" in Chapter 15). It is encoded in multiple ways into the images, plot-lines, narrative scenarios, and polysemic structures of texts, which require the active participation of the reader—and, by extension, of the interpretive community of (eco-) critics—to come alive. It is in this culturally mediated, metaphorical sense, which yet resonates with its material sense, that I am using the concept of "force" in my cultural-ecological theory of texts.

### Literature as an ecological force in poems by Emily Dickinson, Linda Hogan, and A. R. Ammons

Before I develop this idea of literature as cultural ecology further, I would like to indicate its significance in three poems from different periods of American literature, one from the nineteenth, one from the late twentieth, and one from the twenty-first century. The poems are not merely deductive illustrations of that idea, however, but rather the living evidence of a deeper generative code of imaginative literature, which has anticipated forms of modern cultural ecology by staging the reflexive interactivity between biocentric and anthropocentric forces, between the human and the nonhuman domains,

as a creative matrix of texts. As has been pointed out at the outset, this incorporation of literary texts themselves into the argumentative structure of the book is a vital part of the project of a cultural ecology of literature, in which the cultural knowledge produced by imaginative texts is seen not as derivative of other disciplines and epistemic frames but in which literature is considered as a generative site and source of distinct forms and functions of (eco-) cultural knowledge in its own right. A cultural ecology of literature therefore operates on two interconnected levels: as a functional model of literature, it refers to the cultural work and functional dynamics performed by the texts themselves; as a scholarly project, it refers to the analysis and theorization of this cultural work and functional dynamics as a source and inspiration for ecocritical theory and practice.

I begin with a poem by Emily Dickinson.<sup>2</sup> At first sight, Dickinson hardly comes to mind when one thinks of eco-literature but is rather known for her highly self-reflexive, language-conscious, formally innovative, and experimental poetry. But it is precisely this depragmatized and defamiliarizing mode of aesthetic discourse that provides the imaginative space for the ecopoetic and eco-ethical force of the text (Emily Dickinson 515).

A narrow Fellow in the Grass Occasionally rides— You may have met Him—did you not His notice sudden is—

The Grass divides as with a Comb—A spotted shaft is seen—And then it closes at your feet And opens further on—

He likes a Boggy Acre
A floor too cool for Corn—
Yet when a Boy, and Barefoot—
I more than once at Noon
Have passed, I thought, a Whip lash
Unbraiding in the Sun

<sup>&</sup>lt;sup>2</sup> The following analysis of Dickinson's poem is taken, in part, from my essay "Literary Ecology and the Ethics of Texts." *New Literary History*, 39.4 (2008): 847–868.

When stopping to secure it It wrinkled, and was gone—

Several of Nature's People
I know, and they know me—
I feel for them a transport
Of cordiality—

But never met this Fellow Attended, or alone Without a tighter breathing And Zero at the Bone—

The referential content of the poem seems obvious enough—it is the presence of a snake as a special creature in its natural environment. The grass, a boggy acre, cool and unfit for human cultivation, is mentioned as the snake's habitat, along with the personal encounter of the child with this creature, which continues to exert its shock-like, both fascinating and paralyzing, effect on the adult speaker. But of course, the text is no form of realist nature-writing but only begins to unfold its rich semantic potential when we look at the ways in which this primary experience is aesthetically communicated. The poem lives from the strangeness of the familiar—a "fellow" is someone with whom one shares a familiar code and life-world, and yet this particular fellow is also characterized by strangeness, by the unexpected and unpredictable, by breaking out of habitual patterns of feeling, behavior, and perception. What is conveyed here, therefore, is the vital interconnection of the human subject with a symbolic life force that is nevertheless unavailable, with an "other" that is radically alien yet also affects the innermost core of the self. Dickinson's poetic staging of strangeness here reminds one of Morton's notion of the "strange stranger" designating a dimension of radical difference and otherness that characterizes human as well as nonhuman life (Morton 2010); but the snake in Dickinson is rather a "familiar stranger," a highly ambiguous phenomenon that is both very distant and intimately close to the human speaker.

What the poem thus unfolds in its formal composition and its interfusion of metaphor and narrative is an uncanny dialectic of familiarity and strangeness, of the visible and the invisible, of presence and absence, of communication and isolation, of life and death as basic forms of being in the world. The snake is one of the most frequently recurring archetypes of the human imagination,

occurring in western and non-western literatures alike throughout the ages as a powerful image of dangerous vitality inspiring both fear and fascination (Wilson 1984: 83-102). The snake symbol, however, also resonates with American cultural history. On this level, it represents a counterforce to the pastoral interpretation of America as a new Garden of Eden, a colonial project in which the presence of the alien and unavailable was already implicated in its very conception of order, mastery, and control over the human and nonhuman world. The image in which the boy at first perceives the snake, the "whip lash," is a sign of this cultural illusion of mastery and control over a brightly visible, passive, and literally "graspable" nature, which however at the attempt of "securing it" turns into something ungraspable, active, shape-changing, and absent—"It wrinkled and was gone." The whip as an icon of master-slave relations, of dominance and domestication, which in the context of midnineteenth-century United States has additional overtones, is transformed here into a subversive counterforce. Also, in this third stanza, we have a further alienating effect in that the identity of the human subject, too, breaks out of conventional patterns such as gender roles when Dickinson's poetic self surprises the reader by turning herself into a "boy," thereby imaginatively changing her place and perspective on life, in fact participating in the shapechanging process and resistance to any fixed notion of knowledge and identity that the poem enacts. The /z/ or /s/ sound, which irregularly occurs throughout and appears once more in the "Zero at the bone" at the poem's end, signifies the negative climax of a series of unexpected changes which run as if in irregular serpentine waves through the text, making the snake not only the theme but a shaping image of the text's aesthetic process. The text becomes an ecological force within culture by translating the encounter of human and nonhuman life into a textual experience of intense communicational ambiguity, which undermines prevailing culture-nature binaries and inscribes the shared coexistence with the natural world into the long-term cultural imaginary. In its dynamic complexity and semantic indeterminacy, the text represents a source of ever-renewable creative energy, which can be activated by ever new generations of readers in always changing personal and historical contexts.

My second example of this transformative relation between nature and culture as a source of literary creativity is a poem by the Native American writer Linda Hogan (197):

To Light

At the spring
we hear the great seas traveling
underground
giving themselves up
with tongues of water
that sing the earth open.

They have journeyed through the graveyards Of our loved ones, turning in their graves to carry the stories of life to air

even the trees with their rings have kept track of the crimes that live within and against us.

We remember it all.

We remember, though we are just skeletons whose organs and flesh hold us in.

We have stories as old as the great seas breaking through the chest flying out the mouth, noisy tongues that once were silenced, all the oceans we contain coming to light.

The poem connects the source of its inspiration—the spring—with the elemental force of water and the sea, whose omnipresent undercurrents of energy are articulated in the "tongues of water that sing the earth open"—that is, in manifestations of both a natural creativity in the sense of a multivoiced song of the earth itself and of a textual creativity in the sense of the metaphoric translation of this song into poetic form, sound, rhythm, and meaning. The poetic voice becomes the voice of the eternal waters which, in the second stanza, link the source of beginnings—the spring—with the end, the knowledge and memory of death. The great seas are a subterranean energy field which connects beginning and ending, life and death, past and present in a transformative

memory in which the stories of the dead are recovered from the underground of collective repression and, as it were, are brought back to life in the words of the poem. In the third stanza, trees as well are included in this agency of memory, which links the human and the nonhuman sphere, the interior world of the mind and the exterior world of nature, in a continuity of trauma and victimization. In the fourth stanza, these traumatic memories are related to the concrete human body, or, rather, the embodied minds of an unspecified collective of humans, a "we," who live in their own precarious balance between life and death ("we are just skeletons/ whose organs and flesh/ hold us in.") and who have stories of analogous power to the elemental force of nature, of the "great seas," which, similar to springs, break out of their confinement in the human body and the individual self into the process of memory and self-articulation which is the poem itself. In its constant translations between human and nonhuman, cultural and natural phenomena, the creative process of the poem expresses both the universal interconnectedness of all life and the ineradicable scars, the wounds and violations of this living interconnectedness which have shaped the Native American experience. It is an example of the creative fusion of "ancestral indigenous knowledge" (Adamson 2001: 71) with an "indigenous cosmopolitics" (Adamson 2012), in which questions of social and environmental justice are interwoven with a deep-time knowledge of globally shared planetary life. As in many other examples of indigenous literatures, the poem is a search for new beginnings from the wastelands of historical catastrophes. It acts as an ecological force in cultural discourses which transforms, in ever new ways, historical trauma into poetic creativity.

My third, most explicit example for the reflexive interactivity of mind and nature as a creative matrix of literary texts is a poem by the contemporary American writer A.R. Ammons (Ammons 53):

#### Reflective

I found a weed that had a mirror in it and that mirror

looked in at a mirror in me that had a weed in it

The poem establishes a mutual relationship between the speaker and a phenomenon of nature, a weed, which is neither beautiful nor sublime but rather useless and irrelevant, an inconspicuous organism that does not fit into the utilitarian forms of order and significance that human civilization has imposed on domesticated nature. The weed is an image of "wild" nature outside the anthropocentric dominance of civilization, which, however, is shown to be intrinsically interrelated with the human subject. The speaker and the weed are connected by the image of a mirror, which has been a central cultural metaphor of human knowledge and self-knowledge in the classical and enlightenment periods but is employed here in such a way that the subject-object-position is reversed and the phenomenon of nature is turned from an observed object into an observer of its own reflection in the human subject. In a playful defamiliarization of conventional perceptions, the text becomes an ecological force within discourse by reconnecting the minimalist symbol of wild nature with the cultural symbol of human self-reflection in a fractal ecology of weed, in which the interconnection of what is culturally separated becomes the focus of the poem's process.

The three poems, taken from different historical and cultural backgrounds, indicate how literature functions as an ecological force in cultural discourse by translating, in both radically unsettling and regenerative ways, elemental images and energies of nonhuman life—snake, water, weed—into manifold contexts of human life, history, and knowledge. The aesthetic processes performed in these texts correspond with a guiding idea of Bateson's cultural ecology, namely that ecological knowledge is produced by the search for "connecting patterns" between mind and nature, human and nonhuman spheres (Bateson 2002: 7ff.). In the course of cultural evolution, literature seems to have developed into a cultural form in which the reconnection between the changing historical world and the awareness of biocentric origins became one of its hallmarks as a specifically complex, holistic, and self-reflexive form of discourse even and especially under the conditions of advanced modernization.

### Part Two

## Ecocriticism and Cultural Ecology

# Ecocriticism in the Twentieth Century: The Return of Nature to Writing about Culture

So far, I have sketched some principal outlines of a cultural ecology of literature, first from a general theoretical approximation and subsequently from a reading of literary texts, both of which mark the poles between which the argument of this book develops. In order to clarify the position of a cultural ecology of literature within the ecocritical scholarly field, it seems useful as a next step to widen the perspective and situate cultural ecology within the more general framework of contemporary ecocriticism and ecocritical theory. This will help to further specify and differentiate its characteristic features both in terms of affinities to, and differences from, other directions of ecocritical thought.

As an academic movement, ecocriticism first appeared on the scene of literary and cultural studies in the later twentieth century as a rather marginal and regional phenomenon in a phase in which poststructuralist, new historicist, and discourse-analytical theories dominated the field. Meanwhile, it has become one of the fastest-growing areas of study and interdisciplinary research in the humanities. The emergence of ecocriticism represented a response of the humanities to the worldwide dimensions of an environmental crisis which modern civilization has brought about in its uncontrolled economic and technological expansionism. Urgent environmental issues such as climate change, loss of species diversity, oil spills, deforestation, soil erosion, desertification, diminishing water supplies, limited fossil energies, the uneven distribution of industrially caused environmental risks, or the unmanageable hypertrophies of human waste have become topics of academic investigation as well as of fictional treatments in texts, films, and other media. This crisis was experienced as a threat to the very foundations of human life and survival on this planet and sharply increased the awareness of the existential

dependency of human beings on the natural resources and ecosystems which have been exploited and instrumentalized in the name of unlimited civilizational self-empowerment. What this also entailed was an awareness that these fundamental conditions and vital interdependencies of human life within the larger web of planetary life had not only been marginalized in the dominant discourses and self-concepts of modern societies but that they had also largely been absent from the prevailing categories of cultural studies and humanist scholarship. In the light of increased political and public attention to environmental issues, ecocriticism and ecological art and literature are positioned in an interdisciplinary field of global information circuits, in which the sciences represent a necessary source of knowledge and yet also a subject of critical reflection, since they were instrumental in the technological-economic development of modern civilization that has led to the current environmental problems. It is in response to this perceived inadequacy of long-inherited forms of anthropocentric thinking, including its modern and postmodern transformations, that ecocriticism emerged as a new field of cultural and literary studies that aimed at widening the scope of scholarly attention and redefining the concepts of scholarly methodology in the light of the political, ethical, philosophical, epistemological, and aesthetic implications of this new ecological paradigm.

Ecology was first defined by Ernst Haeckel as "the whole science of the relationships between the organism and its environment" (Haeckel quoted in Nennen 73). Ecocriticism was analogously defined in the first major volume on the subject, *The Ecocriticism Reader*, as the "study of the relationship between literature and the physical environment," advocating an "earth-centered approach to literary studies" (Glotfelty and Fromm 1996: 3). The first phase of ecocriticism in the early 1990s therefore involved a preference for nonfictional genres of nature writing, romantic nature poetry, and wilderness narratives. The long tradition of American nature writing was recuperated as a unique contribution to environmental awareness, in which the intense personal experience, attentive observation, and aesthetic appreciation of the nonhuman world prepared the way for an ethical reorientation of values from an *ego*-consciousness to an *eco*-consciousness (Slovic 2008). Ecocriticism found its first institutional base in the Association for the Study of Literature and Environment (ASLE), which had emerged from the Western Literature Association, and in 1993

also launched the first ecocritical journal *Interdisciplinary Studies in Literature and Environment*, which has established itself as a leading publication forum for new ecocritical work. The "ecocritical insurgency" against what was perceived to be the anthropocentric blindness of cultural constructivism was significantly shaped and theoretically underpinned by such landmark studies as Lawrence Buell's *The Environmental Imagination* (Buell 1995), which rehabilitated the referential and representational dimension of textuality that, in Buell's view, had been unduly neglected in poststructuralist theories. Buell's prime examples were classics of nonfictional American nature writing in the tradition of Henry David Thoreau, even though fictional texts with a deeply inscribed environmental agenda were also included in the new ecocritical canon, such as the Native American writer Leslie Marmon Silko's novel *Ceremony*.

In its main impetus, this early form of ecocriticism was characterized by an emphatic return to a realist epistemology and mode of writing, which alone, according to this view, could capture the presence of the natural environment in textual form, and by an equally emphatic rejection of theory and (post-)modern literary aesthetics, which were seen to distract from immediate engagement with environmental issues and to betray the real world of nature and experience by escaping into textual abstraction and selfreferentiality. Major figures and texts besides Thoreau in this new corpus of environmental writing were, among others, Mary Austin, The Land of Little Rain (1903), Aldo Leopold, A Sand County Almanac (1949), Edward Abbey, Desert Solitaire (1968), Annie Dillard, Pilgrim at Tinker Creek (1974), Wendell Berry, The Unsettling of America (1978), and Barry Lopez, Arctic Dreams (1986). As Buell and Slovic have pointed out among others, these authors and their writings, while sharing an earth-centered approach and a devotion to the land, to localism, wilderness and wild life, are much more diverse and heterogenous than would appear at first sight. Mary Austin's essays on the Mojave desert and its native inhabitants intone the characteristic, sacralizing mode of celebratory nature writing, whose "vatic sublimities" (Buell 1995: 79) go along with a strange tendency toward personal self-effacement. The "didactic thrust" (Buell 1995: 172) of Aldo Leopold's land ethic likewise diminishes personal presence in favor of a more general environmental ethics, which, however, is to be based on scholarship and science rather than merely subjective experience. In his famous chapter in A Sand County Almanac,

"Thinking like a Mountain," Leopold advocates an ecocentric imagination which moves human thought from anthropocentric separation toward an awareness of the shared interconnectivity of nature as the condition of all life. Lopez based his realistic rather than idealizing view of natural ecosystems on scientific ecological knowledge, pointing out the vital role of predator animals in the "trophic cascade," that is, the different scales of the food chain of the entire biotic community, which also includes animals like wolves that have been falsely demonized in human perception and cultural history (Leopold). Annie Dillard, in contrast, posits an attitude of childlike innocence as the way to a deeper, visionary experience and appreciation of nature, which is not based on knowledge and science but on the "intensity of emotion, the feeling of being fully alive," the "emotions of hightened vitality" (Slovic 64-65). Edward Abbey's encounter with the desert is more ambivalent, turning fascination with the raw wilderness into a "shock of the real" that is intended "to alarm and disorient" readers and confront them with the "otherness of nature" (Slovic 2008: 93) rather than suggesting any easy identification with it. Wendell Berry links his devotion to place to an agrarian land ethic, in which traditional forms of agrarian work and culture gain the status of alternative models of a life attuned to nature, versus the modern industrial agrobusiness and its exploitation of the land. Barry Lopez concentrates on concrete and particular features of material nature in his depictions of the Arctic in order to create a sense of vital coexistence between man and land as an antidote to the modern estrangement from the earth, which he tries to overcome in the experience of intimacy with the landscape.

Far from being monolithic, therefore, this body of nonfictional nature writing is highly diverse and multifaceted, already anticipating different strands of later ecocritical developments in a spectrum between romantic and scientific, affective and descriptive, personal and ecosystemic, deep and pragmatic, spiritual and material forms of ecology—differences which seem to be intrinsically part of the ecological paradigm. What these authors have more or less in common is that they establish an environmental ethics and a clearly defined set of values that are perhaps most succinctly summarized in Leopolds land ethics: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise" (224f.) ... "[A] land ethic changes the role of Homo sapiens

from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such" (204).

From early on, this affirmative, celebratory tone of environmental literature and criticism went along with a critique of the potentially disastrous impact of modern civilization on what was perceived as the pre-existing harmony and balance of nature. This critique intensified with the growing experience and awareness of large-scale catastrophes that accompanied industrial and economic progress. One of the foundational texts and inspiring sources of modern environmentalism, Rachel Carson's Silent Spring, was based on such criticism. It exposed the effects of pesticides, especially of DDT, on human and nonhuman nature, radically questioning the belief in scientific-technological progress that at the time was deeply ingrained in modern society, especially in the cold-war period, on both sides of the Iron Curtain. The silencing of the song of birds, the charismatic harbingers of spring announcing a new cycle of the seasons in a natural rhythm of life, highlights the disruption of a pre-existing balance of nature through the impact of the human techno-sphere on the natural ecosphere. In their surreal absence, the sounds of spring are an implicit reference to a long tradition of literary stagings of the nonhuman world as a source of meaning, value, and living creativity, a tradition which includes, but also goes beyond, the romantic era. The critique of the profit-oriented manipulation of nature by a monocultural agro-technology is based here, as in many other cases, on the assumption of an original balance between man and nature that has been destroyed by the impact of modern civilization. The text is dominated by an imagery of waste land, sickness, paralysis, and death-in-life, which is associated with unconditional civilizational mastery over nature. This tone is already introduced in the fable which precedes the actual text about a pastoral place, "where all life seemed to live in harmony with its surroundings" (1) and which was disrupted by an "evil spell [that] had settled on the community: mysterious maladies swept the flocks of chickens, the cattle and sheep sickened and died. Everywhere was the shadow of death" (2). This evil spell, however, is not natural but man-made, it is the effect of the human drive to dominate nature that has turned against its own necessary conditions of survival.

As a highly informative scientific account of the destructive impact of modern technology on nature and humans alike, *Silent Spring* is also a

narrative of death and survival in a world threatened by the uncontrollable effects of advanced modernization. It thus involves not only a "representation of nature" but a "politicization of the environment" (Lousley). "In the less than two decades of their use, the synthetic pesticides have been so thoroughly distributed throughout the animate and inanimate world that they occur virtually everywhere" (Carson 11). This statement from the early 1960s is no less true today in the 2010s, when a recent report on the arctic North showed that pesticides, among them DDT, have infiltrated the whole food chain and affected the milk of mothers among indigenous populations—an example of the global spread of apparently local or regional phenomena of environmental poisoning. In initiating this line of "toxic discourse," Carson contributed not only to an important direction of contemporary environmental studies but also to a postcolonial and global extension of ecological awareness and critique.

Many examples of environmental writing are, in one way or another, such narratives of threatening destruction and calls for action on behalf of the survival of both nature and human civilization. They write about nature in ways that also make them political calls for an increased public awareness of the silent injustices and invisible risks of a blindly expansionist technocentric consumer society, an awareness which requires an informed discourse of democratic citizens about necessary changes in the values and practices of personal and communal life (Lousley). In their scientific-naturalist orientation, nonfictional genres of environmental writing have nevertheless consistently used literary and rhetorical means to intensify, emotionally transmit, and publicly spread socially relevant and culturally transformative ecological knowledge.

# Ecocriticism in the Twenty-First Century: The Return of Culture to Writing about Nature

While these environmental writings of the twentieth century do occasionally reflect on the mediating role of language and the text, and while they are aware of the importance of rhetoric, narrative, and metaphor in the transmission of environmental issues, their common denominator is the attempt to convey an *unmediated* perception of reality and nature beyond linguistic and cultural categories rather than an awareness of the inevitable textual and cultural "framing" of all human knowledge and depiction of the nonhuman environment.¹ This awareness has become one of the hallmarks of developments in the early twenty-first century, in which the ecodidactic orientation and polemical opposition to theory has been superseded by an opening of ecocriticism to various branches of cultural studies and, consequently, by a rapidly increasing theoretical and methodological diversification of the field.

Ecocriticism in this wider sense is no longer a coherent, monosystemic approach but a "transformative discourse" related to "wider social context" (Garrard 7). From a linguistic-epistemological aspect, this links up with Gregory Bateson's observation that ecological thinking is closer to metaphoric than to logocentric speech (Bateson 1991). Garrard distinguishes some of the characteristic metaphorical concepts or "tropes" which govern "the production, reproduction and transformation of large-scale metaphors" within the discourse of ecocriticism: Pollution, Wilderness, Apocalypse, Dwelling, Animals, Earth, Health (Garrard 2004, 2013). In various ways, these

<sup>&</sup>lt;sup>1</sup> The idea of the "cultural framing" of environmental discourse has been the topic of an Arts & Humanities Research Council (AHRC) funded research network at the University of Bath and at Bath Spa University from 2010 to 2011.

conceptual tropes form characteristic focal points of attention that pervade both the thematic concerns of ecocriticism and the fictional scenarios of ecoliterature.

While some ecocritics continue to focus on the local, personal, and experiential dimensions of environmental writing, fusing autobiography and scientific observation into what Scott Slovic calls "narrative scholarship" (Slovic 2012), others explore the global and systemic aspects of ecocriticism, emphasizing the need to link local and personal ecologies with transpersonal and cross-cultural aspects of ecological thought in a globalized world. The latter critics examine the ways in which contemporary life is changed by increasingly complex worldwide economic connections and information technologies in an "environmental imagination of the global" (Heise 2008). Furthermore, within the broad range of contemporary ecocriticism, "environmentalism" as a political-pragmatic position can be distinguished from "deep ecology" as a philosophical-spiritual position, from "social ecology" and "eco-Marxism" respectively as community- and class-oriented positions (Newman) and from "ecofeminism" and "queer ecology" as genderand sexuality-oriented positions (Garrard 2004: 16-32; Mortimer-Sandilands and Erikson; Westling 2014). In the course of this diversification of the field of ecocriticism, attention has been expanded toward new branches of ecology such as "urban ecology," in which the binary opposition between city and country is destabilized; positive values such as "sociability, walkability, cosmopolitanism, spontaneity, and diversity" are associated with cities (Goodbody 2007: 211); and new forms of culture-nature symbiosis in urban life are envisioned, which are often connoted as "transcultural spaces" (Brandt et al.). Complementary developments are "ecopsychology," in which the deep-rooted dependence of the human psyche on experiences of nature is explored in terms of sickness and health, trauma and therapy (Nemeth et al.; West; Ecopsychology), and "affective ecology," which looks at the important role that psycho-emotional effects play in the production and reception of environmental discourses (Weik von Mossner). Other forms of recent ecocriticism involve an interdisciplinary dialogue with such diverse fields as science studies (Alaimo), evolutionary biology (Wilson, Easterlin), systems theory (Bergthaller), chaos theory (Berressem), complexity research (Gras), quantum physics (Barad), and the material sciences on the one hand (Iovino,

Oppermann) but also with philosophy, ethics, religion, history, and different versions of critical theory on the other. This interdisciplinary opening has led to significant extensions of the ecocritical field toward what has come to be called and is increasingly being institutionalized worldwide under the umbrella term of the environmental humanities.

There have been attempts to describe these developments of ecocritical thought in a teleological way as successive "waves," which followed upon each other as if in clearly distinguishable phases from naïve beginnings to ever more sophisticated phases, leading at last to the establishment of a coherent, fully authorized scholarly field. Rather than positing distinct stages or waves of ecocriticism, however, it seems preferable to speak of "palimpsest"-like, overlapping layers (Buell) and multiple coexisting and interacting ecocritical approaches and orientations, which not only point forward in time to a not yet achieved "ecology to come" (Morton) but also backwards to the multifaceted and multilayered historical archives of ecological thought that had long been buried in cultural history (Böhme 1989). The various directions of ecocriticism, which have evolved from this dialogue between theory and practice, past and future, scientific and cultural forms of ecological thought, have crystallized around a number of key critical issues but have not always produced easy answers. They have rather revealed specific paradoxes or "quandaries" (Clark), which seem to be inevitably tied up with such a concrete and yet also universal episteme as ecology. Nevertheless, the identification of these quandaries or paradoxes may itself be one important way of describing not only the limitations but the enormous potential of ecocritical theory and practice, because it indicates the coexistence of the seemingly incompatible as a fundamental condition of ecological thought.

In the case of ecofeminism, for example, the tension that is generally observable in ecocriticism between celebratory, "nature-endorsing" and culturalist, "nature-skeptical" views is especially virulent (Soper, Merchant, Grewe-Volpp 2016). Ecofeminists of the former group have proclaimed a special closeness of women to natural life cycles in relation to motherhood, nurture, and the female body, celebrating various matriarchal incarnations of nature in different cultures in what is commonly subsumed under the Gaia myth of the earth as the Great Mother. This body-oriented mytho-ecological view has been translated into a scientific framework in concepts like James

Lovelock's Gaia hypothesis, which conceives of the whole planet Earth as a living ecosystem that regulates climate and chemistry in such a way that it remains "always close to an optimum for whatever life inhabits it" (Lovelock). Endorsed by evolutionary scientists such as Lynn Margulis, the Gaia hypothesis has become part of biocultural theories of the interrelatedness between mind and life both on individual and on collective, global levels (Thompson 119–122). Poststructuralist versions of ecofeminism, on the other hand, tend to highlight the discursive constructedness of such views and their inevitable entanglement in the negotiations of language, power, agency, and subjectivity in modern society (Sandilands). They point out the different meanings which have been ascribed to nature in history (Evernden, Soper) and which often went along with hierarchical binaries that assigned women, along with nature, the body, or the cultural other, an inferior status in society in an essentializing ideology of a "natural order," from whose repressive regime ecofeminism aims to liberate thought and discourse. However, the ecocentric, nature-endorsing and the poststructuralist, discourse-analytical versions of ecofeminism are facing opposite problems. In the former view, the analogy between women and nature posits an ontological affinity which may involve an inadvertent return to traditional gender clichés, while in the latter view, the notion of nature as an exclusively cultural construct threatens to eliminate the nonhuman world, once more, from the anthropocentric categories of humanist studies. Various attempts to think together these different positions are, however, characteristic of recent ecofeminist theory and scholarship, which, in a material ecofeminist framework, aims "to decalcify fossilized significations of nature that render it distant, empty, and mute" (Alaimo 1997) and "to reconcile what has hitherto been torn asunder, to show the actual integration of what historically has been polarized and hierarchically valued" (Sandilands 1999: 195).

In postcolonial versions of ecocriticism, which have gained increasing visibility in recent years, the issue of environmental justice has become especially relevant, and the unequal distribution of environmental risk and disaster caused by the industrialized world in different cultures and social classes is critically examined on both a regional and global scale (Huggan and Tiffin, Nixon, Banerjee). Nature has always been an irreducible part of the postcolonial imagination in a double sense. On the one hand, postcolonial ecology looks at the ways in which the traumatic memory of colonialism has

shaped and deformed the relationship to the natural world. As DeLoughrey and Handley point out in *Postcolonial Ecologies*: "... since the environment stands as a nonhuman witness to the violent process of colonialism, an engagement with alterity is a constitutive aspect of postcoloniality" (8). Because of this suppressed history of violence, "the land and even the ocean become all the more crucial as recuperative sites of postcolonial historiography" (8). On the other hand, postcolonial ecocriticism recovers forms of indigenous knowledge of nature and brings together modern concepts of ecology with non-western modes of protoecological thought—as, for example, in indigenous Native American, Caribbean, Latin American, African, or Asian traditions. Local knowledge and global interconnectedness go together in these versions of ecocriticism in forms of creative hybridity. In this sense, postcolonial literature has always included an awareness of environmental issues, and a merely UScentered genealogy of ecocriticism needs to be extended toward a transnational genealogy and rhizomic trajectory of environmental literature and philosophy (Oppermann 2010, 2012; DeLoughrey 2011).

As Heise points out, however, there are not only convergences but notable differences between the epistemological and political agendas of ecocriticism and postcolonialism—in their respective emphasis on purity vs. hybridity, place vs. displacement, dwelling vs. border crossing, wild vs. urban settings, national vs. transnational orientations, harmonious vs. conflictual worldviews, interspecies vs. intercultural conceptions of "otherness" (Heise 2010 "Afterword": 253). Such differences are not to be downplayed but must be taken into account and discursively negotiated in up-to-date versions of postcolonial ecology. Moreoever, what will be of specific importance in such fusions of ecocriticism and postcolonialism in the fields of literary and cultural studies, according to Heise, is the role of the aesthetic, of literary genre, form, and language in the exploration and representation of ecological and postcolonial issues. The question is what the contribution of literature to cultural knowledge can be in these fields beyond merely illustrating the factual knowledge and public agenda of straightforward political and environmental analysis. "In the convergence of ecocriticism and postcolonialism, therefore, this question of the aesthetic arises with double force. If we believe—as I assume most ecocritical and postcolonial critics do—that the aesthetic transformation of the real has a particular potential for reshaping the individual and ecosocial

imaginary, then the way in which aesthetic forms relate to cultural as well as biological structures deserves our particular attention" (258). This attention to the transformative role of the aesthetic in reshaping the ecocultural imaginary, I believe, is one of the crucial tasks of future ecocriticism—not only in its postcolonial versions but as a perspective which is relevant across the different directions of current ecocriticism and which represents the main explorative focus of the present study.

With such recent developments as sketched in this chapter, ecocriticism is becoming a globally relevant agenda of research and teaching in the disciplines of literary and cultural studies as an integral part of the environmental humanities, which in my view has the potential for providing new answers to the much-debated question of why the humanities matter today. Ecocriticism in this sense is not a single unified theory or methodology but the platform for a lively, polycentric, and dynamically developing transcultural and transnational dialogue, which can only gain from the multi-vectoral directions that it produces, acknowledging that these directions represent no all-explanatory truth-claims but exploratory perspectives within a constantly shifting discursive field.

## Politicized Ecocriticism: From Nature Worship to Civilizational Critique

Along with a more pronounced awareness of the inescapable cultural conditions of our knowledge and experience of "nature," a major shift in emphasis from earlier to more recent developments has been that the culturecritical, political, and global aspects of ecocriticism have become more prominent than the nature-affirming, personal, and local dimensions. Much of recent ecocritical work has been dedicated to documenting, analyzing, and interpreting environmental problems and their textual and medial representations in various areas and regions of the world, such as the effects of climate change, industrial waste, pollution of land, air, and water, disposal of toxic chemicals, destruction of rain forests, or species extinction, issues which are often combined with questions of environmental justice, class, gender, health, and poverty, and with the critique of a neoliberal free market ideology that is held responsible for the reckless exploitation of humans and of nonhuman nature alike. An important and influential contribution to the environmental justice debate has come with Rob Nixon's concept of slow violence, which makes us aware of the many invisible, often unspectacular and unnoticed, but nevertheless powerfully effective forms of violence exerted by those processes especially on the poorer parts of national and global populations (Nixon).

Already in the later twentieth century, the long-term effects of environmental disasters had begun to change public opinion and to prepare the way for a more widespread ecological consciousness by undermining confidence in the human manageability of progress, such as major accidents at nuclear power plants like Three Mile Island, Chernobyl and, as a more recent disaster, Fukushima. Other notorious manifestations of this dark side of a late-

modern "world risk society" (Beck), and of the interplay between political, economic, and social factors in its devastating blackouts, have been Hurricane Katrina in New Orleans, which exposed the hidden wastelands of poverty in the backyards of US cities; the Deepwater Horizon oil spill with its massive damage to the ecosystem of the Gulf; or the destructive effects of Storm Sandy on poorer quarters of New York and New Jersey. Outside the United States, among the key events in historical ecocatastrophes have been the Seveso dioxin accident in Italy; the Bhopal accident in India with thousands of people dead or injured by toxic gas; oil spills poisoning large parts of the Niger valley in Africa; or recent cases of severe air pollution in Bejing and Tehran. The ineradicable mark that the influence of human civilization has left on the planet has meanwhile resulted in the introduction of a new category of geological eras, the Anthropocene, which is distinguished from the preceding eras up to the Holocene by the fact that the development of the Earth has for the first time become shaped in major ways by the impact of humanity on the planetary ecosystem (Crutzen and Stoermer, Zalasiewicz). The Anthropocene has quickly become another new discursive concept in current ecocriticm and the environmental humanities around which a growing number of publications and conference topics are emerging (Clark, 2015).

In some cases, there have been political consequences resulting from these disasters. Thus in Germany, the shock of the Chernobyl accident helped to strengthen popular resistance to the nuclear energy industry and to fuel the green movement and the rise of the Green Party, whose representation in the regional and federal parliaments had a considerable impact on the political scene in the country. Literary texts also contributed to this debate, such as Christa Wolf's novel Störfall (Accident, 1987), Gudrun Pausewang's Die Wolke (The Cloud, 1987), or, from a longer-term perspective, Merle Hilbk's Tschernobyl Baby. Wie wir lernten das Atom zu lieben (Chernobyl Baby. How We Learned to Love the Atom, 2011); these fictional responses to the invisible effects of the Chernobyl nuclear cloud exposed the unsettling ambiguities of scientific-technological progress in relation to ordinary human lives. Such developments created a climate of public opinion which, after the Fukushima catastrophe of 2011, finally led to a broad political consensus that forced even Angela Merkel's conservative party of the Christian Democrats to abandon its long-held belief in atomic energy and helped prepare the way for the opt out decision of 2012 with the aim to end the use of nuclear power in Germany altogether by 2021 (Beck 2013).

In other cases, such consequences fail to materialize or remain only rhetorical. Most conspicuously, reaction of international politics has remained deplorably weak and inappropriate in the face of the escalating threat of climate change, as is evidenced in the paucity of results of the successive climate summits of the recent past. Among eco-activists and the green community, on the other hand, climate change has gained the status of an overriding concern and an environmental mega-problem, which at times eclipses other issues of contemporary green politics. While the vast majority of the scientific community agrees on the factual evidence of climate change, which has again been confirmed on an unprecedentedly broad data basis in the 2014 report of the IPCC (Intergovernmental Panel on Climate Change), the debate on this issue has led to controversial responses in the wider public (Hulme, Soentgen and Bilandzic). The spectrum is illustrated, on the one hand, by apocalyptic end-of-the-world scenarios such as displayed in Roland Emmerich's opulent film spectacle The Day after Tomorrow (2004), based on the novel The Coming Global Superstorm by Art Bell and Whitley Striebe, in which climate change leads to a new Ice Age devastating the North American continent, and, on the other hand, in bestseller novels like Michael Crichton's State of Fear of the same year, in which climate change is presented as a conspiracy of ideologues and eco-terrorists disguised as ethically concerned scientists. As Soentgen and Bilandzic have shown, such climate skeptical views have been widely spread especially in the form of nonfiction and popularized science books, arguing basically along similar lines as Crichton's novel (Soentgen and Bilandzic). At the same time, fictional treatments of the topic in novels and films, meanwhile subsumed under the label of cli-fi, and written in various combinations of documentary realism, science fiction, crime stories, ecothrillers, or ecoapocalypse, have also become highly popular contributions to discourse of climate change. From the early days of Blade Runner (1982) and Waterworld (1995) up to A.I. Artificial Intelligence (2001) and The Age of Stupid (2009), scenarios of future worlds illustrating the devastating consequences of climate change have found considerable public resonance as warning examples in film. In literature, the science fiction novels of J.G. Ballard anticipated a concern with climate change in the 1960s already, which informs later novels

such as Norman Spinrad's *Greenhouse Summer* (1999), T. C. Boyle's *A Friend of the Earth* (2000), Margaret Atwood's *Oryx and Crake* (2003), *The Year of the Flood* (2009), and *MaddAddam* (2013), Kim Stanley Robinson's *Science in the Capital Series* (2004–2007), Jeanette Winterson's *The Stone Gods* (2007), Clive and Dirk Cussler's *Arctic Drift* (2008), Ian McEwan's *Solar* (2010), Simon Rosser's *Tipping Point* (2010), or Ilija Trojanow's *EisTau* (*Melting Ice*, 2011). A contrastive, climate skeptical view which posits climate change science itself as a danger to the future of mankind on the planet is propagated in Larry Niven, Jerry Pournelle, and Michael Flynn's *Fallen Angels* (1991), Marcel Theroux's *Far North* (2009), or the Korean filmmaker Bong Joon-ho's *Snowpiercer* (2013), in which, in contrast to Emmerich's *Day After Tomorrow*, a new Ice Age is not the consequence of global warming but of a global cooling caused by the failed experiment of an eco-dictatorship implementing all too radical measures against climate change.

While it is obvious that the neglect of the urgent realities of climate change plays into the hands of reactionary politics and powerful economic lobby groups, it is disconcerting to see that the apocalyptic dramatizing of climate change can likewise lend itself to unexpected and unholy alliances, such as between ecological scientists and the nuclear power industry. A wellknown voice in this context is James Lovelock, the originator of the Gaia hypothesis, whose warnings of an imminent collapse of the planet's ecosystem as a consequence of uncontrollable carbon dioxide emissions have made him an advocate of nuclear energy as the preferred energy form that can save the planet from anthropogenic destruction (Lovelock 2004). He is joined in this view by US environmentalists such as Stewart Brand, who has called the opt out decision of Germany irresponsible in view of the short-term threat of climate change (Brand quoted in Beck 2013). In a less polemical but proclaimedly factoriented way, the recent IPCC report published in 2014 also contains a highly controversial paragraph endorsing nuclear power as a means of reducing CO2 emissions and "a contribution to low-carbon energy supply." The report does mention various risks associated with nuclear energy: "operational risks, and the associated concerns, uranium mining risks, financial and regulatory risks, unresolved waste management issues, nuclear weapons proliferation concerns, and adverse public opinion" (IPCC, 23). But it downplays these risks, rendering it as of secondary concern to the problem of global warming, and also

inexplicably leaving out of the calculation the energy-intensive processes that nuclear power plants involve before and beyond their actual operation. With this position, the IPCC, like Lovelock and Brand, are taking an opposite stand to other, particularly continental, environmentalists and ecocritics, for whom nuclear energy represents one of the most dangerous cases of technological hubris, causing incalculable long-term risks that are being hazarded for short-term, basically economic, interests (Beck). Ulrich Beck's concept of a "world risk society," which has been a major influence on contemporary forms of globally oriented ecocriticism (Heise, Mauch and Mayer), was developed in response to the collective shock which the Chernobyl disaster had meant to Europe in the 1980s, and which continues to be a traumatic turning point in the collective cultural memory of the green movement.<sup>1</sup>

Such disputes and controversies exacerbate the problem of consistent, scientifically grounded and ethically responsible environmental agency in the current situation. How reliable are the sciences as authoritative sources of truth, and how trustworthy are their findings in the light of the inevitable relativity of all projects of human knowledge? If ecological issues are inextricably intertwined with political and social issues, to which extent are they also tied to questions of democratic majority and legitimacy? Does their successful solution require well-functioning democratic institutions or do they follow ethical imperatives which are presumed to be above such questions and which would therefore have to be implemented in an autocratic way either from above—in the form of an eco-friendly dictatorship—or from below—in the form of eco-sabotage, eco-guerilla, or eco-terrorism? (Clark 2011: 214, fn 17). What, in other words, is the basis of legitimacy of such engagement for potentially radical environmental change, which necessarily concerns not merely individuals or groups but the social collective? And what exactly are the social and political goals of such an engagement? Does it aim at restoring a supposedly harmonious state of culture-nature-coexistence before

Beck insists, however, that opposition to nuclear energy does not entail a wholesale rejection of modernity and science. On the contrary:

It would be utterly mistaken to imagine that Germany's political decision to phase out nuclear energy means that it is turning its back on the European concept of modernity in favour of the dark forests, the obscure roots of German intellectual history. This is not simply the latest outburst of Germany's proverbial love of the irrational, but rather proof of its faith in modernity's adaptability and creativity in its dealings with risks it has itself generated. (Beck 2013: I)

modernization and, in its radical version, at achieving a state of "Uncivilization" (cf. Dark Mountain Project) and the "elimination of technological society" (Kaufman); or does it rather aim at mending the damaged relationship of modern society to nature with the help of modernity itself, that is, of science and technology? If critical depictions of modern eco-disasters advocate a return to pre-modern states of a supposedly intact relationship of society to nature, can they not easily become a reactionary rather than a creative evolutionary force? On the other hand, if science and modernity are being recruited as allies rather than as opponents of ecological recovery, how can we distinguish between damaging and constructive forms of science, and what would be the basis of such a differentiation? Possible answers to such quandaries involve fundamental questions of how the relationship between culture and nature is conceived, and what views, values, and concepts of the nonhuman world, and of human civilization itself, it implies.

All of these questions and paradoxes need to be addressed in an adequately complex and self-reflexive form of ecocriticism. Ecology is a special and perhaps unprecedented challenge to thought and life, because it concerns small-scale issues and decisions of everyday individual existence but at the same time involves large-scale issues of collective social agency with potentially unforeseen and far-reaching consequences not only for humans but for the whole ecosystem of the earth. Ecology poses not only enormous complexities of thought in a multidisciplinary field of knowledge, but also an extraordinary ethical challenge of responsible action in a postmodern risk society. Such challenges should not, however, provoke an attitude of apocalyptic fatalism. It seems to me that an exaggerated tendency toward endof-the-world ecocatastrophe theories can lead to the extremes of either cynical inactivity or undemocratic hyper-activity. Some of the developments of the recent past have shown instead that it is worth dealing with environmental problems in a pragmatic-democratic way, and that the state, if democratically legitimized, is not necessarily always an opponent but rather a potential ally in such constructive ecological change, even though concrete, decentralized personal, local, and communal activities are equally indispensable to achieve this larger aim.

In Germany, an instructive example is the so-called *Waldsterben*, the dying of the forests as an ancient nature symbol of German culture, which provoked

deeply pessimistic outlooks in the late twentieth century, as reflected in Günter Grass' Totes Holz. Ein Nachruf (Dead Wood. An Obituary), a narrative with drawings that responds to the massive dying of forests in the inner-German and the German-Czech border region before reunification. Germany's future was envisioned as a land that was losing its soul along with the woods, a wasteland of dead trees and surreal landscape of industrial hyperobjects bereft of all traces of health, vitality, and of that humane living space between the "nature that we ourselves are" and the "nature that we are not," that is necessary for the survival and well-being of human culture (Böhme 1989, quoted in Rigby 2012: 140). Several decades later, due to measures taken by the state under the pressure of the environmental movement and the Green Party, such as legislation on industrial smoke desulfurization and car catalysts, the effects of the Waldsterben did not turn out to be as fatal as feared (Schäfer and Metzger). While damage to trees remains a serious problem, it has not escalated in the way it had been predicted in the worst-case scenarios. Similarly, pollution of land, water, and air as a result of unregulated industrial production was extremely high in the 1980s and has since become substantially reduced, so that its threat to the health of human or nonhuman life has become notably less serious than a few decades ago. Such improvements have been reached due to environmental regulations that often enough had to be implemented by the state against the interests of powerful industries and lobby groups. These changes are especially visible in the regions of the former German Democratic Republic, where the communist variant of the modernist belief in technological progress had caused large-scale environmental devastation but which since reunification in 1990 has meanwhile reached similar levels of environmental recovery as the West of Germany.

This is not to say that environmental problems do not represent a severe and continued challenge to the future of a highly industrialized society as Germany, and that climate change especially does not necessitate far more serious public attention, along with large-scale preventive or at least mitigating measures. But it goes to show that if decisive political, economic, social, and personal action is taken, matters can be changed and developments can be influenced in positive or negative ways. It demonstrates that human agency and cultural evolution do not necessarily lead into the abyss of civilizational self-destruction but can and must involve the continuous, reflexive re-organization

of modern societies in response to the increasingly complex challenges that their own development brings about.

In this context, it is worth noting that Lovelock's prediction from 2004 about the irreplaceable role of nuclear energy and the insufficient capacity of renewable energies to replace it in the fight against global warming has not come true in the case of Germany. Since the opt out decision of 2010, carbon dioxide emissions have stayed about the same in spite of the shutting down of eight nuclear power plants (Bundesumweltamt), while the percentage of renewable energies in the overall energy consumption of the country has risen from 3 to 21.9 percent during the fifteen years between 1997 and 2012 (BDEW). It is true that the reactivation of coal plants, as well as the organizational problems and the considerable political-economic resistance to the Energiewende (the turn to renewable energies) threatens to slow down this trend. Nevertheless, new peak values have been recorded for 2013 for the share of renewable energies in the total energy supply in the country, for example, for June 16, 2013, on which no less than 61 percent of the required power plant energy production was provided by renewable energies (BDEW). This goes to show how much does indeed depend on the political, economic, and social will and determination to concretely implement such measures and that it is possible to act in the interest of a larger change of society and the economy toward environmental responsibility and sustainability.

Declarations of the imminent end of the world, such as in the Dark Mountain Project, an eco-fundamentalist community, which announces the inevitable collapse of the planetary ecosystem and advocates a stoic acceptance of the death of human civilization (cf. The Dark Mountain Project), are the defeatist counterpart of the fact-blind refusal to recognize the seriousness of the environmental crisis. Without some degree of belief in the capacity of humans and human civilization for self-correction in the interest of sustainable cultural evolution, no responsible ecological politics can be imagined. Without it, too, literature and the arts would just be useless exercises in narcissistic self-contemplation rather than an important contribution to the creative renewal and continued evolutionary development of society and culture in the direction of a more ecological form of existence.

Once more, however, a distinction between politics and literature, between pragmatic and depragmatized forms of discourse appears unavoidable in such debates. On the one hand, for a responsible translation of ecological thought into politics, a pragmatic-ethical attitude is required which combines scientific knowledge, civic engagement, and democratic institutions into a step by step, goal-oriented personal and collective agency. On the other hand, the radical-critical self-reflection of human civilization and the visionary actualization of unrealized ecocultural potentials, which are provided by the imaginative counterworlds of literature and art, are equally required for the long-term evolution of a sustainable and ecologically self-aware culture. The activation of this critical-creative potential, however, is enabled through the suspension of immediate pragmatic-political purposes in the explorative space of the aesthetic, which is vitally interrelated with but also functionally and semiotically distinct from, the domains of history and politics.

In the face of apodictic truth-claims and programmatic calls to arms of all sorts, literature and art have always been suspected to be an unnecessary luxury or, even worse, an escapist fantasy world that distracts from the urgent tasks of responsible political, social, and ethical engagement. I would like to propose a different view here: it is literature and the arts which, in their complex scenarios of counterdiscursive ecopoiesis, can contribute in unique ways to that sustained ecological evolution of consciousness and culture which is needed for imagining a livable future for human and nonhuman life on the planet. And it is precisely the indirect and indeterminate mode, the polyphonic complexity of literary works, which is essential for achieving this effect. This resistance to easy appropriation may, at times, complicate rather than facilitate immediate environmental activism and doctrinal certainties. As Ursula Heise among others has argued, techniques such as multiperspectival narration can become a source of ecological (meta-)knowledge by conveying not any prior environmental "truth" but instead the divergences and contradictions of attitudes to environmental issues. Heise shows how in postcolonial novels like Mayra Montero's In the Palm of Darkness or Amitav Ghosh's The Hungry Tide, both of which revolve around the search for a rare and endangered animal species—a frog species in Haiti in Montero's novel, and a river dolphin species in the Sundarban wetlands in India in Ghosh's novel—western scientists are faced with indigenous guides who derive their "knowledge of nature" from their "familiarity and long-term residence in the local environment" (Heise 2010b: 98). The encounter between different

characters, cultures, and narrators implies a confrontation between "different kinds of knowledge" between modern ecological science and intuitive-experiential forms of knowledge based not on technocentric rationality but on oral and local forms of biocentric culture-nature-symbiosis. That way, the novels render a broad spectrum of current environmental issues in a pluri-voiced discourse that highlights "the kinds of cultural and epistemological synergies that... are necessary in an age of global ecological crisis" (Heise 2010b, 99). To be sure, such juxtapositions of heterogeneous views and values produce gaps, uncertainties, and indeterminacies in the texts, which may be seen to resist rather than support unidirectional ecological agency and political engagement. Yet it is these uncertainties and indeterminacies which create a textual space for otherness that alone can break up the sermonizing monologues of missionary (eco-) politics and open the text for the active participation of the reader in the continual co-creation of those relational complexities which constitute ecological awareness and existence.

If one tries to generalize the ecocultural functions of these aesthetically complex forms of environmental narratives, three distinct but interrelated functions emerge: the texts imply a *critical* impetus in exposing exploitative, hegemonic, and pathogenic structures of dominance and technocentric mastery over human and nonhuman nature; they imply a *counterdiscursive* impetus in activating marginalized forms of biophilic culture-nature-experience and human coexistence with nonhuman life as imaginative counterworlds; and they imply a *reintegrative* impetus in bringing together these different forms and forces in "cultural and epistemological synergies" (Heise 2010b: 99) that are necessary for adequately complex forms of ecocultural knowledge. I will come back to these three subfunctions later, because I think they do not only apply to explicit forms of ecological fiction but are inscribed into the evolutionary-functional profile of literature as the generative signature of imaginative texts within the overall process of literary and cultural evolution.

# Ecological Thought and Critical Theory: From Antagonism to Alliance

One of the most conspicuous changes in the relationship between ecological thought and critical theory has resulted from the recognition that an ecological perspective on culture and literature is neither entirely new in the history of critical theory nor that it is inherently opposed to positions of modern and postmodern aesthetics and theory. On the contrary, it has become evident that ecocriticism can only fully realize its rich potential through its dialogue with modern and postmodern theory and aesthetics, in the same way in which the latter needs to be redefined in new, more complex ways by the inclusion of an ecological dimension into their discourses. Important versions of critical and aesthetic theory have already anticipated an ecological perspective and are being reappraised on a broad scale from this new angle. This is one of the more surprising turns of recent literary and cultural studies after a phase in which ecocriticism and critical theory had mutually ignored each other as if they existed on different planets of thought. In their radical constructivist epistemology, critical theory and cultural studies had relegated "nature," in their high phase of academic currency, from the domain of serious scholarly occupation altogether, declaring it a mere ideological fabrication which only served to hide interests of political power and dominance. Ecocriticism on the other hand (over-)reacted to this extreme form of cultural constructivism with wholesale rejection rather than with a differentiated assessment of relevant insights of critical theory.

Meanwhile, one of the major activities of literary and cultural critics has become to discover intersections and common agendas between ecology and critical theory, which, as it turns out, have not just newly emerged but have been there all along. The list of precursors to modern ecological thought,

which is rapidly expanding, by now contains leading philosophers and theorists that before had exclusively been claimed for positions of modernism, postmodernism, new historicism, or deconstruction—a fact which attests as much to the former self-immunization and mutual blindness of these competing scholarly paradigms as to their recently demonstrated capacity to open themselves up to a productive dialogue.

An example of this ecological reappraisal is the philosophy of German Idealism and especially of Naturphilosophie. This philosophy of nature developed by figures like Herder, Goethe, Schiller, Schlegel, and Schelling in the context of post-Enlightenment thought attempts to relate reason to imagination, mind to world, cultural to natural history in new, holisticorganic rather than instrumental-mechanical ways. Aesthetics comes to play an important part in this new episteme of living interrelationships and connective patterns, which are seen to be active throughout different scales of reality and the self, linking the material and the intellectual, the objective and the subjective in constantly evolving systems of analogies that simultaneously describe the productivity of nature and of human culture, whose most complex expression is art. These new ideas of Naturphilosophie, which originated from an intense and systematic dialogue between philosophy and literature, 1 not only shaped the thematic and aesthetic conceptions of romantic literature in Germany but also significantly influenced British and American romanticism as well, which are often taken to represent the starting-point of modern ecological thought in the Anglo-American world. Coleridge's ideas on the literary imagination as a both deconstructive and reintegrative aesthetic activity are to a considerable extent inspired by Schelling, and Emerson's description of the sources of intellectual and artistic power in the productivity of nature itself, or more precisely, in the dynamic interplay between self, nature, and oversoul, in turn owes much to Goethe and to Coleridge's translation of Kant and Schelling into the Anglophone literary cultures. This history of intercultural and transatlantic exchange helped to contribute a new awareness of the role of nonhuman nature as an active agent and co-evolutionary force that cannot be objectified as mere external

For an introductory overview of German philosophy and the environmental imagination, see Wilke (2015: 17–21).

material context of human civilization but is intrinsically part and energetic source of its highest cultural developments.<sup>2</sup>

Friedrich Nietzsche, a core reference for poststructuralist theories as a philosopher of free play and epistemic perspectivism, has been reinterpreted within an ecocritical framework in view of the valorization of matter, the body, and the interrelatedness with nonhuman life in his conception of human existence. His notion of the Dionysian envisioned a radical, both subversive and productive aesthetic alternative to Apollonian order and Socratic rationalism, advocating the reconnection to elemental, pre-individual energies as a pathway toward overcoming the abstract individualism of modern society in favor of a new form of civilization beyond conventional binaries of mind and matter, human and posthuman orientations. Nietzsche's reception in ecocriticism is far from uncontroversial, however, ranging from his association with an "apocalyptic ecocentrism" (Garrard 2004: 100) to the denial of any affinity to modern environmentalism because of his basically anthropocentric vision (Zimmerman 2014).

One position that has gained even more visibility as an important reference-point for ecotheory is Martin Heidegger's existential phenomenology, especially his concept of "poetic dwelling" and his view of the artwork as "a field of being which allows us to gain insight into relations between things, people and environment which we fail to note in everyday life" (Goodbody and Rigby 8). In place of the modern subject-object dichotomy and the concomitant drive to scientific-technological mastery over nature, Heidegger advocates an awareness of existence as a concrete "being-in-the-world" of the human subject, which is expressed in paradigmatic ways in poetry—his chief example being the reflective-idiosyncratic yet also classic-cosmopolitan poetry of the German romantic writer Friedrich Hölderlin. The controversial role of Heidegger in intellectual history in terms of his involvement with the National Socialist regime is discussed in different contributions, ranging from

<sup>&</sup>lt;sup>2</sup> By conceiving the fundamental culture-nature symbiosis to be a shaping factor of cultural semiosis and artistic signification, German *Naturphilosophie* and literary romanticism already point forward, as Kate Rigby argues, to the approach of biosemiotics as an important branch of contemporary ecocriticism (Rigby 2014). Biosemiotics, represented by Maran, Wheeler, and others, posits the unceasing communicational process of signs between various forms of living beings as the basis of both natural and cultural processes of survival and creativity (Wheeler 2006). For the ecocritical relevance of *Naturphilosophie*, see also Wilke (2008).

Jonathan Bate's cautious appropriation to Greg Garrard's wholesale rejection of Heidegger as a relevant inspiration for ecological thought, a conflict that indicates the spectrum and intensity of Heidegger's reception in contemporary ecocriticism (Bate 2000; Garrard 2010).

Maurice Merleau-Ponty extended Heidegger's existential phenomenology into an ecophilosophy, which more concretely stresses the embodied "immanence of language and thought in the natural world" (Westling 2011: 131). Merleau-Ponty emphasizes the open, fluid, and in-between status of existence between subject and object, mind, and body. Language articulates "the bond between the flesh and the idea, between the visible and the interior armature which it manifests and which it conceals" (Merleau-Ponty 149). We live in a fundamental ambiguity, being neither pure consciousness nor pure thing, neither pure mind nor pure body. This in-between state is connected to what Merleau-Ponty calls the *Leib* as distinct from the body as pure material object on the one hand and from the mind as pure thought on the other. The Leib is the "body we are," as distinct from the Körper, the "body we have" (Rigby 2011: 142). Mind and body, self and world are interdependent but also irreducible to each other. This form of ecophenomenology illuminates the relational complexities of human-nature coexistence in such a way that human self and nonhuman nature are always interacting but also always evade full mutual transparency.

With such ideas, Merleau-Ponty has become immensely influential in recent ecocriticism, especially but not exclusively in ecofeminism, ecopsychology, and ecosemiotics. David Abram, for example, interprets Merleau-Ponty's notion of the "flesh" in his own way as "the mysterious tissue or matrix that underlies and gives rise to both the perceiver and the perceived as interdependent aspects of its spontaneous activity" (Abram 1997: 66). Abram identifies this elemental matrix of Merleau-Ponty's "flesh" with a primordial reality, which Abram conceives as "the biosphere as it is experienced and *lived from within* by the intelligent body—by the attentive human animal who is entirely a part of the world that he, or she, experiences" (65). Abram also traces in Merleau-Ponty's ecophenemonology the genesis and expressive power of language, claiming that "language is the very voice of the trees, the waves and the forest" (65). This however expands Merleau-Ponty's philosophy into an all-too-confident linguistic ecocentrism, which assumes an unbroken continuity between nature

and language and thus evades the crucial question of translation, mediation, and alterity that remains ineradicably present in ecological thought and literature.

One of the founding figures of UK cultural materialism, Raymond Williams, who provided the theoretical underpinnings of cultural studies, has also been newly interpreted in this ecological reassessment of cultural criticism and theory. His major works, Culture and Society, The Long Revolution, and The Country and the City, had long been read solely in terms of a political, social-historical, and discourse-analytical agenda of cultural materialism, while the strong presence of an environmental and ecocultural dimension of his writings was only recognized when ecocriticism began to look anew at his important contextualization of culture in nature, of social evolution in biological evolution, of the human mind in its changing environments (Wheeler 2006: 14). In his *The Long Revolution*, Williams describes historical change against the background of possessive individualism and consumer capitalism but also from an awareness of human sociality, democracy, and complex interdependency with nonhuman life. Full awareness of the human condition must include these complex interrelations, since, as Williams learned from his non-reductionist readings of contemporary biology, "human species perception is both embodied and enworlded" (Wheeler 15). Williams's "essentially 'ecological' understanding" of these processes is that he "sees [evolution] as a process of symbiogenetic co-operative communication (from the cell all the way up), with the consequent emergence of more complex levels of life" (Wheeler 13). Far from being the opposite of cultural change, "nature" in this sense is a potential source of social critique and alternative values. In The Country and the City, Williams refers to William Wordsworth and John Clare (among others) to describe both the damage inflicted on nature by industrialization and the poetic recovery of "nature" not just as a nostalgic ahistorical pastoral but as a sociohistorically relevant source of values of "human respect and human community" (Williams 2000: 52). Caught in the collision between pastoral literary traditions and the destructive impact of capitalist market values, the poet translates the internalized loss of unspoiled nature into an act of textual survival, as Williams formulates with reference to Clare: "It is to survive at all, as a thinking and feeling man, that he needs the green language of the New Nature" (Williams 2000: 58).

Another direction of theory, which has been recuperated for the genealogy of ecological thought, is the Frankfurt school of Critical Theory and their circle. In Theodor Adorno and Max Horkheimer's Dialectic of Enlightenment, art represents a resistance of nature—however oblique—against the totalizing claims of instrumental reason. (Civelekoglu) More explicitly, Adorno's Aesthetic Theory has been illuminated in its ecotheoretical potential (Wilke 2009; Soper 2011), for example in Kate Soper's critical rehabilitation of romantic nature poetics from the perspective of Adorno's dialectic aesthetics of nature. In the writings of the English romantic poets to which Soper refers, this dialectic consists not in any simplistic return to nature as a source of "truth, authenticity, and intrinsic value" outside human intrusion but in an "altogether more complex" approach. "[E]ven as it [i.e., romantic poetry] summons the otherness of nature and celebrates its independence, it also recalls us to the culturally mediating role of the summons, and to the extent of the dependence of the aesthetic response to nature on its human representation" (Soper 2011: 19). The dialectic that is expressed here on the level of poetry, according to Soper, is philosophically articulated in the aesthetic theory of Adorno, who "always presents nature as compelling for us precisely as a counter to commodification and the dominance of our own constructions; but even as he recognizes the summons of the spontaneously given and preconceptual in nature, he also acknowledges the extent to which what is discoverable as beautiful or worthy in virtue of its naturalness owes its reception as such to culture" (20). Literary aesthetics is thus situated in an in-between space of discourse between cultural mediation and immediate experience, between the conceptual and the preconceptual, in a paradoxical mode of speaking that signals "the momentary liberation ... from the confines of the enclosure within the perceiving and representing self" (21). In this self-reflexive openness to an ultimately ungraspable other, Adorno's dialectic concept of the aesthetic has affinities to romantic concepts such as Keats's "negative capability," which declares radical indeterminacy, semantic openness, and resistance to the reifying determinacies of "fact and reason" as the defining features of literary art (Soper 21). In this sense, romantic poetry, and by extension imaginative literature in general, is not just a rhetorical vehicle of contemporary structures of power and discourse but has a potential of transgressing and breaking out of their totalizing pressures, both socially in its resistance to modern consumer society, whose origins coincide with the rise of romantic literature, and ecologically in its resistance to the ideological dominance and discursive appropriation of other-than-human nature. Sweeping generalizations such as by Timothy Morton, who decrees romantic nature poetry as a mere literary symptom and complicitous ideology rather than a critique of the emergent consumer society of its time (Morton 2010), miss the subtle dialectics that is at work here both in the poetry itself and in its modern theoretical reflection in Adorno's aesthetic theory (Soper).

Walter Benjamin, too, has been reconsidered as an urban ecologist and philosopher of waste in his analysis of modern consumer fetishism, which goes along with an awareness of the historical wastelands left by the discarded products of civilization (Sandilands 2011). Urban landscapes are sites of isolation and commodification but also of new experiences of self-enhancement in the paradoxical merging between self and collective, natural and urban environments that is epitomized by the figure of the flâneur. Benjamin circumscribes the task of such urban ecology in the oxymoronic trope of "botanizing on the asphalt" (quoted in Gersdorf 2013: 40), which reverses the culture-nature binary underlying industrial-capitalist society, linking the archaeology of social alienation with a fragmentary form of writing that recovers glimpses of a new cooperative relationship between culture and nature from the garbage of history (Sandilands 2011).

Foremost protagonists of postmodernism and poststructuralism as well are being re-read from an ecological perspective. Linda Hutcheon was among the first literary theorists to point out affinities between postmodernism and ecology, arguing that both of these movements represent a response to the "crisis of modernity" and to its "ordering impulse of rationality, the totalizing power of system" (Hutcheon 1993: 161). As Verena Conley likewise has pointed out in a more extensive way, both movements are a reaction to the dialectic of enlightenment and to the reverse side of the technological-economic progress of modern civilization—specifically, in the case of ecology, to the devastating consequences for the environment of models of uniformity and homogeneity against the values of pluralism and diversity foregrounded in both postmodernism and ecology. This increased attention to ecological questions had already been developing within later postmodern philosophy. Jean-Francois Lyotard's critique of totalizing assumptions and coercive grand

narratives implies such references when he links up this critique with a form of "ecology" which aims at discursively empowering the concrete, manifold forms of human life that are overshadowed or even silenced by those dominant grand narratives (Lyotard 138–139). This relates both to marginalized social groups and to internal factors like repressed psychic forces. Lyotard replaces Freud's term "psychic economy" with the term "psychic ecology," which designates the ecological interconnections of self and meaning that have "slipped away" from the representational order of public discourse (Lyotard 136). The paradoxical articulation of this pre-discursive dimension is to be performed in a noninstrumental, non-utilitarian mode of writing which Lyotard ascribes to art and literature. Lyotard states: "... to me, 'ecology' means the discourse of the secluded, of the thing that has not become public, that has not become communicational, that has not become systemic, and that can never become any of these things. This presupposes that there is a relation of language with the logos, which is not centered on optimal performance and which is not obsessed by it but which is preoccupied, in the full sense of 'pre-occupied,' with listening to and seeking for what is secluded, oikeion. This discourse is called 'literature,' 'art,' or 'writing' in general" (Lyotard 136–137).

Much more visibly, Jacques Derrida has entered the scene of ecocritical theory. In his later writings especially, the deconstruction of binary oppositions such as between mind and body or between culture and nature entails an opening of poststructuralism toward an ecological and, again, a literary-aesthetic dimension. His critique of logocentrism is extended toward a critique of anthropocentrism, which recasts the human-animal relation as a relation of both intimate familiarity and unavailable otherness. Derrida moves "from 'the ends of man,' that is the confines of man, to 'the crossing of borders' between man and animal" (Derrida 372). The title of his essay, "The Animal That Therefore I am," already sets the explorative, playfully self-reflexive tone of the essay, revising the classical epistemological stance of the knowing human subject—Descartes's "cogito ergo sum" ("I think therefore I am")—into a syntactically indeterminate, open-ended, and dialogic process in which the rational cogito is superseded by the living animal as nonhuman other that is established as a basic relation of human existence and (self-) knowledge. To think and speak in such a nonanthropocentric way, according to Derrida, becomes possible less in a philosophical than in a literary mode, because the

latter offers the possibility of opening the text to the perspective of the animal while remaining aware of its incommensurability.

Since so long ago, can we say that the animal has been looking at us? What animal? The other. I often ask myself, just to see, who I am—and which I am (following) at the moment when, caught naked, in silence, by the gaze of an animal, for example the eyes of a cat, I have trouble, yes, a bad time overcoming my embarrassment.... Although time prevents it, I would of course have liked to inscribe my whole talk within a reading of Lewis Carroll. In fact you can't be certain that I am not doing that, for better or worse, silently, unconsciously, or without your knowing. You can't be certain that I didn't already do it one day when, ten years ago, I let speak or let pass a little hedgehog, a suckling hedgehog (un nourrisson hérisson) perhaps, before the question "What Is Poetry."

For thinking concerning the animal, if there is such a thing, derives from poetry. There you have a hypothesis: it is what philosophy has, essentially, had to deprive itself of. That is the difference between philosophical knowledge and poetic thinking. (Derrida 2002: 367–377, 372)

Derrida here ascribes to literature a generic difference in terms of ecological thought. This difference is connected with the capacity of poetry to open the text for the other of nonhuman nature while at the same time remaining aware of its irreducible alterity. The influence of Emmanuel Lévinas on Derrida is notable in this emphasis on the unavailability of the otherness of nonhuman nature, which ties up with other attempts citing Lévinas as a possible source of an ecological literary ethics (Claviez).

One major voice of recent ecotheory, who radicalizes the idea of a latent affinity between deconstruction and ecology into an explicit thesis of their mutual convergence, is Timothy Morton. Rather than elucidating strands of ecology in Derridean thought, Morton claims Derrida's deconstruction as a whole for what he calls "dark ecology" or, even more universalizing, "the ecological thought" (Morton 2010). Far from being an antipode of ecocriticism, deconstruction can serve in this view as a theoretical ally, if traditional conceptual constructs, among them the concept of Nature itself, are critically examined in the light of their embeddedness within discursive structures of power, dominance, and domestication. Indeed, like social theorist Bruno Latour before him (Latour), Morton advocates abolishing the term "nature"

altogether and instead to take the inseparable entanglement of culture and nature, human and nonhuman life, mind and material world, as a zero starting point for a radical opening up of ecological thought to its fundamental premise of the infinite interconnectivity of everything with everything else. This kind of ecological thought is active everywhere, extending from the microstructures to the macrostructures of life. Morton radically implements this thinking of infinite connectivity by absorbing the most heterogeneous material from theory, science, culture, media, philosophy, art, literature, and everyday life into a multivectoral trajectory of impossible but irresistible textual integration. This integration, however, cannot take place on the cognitive level alone but requires speculative leaps to create connections between usually disconnected domains—between theory and practice, discourse and the real world, rational and emotional registers, skepticism and affirmation. Indeed, and at this point the influence of Lévinas becomes evident again, such a leap vitally concerns the ethical relation between self and other, which can only be founded on love as the unconditional acceptance of the shared coexistence with strange strangers in an ethics that is both intensely personal and collective-planetary in scale (Morton 2010).

In a different line of thought, Gilles Deleuze and Felix Guattari have also become important figures for ecocriticism with notions like the rhizome or the assemblage, which decenter dichotomic hierarchical systems into open horizontal processes and dissolve the discrete self into shifting clusters of multiple relationships (Lussier, Berressem, Herzogenrath). Guattari's "ecosophy" extends the bioevolutionary notion of autopoiesis developed by biologists Varela and Maturana to the sphere of human culture. He distinguishes three dimensions of ecology ranging from natural to social ecology and to the ecology of the human subject (Guattari). Inspired by such diverse sources as Spinoza and Kant, but also by the critique of the humanist subject and the concept of Dionysian art in Nietzsche, as well as by chaos theory, highenergy physics, and quantum cosmology, Deleuze and Guattari develop a "transcendental empiricism" which opens up a field of pure immanence and of experiential intensities, in which the ecological self emerges at the very point where "subject-object relations break down," and which "vibrates with the creative potential of endless evolutions and innovations" (Lussier 256). The self dissolves into relational intensities that extend from a molecular to

a cosmic scale, creating an experience of universal interconnectedness in a kind of "ontological string theory stretching across the boundaries of self and alterity," and involving "energetic flights across the boundaries between the human and the more-than-human" (Lussier 258).

In the wake of increasing Deleuze-reception, such conceptual mergings between science and philosophy, body and text, physics and culture, have become markedly more influential in recent ecotheory. While these attempts sometimes border on the speculative or even esoteric, they are nevertheless of considerable interest for a cultural ecology of literature. The Deleuzean ideas that are most pertinent in this context are the notions of self/other and nature/ culture relations as dynamic fields of potentialities rather than objective factualities, along with other notions with a transdisciplinary potency such as infinite connectivity, emergence, energy, creativity, transformation, and indeterminacy. These aspects converge into a radically affirmative philosophy of Life beyond individual life, which, however, remains an open experiential field of being-as-becoming that evades both the "gridded territory of conventions, codes, labels and markers" (Lussier 257) and the certainties of discursive meaning and signification. The movement of this kind of paradiscursive "ecologics" consists in defamiliarizing the familiar and breaking up closed systems of thought into living textual energy-flows, which are channeled through a constantly shifting structural coupling of form and matter, pattern and medium (Berressem). This movement, it turns out, strikingly resembles the ways in which cultural ecology describes the dynamics of literary texts. In a revealing parallel, Mark Lussier likens the sense of indeterminacy and "uncertainty" in Deleuzean thought to the principle of "negative capability," the principle of poetic communication formulated by the English romantic writer John Keats, to which Kate Soper likewise refers in her ecocritical alignment of English romanticism and Adorno's aesthetic theory (Lussier 257; Soper 2011); for literary art, this postulates a radical suspension of all certainties that transports the reader into the high-energy field of an in-between state of "uncertainties, mysteries, doubts, without any irritable reaching after fact and reason" (Keats). Deleuze's speculative flights of philosophical thought can thus be read, on one of its many "plateaus" of actualization, as metaphoric translations of processes of art and poetry into the sphere of scientific-philosophical discourse. Seen in this way, the transversal energy flows that Deleuze traces in and between

the fields of science, society, bodies, and material objects are tropes of creative processes that are also the subject and medium of poetic texts. Their ecological formation resembles in significant ways the eco-poetic dynamics of imaginative literature as described by cultural ecology.

In a related context, the project of a "material ecocriticism" (Iovino and Oppermann 2014) has emerged from the attempt to bridge the gap between ecology and postmodernism, as well as between the material sciences and ecological processes in culture—as in the works of Katherine Hayles, Karen Barad, Stacy Alaimo, Jane Bennett, Serenella Iovino, or Serpil Oppermann. Aiming to displace the dichotomy between mind and matter, culture and nature in an ecocritical dialogue with science studies, this project clearly intersects with and has substantial affinities to the paradigm of cultural ecology. I come back to these affinities later in the book (cf. Chapter 10). Material ecocriticism responds to the problem of poststructuralism and discourse analysis, which "have exorcized nature and materiality out of representation and have thus closed in representation on itself" (Herzogenrath 2). It reinterprets postmodernism not as pure cultural constructivism but as a hybrid form of "discursive realism," which adapts insights of the postclassical sciences about nonlinear complexities, epistemic pluralism, the agency of matter, and permeable boundaries of self and world to textuality and writing (Oppermann 2006).

The developments just described indicate a complementary tendency in ecocriticism and in critical theory toward an increasing cross-fertilization and convergence between the formerly separated domains of ecology and culture. The approach of a cultural ecology which is advocated in this book concurs with this general tendency places it at its theoretical and methodological center and specifically differentiates it in view of its relevance for the fields of literature and literary studies. The foregoing brief survey of the relationship between ecocriticism and critical theory can be summarized in four main points. *First*, recent critical theory has moved beyond the radical constructivism of the "linguistic turn" toward a modified form of discursive ontology, extending a purely culturalist and self-referential epistemology toward a materialist-relational epistemology of self and world. *Second*, this shift involves an opening of postmodern critical theory toward an ecological perspective in the sense of the ineluctable interactivity of human culture

with the "other" of nonhuman life, the material environment, and the earth. *Third*, this ecological perspective goes along with an overcoming of the "cynical nihilism" (Morton 2010) and ironic negation of all values in purely self-referential versions of postmodernism, toward an affirmation of life and the earth as an inevitable premise of ecological thought and ethics—even if this affirmative relation is conceived as paradoxical and non-identifying, intending no glossing over of contradictions but, on the contrary, the inclusion of *all* aspects of life and universal coexistence in its discourse. And *fourth*, this ecological shift in critical theory is connected, sometimes subliminally, sometimes explicitly, with a reassessment of literature and the aesthetic as a distinct form of cultural practice that is particularly capable of dealing with the cognitive, psychological, affective, and ethical complexities that such an ecological perspective brings about. All too often, however, this reassessment remains a mere postulate and is not sufficiently translated into literary theory and textual interpretation, which is precisely what this study is trying to do.

## Part Three

# Literature as Cultural Ecology

# From Natural Ecology to Cultural Ecology

"Cultural ecology" as a term was coined by Julian Steward and was first used in the context of anthropology and ethnology, designating the importance of the natural environment for the evolution of human culture. Cultural ecology in this sense investigated the concrete influence of environmental conditions such as climate, soil, terrain, water resources, animal populations, and plant species on the technologies and forms of production but also on the values and mythologies of cultures. In some of its versions, this kind of cultural ecology moved toward a strict functionalism and environmental determinism, in which social structures were mono-causally derived from local physical conditions of life (Carneiro 2003). This form of naturalistic reductionism was practiced in anthropology, archaeology, or geography and was subsequently criticized by an emergent political ecology for its lack of attention to human agency and a globalized political economy. The concept of adaption was transferred from evolutionary biology to the evolution of cultures. Typical fields of application were farming methods, the use of domestic animals, forms of labor, rituals, and festivals in response to environmental conditions such as aridity, temperature, or rainfall patterns, often in reference to relatively homoeostatic preindustrial rather than modern dynamic societies. However, the deterministic strain of cultural ecology had its counterpart in an "environmental possibilism" (J. W. Bennett 162), which goes back to anthropologists like Franz Boas and Alfred Kroeber and assumes that the "natural environment sets certain possibilities of options from which cultures, conditioned by their history and particular customs, may choose" (Marquette). This form of cultural ecology favors an "interactive and dialectical rather than a deterministic view of the relationships between cultures and their environment which has remained at the center of cultural ecological approaches" (Marquette). Steward himself, who was

a student of Kroeber at Columbia, emphasized the multilinear rather than unilinear process of culture change and pointed out the difference of culture and consciousness from primary organic life: "Man enters the ecological scene ... not merely as another organism which is related to other organisms in terms of its physical characteristics. He introduces the super-organic factor of culture, which also affects and is affected by the total web of life" (Steward 31). This super-organic factor can be defined in naturalistic terms as the collective cooperation of individual organisms as in insect societies (Hölldobler and Wilson) or in ecocultural terms as indicating an emergent, qualitative difference between biology and human society, between natural and cultural ecology. It is in this double framework of both interrelatedness and difference between mind and life, nature and culture, that recent cultural ecology has developed its main concepts and theoretical perspectives.

A key figure in extending cultural ecology beyond its biologicalanthropological origins and in establishing it as a transdisciplinary approach in the humanities has been Gregory Bateson. Bateson's work spans a broad range of disciplines ranging from anthropology to logic, from psychology to epistemology, from ethnology to language theory, from cybernetics to philosophy. It does not cohere into a unified scientific system but rather brings together heterogeneous fields of knowledge in a form of "consilience" (Wilson 1998), in which the deeply entrenched epistemological divide between the natural and the human sciences is bridged and common patterns of mind and life are explored beyond disciplinary boundaries. These patterns are shared across different epistemic and cultural fields, but they also vary according to specific contexts and do not designate fixed properties of given realities but rather emphasize nonlinear, emergent processes characterized by interacting networks and recursive feedback relations. Accordingly, in his project of an Ecology of Mind (1973), Bateson considers culture and the human mind not as closed entities but as open, dynamic systems based on living interrelationships between the mind and the world, between the mind and other minds, and within the mind itself. The mind of the individual ego is expanded toward an ecology of vital interrelations with other minds and with their natural as well as historical-cultural environments. Bateson thinks of the mind neither as an autonomous metaphysical force nor as a mere neurological function of the brain but as a "dehierarchized concept of a mutual dependency between the

(human) organism and its (natural) environment, subject and object, culture and nature," and thus as "a synonym for a cybernetic system of information circuits that are relevant for the survival of the species" (Gersdorf and Mayer 2005: 9). Culture is seen as an evolutionary transformation and metamorphosis rather than a binary opposite of nature. The mind is placed "in the very heart of natural history, in the self-generating grammar of living processes and of their incessant, remarkable metamorphoses" (Manghi xi). But the mind is also placed in the heart of cultural history, as a fluid, open, dynamic field of complex feedback loops within and between individual minds, forming interpersonal circuits of communication which are continually driving, transmitting, and balancing processes of cultural evolution and survival. While causal deterministic laws are therefore not applicable in the sphere of culture, there are nevertheless productive analogies which can be drawn between ecological and cultural processes.

In Peter Finke's integrative approach of an Evolutionary Cultural Ecology, Bateson's ideas are developed further in ways that even more explicitly relate to crucial issues of the humanities and of cultural studies. Finke conceives of cultural ecology as a general theory that regards ecology as a paradigm not only for the natural and human sciences, but for cultural studies as well. His Ökologie des Wissens (Ecology of Knowledge 2005) fuses ideas from Bateson's ecology of mind with concepts from evolutionary biology on the one hand and from social systems theory and linguistics on the other. Finke's aim is likewise to reconnect the various cultures of knowledge that have evolved in history, and that have been separated into more and more specialized disciplines and subdisciplines in the development of modern science (Finke 2005). In this view, the sphere of human culture is not considered as separate from but as interdependent with and transfused by ecological processes and natural energy cycles. At the same time, Finke's evolutionary cultural ecology recognizes the relative independence and self-reflexive dynamics of cultural processes. Rather than genetic laws, information and communication have become major driving forces of cultural evolution (see Finke 2005, 2006).

Building on the biologist Jakob von Uexküll's distinction between *Umwelten* and *Innenwelten*, that is, between external and internal environments, which Uexküll ascribes to nonhuman as well as to human life (Uexküll), Finke develops the notion of *cultural ecosystems*, which have emerged in

coevolution with natural ecosystems but have generated their own rules of selection and self-renewal, of production, consumption, and reduction of energy, along with their functionally differentiated tasks within society and culture. Language, economics, politics, law, religion, administration, science, as well as art and literature are such cultural ecosystems, which have been increasingly differentiated especially in the process of modernization since the eighteenth century and have produced their own forms of autopoiesis and self-reproduction. Language as a cultural ecosystem is especially important here as a shaping factor in the process of cultural evolution. Language represents a "missing link" between cultural and natural evolution (Finke 2006), because it relates back to concrete biophysical forms of information and communication in the pre-cultural world of nature but also transforms them into more abstract, symbolic, and generalizing systems of human interpretation and self-interpretation. Language thus decisively contributes to the emergence of internal worlds of consciousness and culture that are characteristic of the cultural evolution. Language and other cultural sign systems, in turn, are the material and the medium of art and literature, whose task is the constant critical examination, imaginative exploration, and creative self-renewal of these cultural sign systems. The characteristic environments of modern humans are not just external but internal environments—the inner worlds and landscapes of the mind, the psyche, and the cultural imagination which make up the habitats of humans as much as their external natural and material environments. Literature and other forms of cultural imagination and cultural creativity are necessary in this view to continually restore the richness, diversity, and complexity of those inner landscapes of the mind, the imagination, the emotions, and interpersonal communication which make up the cultural ecosystems of modern humans but are threatened by impoverishment from an increasingly overeconomized, standardized, and depersonalized contemporary world.

### Cultural Ecology and Material Ecocriticism

Within the previously described developments in recent ecocritical theory, cultural ecology resembles in some ways the "widescreen" version of ecological thought as advocated by Timothy Morton, which is not confined to the ecological sciences and to environmental issues in a narrowly thematic sense but which also "is to do with art, philosophy, literature, music, and culture" (Morton 2010: 4). In extending the meanings of "environment" to include not only external, natural environments but also cultural, urban environments, as well as the internal worlds of human beings and their interpersonal relationships, cultural ecology fully concurs with statements like the following: "Human beings need each other as much as they need an environment. Thinking ecology isn't simply about nonhuman things. Ecology has to do with you and me" (4). At the same time, cultural ecology remains more consistently focused on the culture-nature relationship than such highly generalizing versions of ecological thought, when they claim that "[e]cology includes all the ways we imagine how we live together" (4). If ecology is everything that has to do with how human beings live together, it becomes difficult to distinguish it from other forms and directions of thought. Unlike such an allencompassing eco-philosophy, cultural ecology is a concrete scholarly project, which examines the various ways in which the functions, structures, and evolutionary processes of human cultures as reflected in art and literature are interconnected with and dependent on processes of nature but also the ways in which they have gained a relatively high degree of evolutionary autonomy and of complex, eigendynamical (Berressem) forms of self-organization.

Like all ecological thought, then, cultural ecology emphasizes relationality and interconnectedness on all levels and in all areas of study. At the same time, it resists the tendency in recent versions of ecotheory to abolish all boundaries and to highlight universal interconnectedness while neglecting the very real differences and boundaries that continue to exist both on the material-semiotic level between cells, organisms, and ecosystems, and on the cultural-semiotic level between cultures, social systems and subsystems, identities, forms of knowledge, and genres of texts. Cultural ecology is distinct from such universalizing ecocentric theories in that it thinks together the two axiomatic premises of an ecological epistemology, connectivity and diversity, relationality *and* difference. This especially concerns the fundamental relation between culture and nature, which are seen to be inextricably interconnected but also cannot be reduced to each other. It does not seem helpful from this perspective simply to do away with the concept of "nature" altogether, as Morton proposes in his Ecology Without Nature, more or less absorbing nature into an ecocritically enriched discourse of deconstruction within the framework of a material object philosophy. In a way, Morton repeats the move which Paul de Man had already performed in the heyday of deconstructionism, when he criticized romantic nature poetry for reifying its textual signifiers into properties of the signified (de Man). Nor does it seem helpful, in an opposite move of establishing a body-centered "earthly cosmology" (Abram), to do away with the concept of culture and absorb it into the radical egalitarianism of an ecocentric phenomenology, as in Abram's Becoming Animal, or indeed to discard human civilization altogether in favor of returning to a primordial state of "Uncivilization," as advocated in such eco-apocalyptic manifestos as that of the Dark Mountain Project (2009). In both cases, the difference between nature and culture is dissolved into a space of undifferentiated (con-) fusion, in one case into the domain of mind and critical discourse, in the other into the domain of affective relations and elemental empathy.

To be sure, the opposition between culture and nature has served as central ideological underpinning not only of an anthropocentric dominance over the earth but of internal structures of civilizational power and repression in terms of gender, race, class, sexuality, or ethnicity. In this sense, the critique of such entrenched binaries and constructs of "nature" is both liberating and

Ome strands of material ecofeminist theory also advocate a similar, double approach. See Stacy Alaimo's comment on Val Plumwood's Feminism and the Mastery of Nature: "By insisting upon both continuity and difference, Plumwood offers a philosophical frame to counter the system of dualisms that have undergirded a network of oppressions." (Alaimo 1996–1997)

indispensable to any enlightened ecological thought. In their association with features like "hierarchy, authority, harmony, purity, neutrality, and mystery" (Morton 2010: 3), such essentializing concepts of a capitalized Nature easily lend themselves to ideology and reactionary politics. At the same time and for this reason alone, it seems necessary to include the critical reflection of the various cultural concepts of nature in human history, within and between cultures, in any fully self-aware ecocritical discourse. In Morton's own ecological thought, nature as a signifier keeps reappearing in multiple places like a ghost that is haunting and undermining his argument, time and again surviving the attempt of its rhetorical exorcism. Indeed, the discourses of climate change and of the Anthropocene as a new geological era presuppose this very differentiation between human and nonhuman agency, and thus between culture and nature, since climate change is by definition anthropogenic and not "natural" in origin, even if the results of these processes are irreversible and endanger the survival of the human species whose historical-cultural agency has set them in motion. The discourses of climate change and of the Anthropocene presuppose the assumption that these phenomena are the result of human intervention in a prior, albeit dynamic and turbulent, but nevertheless precariously balanced state of relative equilibrium of the planetary ecosystem, which has been increasingly disrupted by human intervention in the course of unrestrained economic-technological expansion. As such, this assumed prior state of relative planetary equilibrium represents the point of departure and frame of reference for current observations on the scale and degree of climate change, as well as for potential measures to avoid the worst-scenario environmental catastrophes. Without this assumption of an always shifting but nevertheless real difference between human culture and nonhuman nature, the whole argument of the climate change discourse would not work, since it is precisely the difference between anthropogenic and non-anthropogenic factors that underlies the statistical trajectories of climate change science as well as the distinction between climate and weather put forward in popular climate change debates.

More generally speaking, historical and transcultural comparisons amply demonstrate that "nature" is by no means a monolithic ideological fabrication but that it has been constructed in manifold and indeed radically different ways in cultural history. In a critical archaeology of ecological thought, these different lines of thought need to be retraced in order to gain an adequately complex picture of the ways in which human civilization has conceived of its relationship to the nonhuman world throughout different stages and courses of its evolution. Ecological thought in pre-classical or classical Greece, for example, or in the Middle Ages, or in romanticism, or indeed in modernism and postmodernism, fails to conform to any single ideological model but contains positions and ideas which can be the target of a critique of western anthropocentrism, or others that can be claimed for a continuity of evolving ecological thought that reaches back to the very beginnings of human civilization. David Macauley's Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas is an example of such an archaeology of ecological thought, which actualizes the rich potential of environmental philosophy since ancient Greece for an exploration of the significance of the four elements in ecological thought across historical periods and cultural spheres up to the very present (Macauley). Obviously, the same need for a differentiated approach applies to non-western cultures as well, in which the concept of nature likewise has been an omnipresent cultural signifier for the ways in which human culture and civilization defined itself in relation to the primary conditions of its emergence and possible survival; here, again, its meanings vary across a broad spectrum indicating relations of conflict or cooperation, separation or symbiosis, dominance or co-evolution between culture and nature.<sup>2</sup> What this means is that nature seems to be an inevitable notion through which human culture has and continues to define itself. Nature is an "other" that is also a vital part of human culture and the human self. But as such, it still is and remains an "other," something never fully available, never just another version of the same, never entirely reducible to the self. Nature is, and is not, a cultural construct. It is the necessary human construct of that which is not a human construct.

On the other hand, the processes and activities of culture cannot simply be identified with processes of material nature. They do not obey the same causal-empirical laws as natural processes but are characterized by their own internal dynamics and evolutionary developments, which can be productively described

<sup>&</sup>lt;sup>2</sup> Joni Adamson has highlighted this in her concept of "multinaturalism," referring especially to the diverse nature concepts of indigeneous cultures, which however also lend themselves to a transcultural "ecocosmopolitics" (Adamson 2012).

in their manifold analogies to evolutionary developments in the nonhuman world, yet are distinguished from them to the degree that they are shaped by human agency, intentionality, and "semiotic freedom" (Wheeler 2011). Within the new ecocritical approach of a material ecocriticism, it has been rightly pointed out that the nonhuman world of material nature is not inert but "vibrant," continually in motion, changing, and, "in a sense, alive" (Bennet 117). Assimilating knowledge from the postclassical material sciences into ecocritical thought, material ecocriticism ascribes independent agency to matter and to nonhuman life as well as to human culture.

Material ecocriticism represents an important and innovative step beyond former exclusionary binaries, which opens up entirely new research agendas and promises to be highly relevant for future ecological literary and cultural studies. This potential has been impressively demonstrated by Serenella Iovino and Serpil Oppermann in their various contributions, which highlight the many ways in which material processes condition, shape, interact, transform, and co-evolve with discursive processes in politics, society, culture, media, and texts (Iovino and Oppermann 2014). Adapting insights into the co-agency of mind and matter, humans and nonhumans, social and material forces as theorized in science studies (Bennet, Latour), material ecocriticism shows how diverse modes of ecological communication from film to landscape art, from political speech to toxic discourse, from illness narratives to civic resistance, from popular culture to literary art are transfused by material signifiers and energies which are an intrinsic part of their discursive processes. This approach casts new light on various forms of ecological thought, laying bare its inextricable interdependence with the material processes that it is aiming to conceptualize. It also helps to illuminate more explicitly a dimension of literary texts that has all too often been neglected, even though it has been a shaping force of aesthetic processes in literary history long before the emergence of modern ecocritical thought, by focusing on the elemental realities, things, and objects with which the lives of literary characters are enmeshed. It draws attention to the role of time and space as conditioning and limiting factors of human intentionality and to the importance of more-than-human agencies appearing as fate, chance, or monstrous concatenations in the conception of literary plots. The uncanny entanglements between humans and things, organic and inorganic

forces in gothic novels; the determining role of genetic, historical, and social factors in naturalistic writings; the overpowering influence of urban milieus as major agencies in modern city narratives; the hypertrophic wasteland scenarios pervading the landscapes of postmodern fiction; not to speak of the manifold agentic manifestations of nuclear, chemical, biotechnological, toxic, plastic, computer, media, cyborg, AI, and other material products and processes in a contemporary Anthropocene depicted in dystopias, ecothrillers, and environmental disaster narratives—all of these supply multiple evidence of that entanglement of material and discursive agencies in texts and other artifacts, which material ecocriticism productively and systematically points out as one pervading topic of ecocritical theory and textual analysis.

While cultural ecology likewise highlights the indissoluble interconnectedness and dynamic feedback relations between culture and nature, mind and matter, text and life, it remains aware of the fluid and evershifting but nevertheless real differences and boundaries that have emerged within and between them in the long and ever-accelerating history of cultural evolution. This double relation of connectivity and difference can be found in the various phases of evolution: the emergence of life from matter, of animal life from plants, of human from nonhuman life, of the cultural from the natural evolution. In all these cases, the former stage of evolution remains present in the later stage, which, however, develops its own new and irreversibly distinct forms of self-organization. Human culture and consciousness have evolved from but cannot be reduced to matter and bodily natures: they are matter or nature becoming self-aware. In this sense, cultural ecology is not simply a deterministic application of biological ecology to human culture and society but takes into account the semi-autonomous dynamics and increasing internal differentiation of culture, consciousness, and the human mind. The ecological principle of diversity entails awareness and recognition, both in an epistemological and an ethical sense, of the uniqueness and singularity of natural and cultural beings and phenomena as they have evolved in specific space-time-contexts, while the inextricable interconnectedness of these beings and phenomena within complex networks of material and mental-cultural relations is equally acknowledged. Indeed, in this view, the uniqueness, individuality, and singularity of life forms emerges from and consists in

precisely the ways in which they are interconnected with the natural and cultural forces that make up the process of being-as-continuous-becoming in which all life participates.

At the same time, if the argument of an inseparable co-agency of matter and mind is pushed too far, a radicalized material ecocriticism risks to disempower human culture and creativity to a point where anonymous material processes of nature/culture entanglements are replacing personally and socially responsible forms of human agency as shaping forces of political, economic, social, scientific, or artistic developments. The legitimate critique of a deeprooted tradition of anthropocentric humanism has, in some radicalized forms of posthuman ecocentrism, led to a projection of values, meaning, and agency onto the nonhuman world, which in effect is being assigned the place of the discredited world of human civilization as ethical-epistemological authority of the ecocritical discourse.

This basic premise of a vital interrelatedness yet evolutionary difference between culture and nature has significant consequences for ecocriticism. While it helps to overcome the deeply entrenched culture-nature dualism and its anthropocentric ideology of supremacy and exploitative dominance over nonhuman nature, it also resists opposite attempts to simply dissolve culture into nature and to replace an anthropocentric ideology by a physiocentric or ecocentric naturalism. Axel Goodbody argues along these lines when he describes nature, following the German eco-philosopher Hartmut Böhme, as a "cultural project," in which "the dualism of humanity and the non-human cannot simply be collapsed into a formless unity... The way forward lies in positions located between a physiocentrism which recognizes the primacy of our interest in the survival and well-being of humanity as a species and an anthropocentrism which recognises our intuitive feelings that nature is more than just a resource" (Goodbody 277). What is needed is neither a naturalist reduction of culture nor a culturalist reduction of nature. The paradoxical, double perspective that cultural ecology adopts in this contested discursive field between anthropocentrism and ecocentrism has perhaps best been summed up in the Italian ecocritic Serenella Iovino's notion of a "non-anthropocentric humanism" (Iovino 2010).

#### Literature as Cultural Ecology

To Bateson or Finke, cultural ecology is a universal form of knowledge whose insights apply everywhere in the same way, regardless of discipline, discursive context, linguistic mediation, genre, and mode of writing. Within an ecological epistemology, this quest for a "unity of knowledge" (Wilson 1998) across disciplinary boundaries is quite cogent, since it corresponds to the ecological premise of the living interconnectedness of all life and reality. Yet a complementary, equally important criterion of an ecological epistemology is the recognition of the difference and diversity of the various forms of knowledge that have evolved in cultural history, as Stephen J. Gould among others has argued in his debate with Edward O. Wilson about the latter's concept of "consilience," which postulates the same laws and criteria of validity for all branches of knowledge (Gould).1 Literary culture provides one such form of cultural knowledge, which in the course of cultural evolution has developed unmistakable functional and discursive features that lend imaginative texts a special potential of representing, exploring, and communicating fundamental dimensions of human life within the overarching culture-nature-relationship.

In this more specific sense, literature can itself be described as the symbolic medium of a particularly powerful form of cultural ecology (Zapf 2002). This theory integrates insights of general cultural ecology with insights of literary theory and, indeed, of the literary texts themselves, which in this view must be taken seriously as sources of cultural knowledge in their own right. As has been mentioned above (see Chapter 3), a central assumption of a cultural ecology of literature is that in its aesthetic transformation of experience, literature

<sup>&</sup>lt;sup>1</sup> In his critique of Wilson's unifying reductionism, Gould points out the qualitative difference and domain-specific diversity of knowledge, arguing that "[b]iology is almost unimaginably more complex than physics, and the arts equivalently more complex than biology" (2003: 194).

acts like an ecological force within the larger system of cultural discourses. Literary texts have staged and explored the complex interactions between culture and nature in ever new scenarios and have derived their specific power of innovation and cultural self-renewal from the creative exploration of this boundary. From its archaic beginnings in mythical story-telling and oral narratives, in legends and fairy-tales, in the genres of pastoral and nature poetry but also in modes of the comic, gothic, and grotesque, literature has symbolically expressed the fundamental interconnectedness between culture and nature in tales of human genesis, of metamorphosis, of symbiotic coevolution between different life forms. Important texts in this tradition include the stories of mutual transformations between human and nonhuman life, most famously collected in Ovid's Metamorphoses, which became a highly influential text throughout literary history and across different cultures. This attention to the life-sustaining significance of the mind/body and culture/ nature interaction became especially prominent in the era of romanticism but continues to be characteristic of literary stagings of human experience up to the present. As an ecological force within culture, literature has presented human experience as part of a shared world of bodily natures and embodied minds, exemplified in the motif of what Louise Westling calls the "humananimal dance," a fascinating closeness between human and nonhuman life that has pervaded literary narratives from archaic to modern times, from the Gilgamesh epic to Virginia Woolf (Westling 2006).

However, in the more recent evolution of modern civilization, the status and functions of literature changed as well not only because of the accelerating differentiation of modern society since the eighteenth century as described by Niklas Luhmann and others but also due to growing asymmetries of power and imbalances in the culture-nature relationship (Luhmann 1982). As an increasingly autonomized cultural subsystem in its own right, literature, especially since the romantic period, has provided a discursive space for articulating those dimensions of human life which were marginalized, neglected, or repressed in dominant discourses and forms of civilizational self-representation (e.g., emotions, eros, the body, cultural others, nonhuman nature). Literature became a cultural medium which developed a special sensibility for cultural pathologies, for the ecopsychological and ecocultural impoverishment caused by conformist, standardized structures

of a one-sided economic and technocentric modernization. In reintegrating culturally separated spheres, literature restores diversity-within-connectivity as a creative potential of cultural ecosystems. However, in this very act of continually renewing cultural creativity, literature always remains aware of the former stages of its own evolution and of the deep history of culture-nature-coevolution, the "biosemiotic" memory, as Wendy Wheeler calls it (Wheeler 2011), which has been part of literature's generative potential from its very beginnings. Through imaginative transitions and metamorphoses between nonhuman and human life, natural and cultural ecologies, this evolutionary memory remains present in the symbolic forms and codes of literary creativity.

The aesthetic mode of textuality involves an overcoming of the mindbody-dualism by bringing together conceptual and perceptual dimensions, ideas and sensory experiences, reflective consciousness and the performative staging of complex dynamical life processes. From the beginnings of modern aesthetic theory in Baumgarten's Aesthetica, Kant's Critique of Judgement, Hegel's Aesthetics and Adorno's Aesthetic Theory up to Gernot Böhme's contemporary ecophilosophical "aesthetics of nature," theory has struggled with the double status of the aesthetic as both an experience and a form of knowledge, a paradoxical, non-systemic form of sinnliche Erkenntnis, of "sensuous knowledge," in which the tension and ambiguous co-agency between mind and body, thought and life was part of the ways in which the productivity of aesthetic and imaginative processes was conceived. Literature as a medium of cultural ecology thus specifically focuses on this interactivity of mind and life which is staged in literary texts as a liminal phenomenon on the boundary between culture and nature, self and other, anthropocentric and biocentric dimensions of existence. Literature in this sense is, on the one hand, a sensorium for what goes wrong in a society, for the biophobic, life-paralyzing implications of one-sided forms of consciousness and civilizational uniformity, and it is, on the other hand, a medium of constant cultural self-renewal, in which neglected biophilic energies can find a symbolic space of expression and of (re-)integration into the larger ecology of cultural discourses.

For this evolutionary function of literature, the formal and artistic qualities of texts are not merely illustrations of already existing environmental knowledge but are themselves actively participating in the production of ever

new ecologies of knowledge and communication. Literary form is therefore an indispensable part of the ways in which a cultural ecology of literature looks at texts. This relates not only to the aspect of metaphor as a central mode of textual "ecopoiesis" (Thompson 118-122) as pointed out, among others, by Bateson and Wheeler; it also refers to differentiations of narrative structure, complexities of character relations, the interaction between external environments and interior worlds, chronotopes of time and space, compositional arrangements of motifs, symbolism, language, and rhythm, as well as to the intertextual dynamics from which any new individual text is composed. A cultural ecology of literature looks also, and particularly so, at the indeterminacies, the gaps and polysemic processes of signification, which are characteristic of aesthetic texts and which resist straightforward ideological messages, but help to create the imaginative space for otherness both in terms of the representation of the unrepresented and in terms of the reader's participation in the textual process. Literature is an ecological cultural force not only in a thematic sense as in explicitly environmental forms of writing but in a more fundamental sense in the forms and functions of aesthetic communication as they have evolved in literary and cultural history and are inscribed into the generative matrix of texts. Characteristic features of aesthetic texts such as recursive complexity, dynamic feedback relations, diversity-within-interconnectedness, or individuality-in-context are also the hallmarks of a contemporary ecological epistemology, which goes beyond inherited binaries and establishes the ineluctable interdependency of mind and body, culture and nature, human and nonhuman world as a fundamental given of all human (self-)knowledge.

In the light of such affinities between the discourses of literature and ecology, literary works of art are two things at the same time: they are laboratories of human self-exploration in which basic assumptions of prevailing systems of cultural self-interpretation are, as it were, critically "put to the test" in the medium of simulated life processes; and they are imaginative biotopes in which the dimensions and energies of life neglected by these systems find the symbolic space to develop and express themselves. As a form of cultural textuality that stages the tension between regimes of discursive civilizational power and prediscursive life processes, literature is therefore both discourse and a "non-place" (Foucault) of discourse. It constitutes itself in a "counter-

space" or an "in-between-space" of discourses as a paradoxical form of writing which constantly transgresses and shifts the boundaries of what can be known, said, and thought within a culture by opening them toward their excluded other, toward what remains unsayable and unknowable within its rules of discourse.

### Triadic Functional Model of Literature as Cultural Ecology

As has been seen in the various texts and contexts discussed so far, the function of literature as an ecological force within culture is both deconstructive and reconstructive. Literature is a transformative force within cultural discourses that breaks open ossified forms of language, communication, and thought, symbolically empowers the marginalized, and reconnects what is culturally separated. In a more generalized version, the functional model of literature as cultural ecology which emerges from the dialogue between text and theory, ecological thought and literary interpretation informing this book, can be described as a dynamic interrelation of three major discursive functions (Zapf 2002, 2008): the functions of a *culture-critical metadiscourse*, an *imaginative counter-discourse*, and a *reintegrative interdiscourse*.

Triadic models of describing cultural-historical and aesthetic processes have been employed in different ways since Hegel's *Phenomenology of Mind*, which posits an open-ended dialectic process of thesis, antithesis, and new synthesis as the dynamic principle of both thought and reality (Hegel 1807). What this implies, and what still appears relevant to an ecology of mind and culture, is that thought and reality do not consist of isolated ideas or individual entities but are part of a *holistic, relational, dynamic, interactive, and transformative process* in which the Real is dissolved from a fixed and static essence of Being into a fluid, continuously changing process of Becoming. The mind is no longer regarded in abstract separation from reality and history but conceived as an active part and force of historical-cultural evolution. Nature, however, as well as sensory experience, is still subordinated in this process to the mind. Nature is the phenomenological externalization of the Absolute Spirit, which created the material world in order to reach an ever-higher stage

of self-realization in its striving to overcome that material world (Hegel 1807). Consequently, art and aesthetic experience, which are closely tied in their signifying practices to material nature and sensory experience, remain inferior to systemic logocentric thought, since they merely deal with the "sensuous appearance of the idea" (Hegel 1835), whereas the idea as such is only fully accessible to conceptual philosophical knowledge.

The way from a phenomenology to an ecology of mind, however, was already opened up in Hegel's own time in the nature philosophy of F. W. Schelling and his revisionary reinterpretation of idealist philosophy. To Schelling, matter and mind, nature and culture are fundamentally interrelated not in terms of a hierarchical opposition but of different forms of "potencies," in which ever new fusions between traditional opposites such as subject and object, the real and the imaginary, are achieved. The ecological strand of the German philosophy of nature culminated in Schelling, to whom "nature was visible mind, mind invisible nature" (Rigby 2014: 67). It is no longer conceptual knowledge but the artistic imagination which becomes the supreme faculty and mode of cultural productivity that continuously contributes to that transformative fusion of self and other, mind and nature, spirit and matter, which is necessary for the full realization of the creative potential of human culture (Schelling 1807). This view of the artistic imagination as a central power of mediation between the real and the ideal, difference and identity, diversity and unity, has of course had an enormous influence on aesthetic concepts of British and American romanticism as well, above all on Coleridge's concept of the "secondary imagination," which is an aesthetic activity evolving from the "primary imagination" of active human perception in a process that is both deconstructive and reconstructive: "It dissolves, diffuses, dissipates, in order to recreate; or where this process is rendered impossible, yet still at all events it struggles to idealize and unify" (Coleridge 471). This concept, in turn, has influenced critics and writers in the Anglo-American world throughout the nineteenth and into the twentieth century.

Hazard Adams comments on Schelling's theory of art as mediator between natural and cultural creativity as follows: "Schelling rejected Kant's idea that 'things in themselves' are unknowable. Instead he posited a subject and object that are joined in aesthetic activity. This joining is a creative act. Further, Schelling saw man's creativity as analogous to the unconscious creativity of nature" (Adams 444).

Another widely received triadic model of interpreting the process of knowledge and the logic of cultural production is Charles Sanders Peirce's semiotics. Peirce was himself indebted to Hegel's dialectic to a degree. Even though he criticized the lack of attention to immediate experience and individuality, he nevertheless considered Hegel's dialectic as "closely allied to pragmaticism" in three ways: in its attempt to construct a "nondualistic account of thought and action;" in its interpretation of reality in terms of "evolution;" and in its "triadic structure" (Shapiro 269). In place of Hegel's spirit, Peirce posits the sign as the central conceptual premise and driving force of history and culture, shifting the focus from a metaphysical to a semiotic notion of evolution but maintaining the triadic structure of thought and reality as a dynamic, interactive, and creative process, in which the sign itself is never static or fixed in its meanings but involved in always shifting relations and interpretations between the referent (the Real), the sign (the semiotic construct), and the interpretant (the intersubjective process of interpreting the relation between sign and referent). In this triadic structure, the sign in Peirce is distinct from the binary concept of the sign in structuralism and poststructuralism, offering a relational, communicational, and explorative rather than a merely formal-differential model of linguistic and cultural semiosis. As Wheeler and others have shown, the Peircean model can be productively extended toward a biosemiotics that encompasses the communication of "living signs" both in human and nonhuman forms of life (Wheeler 2011; Emmeche).

In this latter sense, Peirce's semiotic conception of the triadic model of cultural signification has some affinity to the triadic functional model of imaginative literature proposed here. At the same time, there are two major points of difference: On one hand, Peirce's model is highly abstract and general; it refers to signifying processes across different scales and media in basically the same way and doesn't focus enough on the *differentia specifica* of the various domains, modes, and genres of cultural communication—in our case on the generative principles and functional features of imaginative literature as a distinct discursive-semiotic practice within the larger system of cultural discourses. On the other hand, his model also strongly relies on individual agency and interpretive activity while neglecting the systemic aspects of such interpretations in terms of the larger sociohistorical collectives and discursive

formations in which they are embedded. Of course, all users and interpreters of signs, as all writers and readers of literature, are first and foremost individuals who inscribe themselves into existing sign systems in always singular and unique ways and from their own concrete personal perspective and horizon. Indeed, the advantage of Peirce's semiotics is that it does justice to the irreducible role of individual and intersubjective agency in the signifying processes of culture, which has been downplayed in poststructuralist and discourse-analytical models. And a biosemiotic extension of this approach can help move human beings into focus as both socially and biologically situated agents within life-sustaining networks of communication, which also enable and underlie more elaborate forms of cultural and aesthetic communication (Wheeler 2011).

Nevertheless, it seems helpful to supplement this approach by including two additional frames of reference for positioning the functional-evolutionary model of literature proposed here: social systems theory and literary anthropology, both of which I can only briefly sketch here insofar as they are relevant to a cultural ecology of literature. In a systems-theoretical view, the autonomization of the social subsystem of literature in its recent stage of cultural evolution has resulted from the functional differentiation of modern society since the late eighteenth century, in which other subsystems, such as the systems of economy, law, politics, science, religion, or bureaucracy, become increasingly independent from their former ties to an overarching social totality and from each other as well. All these subsystems function as closed, autopoetic systems of self-organized communication, which maintain their internal stability through constantly reproducing a sharp difference between inside and outside, between the system and its environment, and between the internal, psychic worlds of individual human beings and the systemic forms of social communication (Luhmann 1982). The special function of the subsystem of literature, and particularly of the novel that emerges as a new form of textual genre at about that time, is paradoxical: In its pluridimensional forms of reconnecting the culturally separated domains, literature specializes precisely in the attempt to overcome the modern specialization of cultural discourses and subsystems. In reconnecting psychic to social systems, which are alienated from each other in the functional cycles of a compartmentalized society, literature aims to redress the damaging effects of functional differentiation for the subject and for civic society (Reinfandt 381). What this also means is that literature not only functions as a medium of critical reflection and symbolic corrective of the civilizational process but as a metacognitive domain, which brings together, on always new levels, different forms of cultural knowledge that are being split up into ever more specialized fields and subdisciplines in the course of advancing modernization. For this function, Jürgen Link has coined the term "reintegrative interdiscourse," which I am adopting as one of the three subfunctions of literature that I am distinguishing (Link).

While this systems-theoretical view helps to account for the collective, systemic aspect of social communication that is underrepresented in Peirce's semiotics, it neglects what the latter foregrounds, notably its attention to individuality and intersubjectivity, to agency and interactivity, to improvisation and creativity as constitutive factors in the process of cultural and literary semiosis.<sup>2</sup> In Peirce, the emphasis on these qualities leads to a neglect of the forces of collective signification and heteronomous pressures of discourse, with which individual subjects are faced as both, participating insiders or alienated outsiders, of the system. In social systems theory, on the other hand, these collective processes of communication tend to be seen as closed circles of self-referential signification, which follow completely depersonalized rules of self-stabilizing reproduction but leave little space for personal and interpersonal agency and creativity, let alone for the shared forms of human/nonhuman communication and creativity that move into view from a biosemiotic recontextualization of Peirce's semiotics. If both the social-systemic and the (bio-)semiotic approach are taken into account, it appears that an additional perspective is gained, in which these two cognitive frames can be brought to complement each other's insights to produce a more complex picture of literary communication. Such a perspective would connect a historical-systemic with a semiotic-experiential view but would also highlight the inescapable tension, contradiction, and potential conflict that inevitably shapes this relation and the process of cultural signification in general—that is, the tension and conflict between individual and intersubjective constructions of meaningful, self-determined, vitally interrelated existence on the one hand

For this creative dimension of Peirce's semiotics, see Susanne Rohr, Über die Schönheit des Findens. Die Binnenstruktur menschlichen Verstehens nach Charles S. Peirce: Abduktionslogik und Kreativität. Stuttgart: Metzler, 1993.

and the depersonalized, conformist, and automatized forms of systemic communication on the other, which at once enable and preclude the possibility of self-determined cultural and personal semiosis.

It seems to be the historically evolved task of literary communication to open up, in ever new ways, this space of a creative, fully realized (eco-) semiosis of human existence and communication within and against the prevailing systems of cultural discourses. This implies a counterdiscursive element of deconstruction, conflict, and resistance to the validity claims of existing social, linguistic, and discursive power systems as part of a deeply inscribed cultural ecology of texts. Russian formalists already pointed out this aspect in their conception of literary aesthetics as ostranenie, as deviation from normative speech and defamiliarization of familiar habits of perception and communication (Sklovskij). They regarded the cultural work of literary texts as a radical slowing-down of perception and a de-automatization of standardized communication and argued that only the alienating, deconstructive procedures of the aesthetic could bring to light the alienating structures of a heteronomous life. Literature was able to liberate language and signification by counteracting, subverting, and restructuring the semiotic codes of culture along the lines of their own imaginative force-fields.

Whereas formalists pointed at this aspect as a phenomenon within the discourse of literary art itself, theorists of the Frankfurt school emphasized in more fundamental ways the conflictive, oppositional implications of literary aesthetics to the totalizing claims of instrumental reason. In this, they still loosely followed the Hegelian model of dialectic and its various transformations in Marxism. They applied it to the relationship between art and society in ways which significantly deviated from classical Marxism, however; they replaced deterministic conceptions of the base-superstructure relationship by granting various degrees of relative autonomy to the work of art while still remaining acutely aware of the inescapable realities of a heteronomous life in capitalist consumer society. The spectrum ranges from Walter Benjamin's distrust of hegemonic generalizing concepts, which were delegitimized by art through its emphasis on concreteness, singularity, and fragmentary detail, nevertheless refracting a lost unity of life in the debris of history (Benjamin 1969); to Herbert Marcuse's psychomachia between eros and thanatos that was enacted in art as a form of regenerative therapy for civilizational anxieties (Marcuse 1987); to

Ernst Bloch's utopian impulse of hope that could transcend and potentially change the conditions of alienated existence (Bloch 1995); and to Theodor Adorno's negative aesthetics, in which art was merely a broken mirror of such utopian alternatives (Adorno). For all their differences, these versions of critical theory shared the belief in the critical-transformative potential of art as an alternative to the catastrophes of modern history, which was authenticated by its very exposure of the inauthenticity of the capitalist commodification of life. They regarded art, especially but not exclusively experimental avant-garde art, as a transgressive form of resistance within the challenges brought about by the dialectic of enlightenment and the ambiguities of civilizational progress.

However implicated this oppositional or deconstructive impulse itself may be in the prevailing discourses and power structures, as postmodernists and new historicists have been insisting, it still constitutes an irreducible element of any literary and aesthetic theory that tries to do justice to the full range and potential of literary communication within culture. A position which has theorized this in ways that cross the boundaries between the different camps is Bakhtin's dialogic and polyphonic concept of art, and especially of the novel, which grew out of formalist as well as of Marxist traditions but also became an influential direction of postmodern literary theory. In its emphasis on embodied experiences within the genres of the grotesque and the carnivalesque, Bakhtin's theory affirms semiotic multiplicity and polymorphic liminality as a counterdiscursive potential of texts and a hallmark of literary communication, in which the culturally marginalized is foregrounded as a liberating force of subversion and resistance to monologic structures of thought and discourse (Bakhtin; Civelekoglu, Redling, Müller 2010, 2016).

Another triadic model that appears helpful in theoretically situating the functional model proposed below is that of Wolfgang Iser's literary anthropology. Iser starts from the observation that the long-inherited dichotomy between fiction and reality is not tenable because of the mutually defining interdependency between these poles. While fiction always emerges as a response to and is thereby intrinsically shaped by problems of cultural reality, cultural reality itself does not only consist of an external, objective dimension but also of an internal, imaginary one, without which neither the cultural world nor the psychological world of individual subjects can be adequately conceived. The "imaginary" is a shared anthropological feature

of all human beings, a transgressive impulse of desires, fears, daydreams, and wish-fulfilling fantasies, which shapes both the individual psyche and the collective imagination of societies. In its continual tension with existing external or internal realities, it underlies and pervades all human signification but remains subliminal in the regulated forms of conscious public discourse. This dimension of the imaginary, however, is brought into full play in fictional texts, where it is symbolically articulated in its ever-changing relationship to sociohistorical realities. Consequently, Iser replaces the dyadic relation of fiction and reality by a triadic relation between the three modes of the "real," the "fictive," and the "imaginary," which are interacting in literary texts. Through its embodiment in fictional narratives, the imaginary takes on the concrete shape of possible experiential worlds, which stage the conflict between anthropological needs and systemic realities, generating alternative scenarios that respond to and simultaneously counteract the deficits and blind spots of these systemic realities (Iser). In terms of a cultural ecology of literature, Iser's model is another useful frame of reference, which can help to describe the transformative cultural function of texts within the larger system of cultural discourses. As in the extension of Peirce's semiotics into a biosemiotic model of communication, Iser's triadic functional model of literary communication can be productively adapted to a cultural-ecological model of texts, if the anthropological imaginary, that is, an individual- and subject-centered concept of the imaginary that Iser posits as a driving force of literary communication, is extended toward an ecological imaginary—which, as this book argues, has shaped literary texts since the beginning of literary history.

In the light of such observations, the functional potential of literature as cultural ecology can be described as a combination of three different but interrelated discursive functions or procedures—a culture-critical metadiscourse, an imaginative counter-discourse, and a reintegrative interdiscourse. Obviously, these procedures do not always occur in the sequence or schematized form as they are presented below for reasons of clarity. In fact, they are frequently interwoven; they overlap, compete with, condition, and modify each other. But they seem to be three major ways in which the function of literature as an ecological force within its larger cultural system can be described.

I would like to illustrate this functional model in the following in a number of novels which can be counted among the major texts of American literature, in order to (1) underline the argument that the cultural-ecological function of texts is intrinsically tied to their artistic power, and (2) to substantiate the theoretical conceptualization of cultural ecology by providing concrete evidence from texts themselves. The examples I am referring to are Nathaniel Hawthorne's *Scarlet Letter*, Herman Melville's *Moby-Dick*, Kate Chopin's *The Awakening*, William Faulkner's *The Sound and the Fury*, and Toni Morrison's *Beloved*. It goes without saying that I cannot do justice to the intrinsic complexity of the novels but can only highlight a few selective features, which however can help to demonstrate that the cultural-ecological dimension I am describing here is vitally relevant to their overall narrative dynamics and aesthetic function. The fact that in spite of their historical, stylistic, and cultural diversity, these core novels of American literature share in common basic features of the triadic model proposed here, serves to corroborate the plausibility of the theoretical approach of a cultural ecology of literature.

#### Literature as culture-critical metadiscourse

To call the first of these three functions a culture-critical metadiscourse first of all implies that literary texts are not only externally but intrinsically related to the sociohistorical conditions from which they emerge and to which they respond. The discursive contexts of their real historical genesis are the starting point and semiotic material of the fictional models of representation and cultural self-reflection that literature develops. While converging in this point with new-historical and discourse-analytical assumptions about the inextricable interdependency of the literary discourse with other discourses of its time and culture, a cultural-ecological account of the functional potential of literature simultaneously insists on the generic difference of aesthetic texts, which manifests itself, on one important level, in its culture-critical and metadiscursive dimension. This critical dimension is not for the most part a direct and oppositional form of criticism but an indirect form of critical discursive energy which motivates a radical self-examination of prevailing cultural systems from an overarching ecological perspective of individual and collective survival and sustainability.

In this function of a culture-critical metadiscourse, literature responds to hegemonic discursive regimes by exposing petrifications, coercive pressures, and traumatizing effects of dominant civilizational reality-systems that are maintained and reinforced by those discursive regimes. In the novels presently to be discussed, these discursive practices are characteristically presented as pathogenic structures of severe external or internal constraint suppressing individuality, difference, and multiplicity in the name of totalizing cultural ideologies, which lead to chronic states of alienation, failed communication, and paralyzed vitality. They are associated with overpowering demands and conformist pressures on the individual and are frequently expressed in the imagery of death-in-life, wasteland, stasis, uniformity, vicious circles, and psychic or physical imprisonment. The deep-rooted biophobic self-alienation which these images suggest typically results from exclusionary discursive constructions of human reality in which the normative becomes the "normal" and in which prevailing conceptions of cultural identity are based on hierarchical binaries such as mind vs. body, intellect vs. emotion, inside vs. outside, self vs. other, human culture vs. nonhuman nature.

These features are manifested in manifold but recurrent ways as part of a shared generative code in the core texts of American literature mentioned above. In Hawthorne's *The Scarlet Letter*, the puritan system of early America is presented, from the opening scene of the novel, in the image of a prisonhouse of culture, which forms the metadiscursive framework from which the narrative emerges and to which its complex semiotic processes remain recursively related. The protagonist Hester Prynne steps out from the door of the Boston jail, that "black flower of civilized society" (Hawthorne 76), in which she had been incarcerated for three months with her illegitimate daughter because of her transgression of the "Puritanic code of law" (80). The prison, as the narrator explains, is a place where not only common criminals but "fallen" women, disobedient children, indigenous people, or social and religious dissenters, are locked away from society, thus institutionalizing the binaries of inclusion and exclusion that underlie the puritan system in terms of gender, culture, generation, religion, and politics (76-77). Standing on the scaffold with her infant child on her arm, and the letter A, for "Adulteress," on the breast of her gown, Hester is exposed to a hostile crowd of citizens in the spectacle of a public trial that excommunicates her from society in an official act of visible stigmatization. In the central role of the letter A, this initial scene metonymically highlights the exclusionary semiotics of a repressive society, whose conformist pressures not only contradict the official self-image of an ideal human community in a "New World" but paralyze biophilic energies and cut off vital communicational ties, causing severe traumatic symptoms of crisis in all main characters. By framing this core narrative of the scarlet letter within the autobiographical sketch of his Custom House experiences, Hawthorne reflexively links this diagnosis of deep-rooted civilizational self-alienation from American society of his own day, which is satirically portrayed in the microcosm of the Boston Custom House as a similarly calcified and artistically paralyzing cultural environment.

In Melville's American epic *Moby-Dick*, the narrator Ishmael escapes into his adventures at sea from a bureaucratic life on land peopled by numberless cosufferers of Bartleby the scrivener, who are "tied to counters, nailed to benches, clinched to desks," (Melville *Moby-Dick* 23) populating the "great American desert" (24) of the mind, which puts the narrator into a suicidal mood and from which he tries to rescue himself by going to sea ("my substitute for pistol and ball" 23). However, the dream of biophilic self-enhancement through contact with the "ungraspable phantom of life" embodied in water (24) turns into an even more disastrous nightmare of civilizational hubris in Captain Ahab's crusade of annihilating Moby-Dick, in which a megalomaniac will-to-power over nature is doomed to lead into the suicide of an anthropocentric civilization. The whale ship, as a symbol of the global economic expansion and technological mastery of man over nonhuman nature, becomes itself a prison which, at the end, is pulled into the abyss with its crew.

In Kate Chopin's *The Awakening*, different intersecting aspects of US society at the turn of the nineteenth to the twentieth century become the object of a culture-critical metadiscourse and the source of existential alienation, as well as of subsequent rebellion, for the protagonist Edna Pontellier. The long-term consequences of her strict Calvinist upbringing represented by her father; the impersonal rules of the new stockmarket economy dominating the private life of her husband Léonce Pontellier; the narrowly self-contained conventions of the Creole community in which Edna remains an outsider; and the restrictive gender roles of the Victorian Age—all of these influences converge into an overriding sense of self-imprisonment as a starting-point of the narrative. This

is introduced in the double motif of a parrot and a mocking-bird in a cage, with which the novel opens. While the parrot endlessly repeats the same phrases picked up from human conversation, the mocking-bird merges his musical voice with the elements of nature outside, "whistling his fluty notes out upon the breeze with maddening persistence" (Chopin 20). A sense of alienation and tiring repetitiveness in the motif of the parrot, and a complementary sense of transgressive self-expression in the motif of the mocking-bird, are connoted in this initial scene, anticipating the conflict between rigidified conventions and limitless desire in which the heroine finds herself and which progressively escalates in the course of the novel. The social code of commodified relationships in which Edna feels trapped and from which she successively breaks out in the various stages of her "awakening" is exposed as a conditioning frame of her existence in the novel's initial scene already in her husband Léonce's reaction, who reprimands Edna for her irrational behavior as she returns with a sunburned face from a noonday visit to the beach, "looking at his wife as one looks at a valuable piece of personal property that has suffered some damage" (20-21).

In William Faulkner's The Sound and the Fury, the novel begins with a scene of imprisoned life in the context of early twentieth century Southern society, presented from the perspective of a character entirely cut off from vital interrelations with his environment: "Through the fence, between the curling flower spaces, he could see them hitting" (Faulkner 1971: 11). This is the perspective of Benjy, the mentally retarded youngest member of the Compson family, a formerly well-established family of the white Southern aristocracy, which has long been in steady decline. Again the imagery of a prison is the metaphorical starting point of a culture-critical metadiscourse. Benjy, meanwhile thirty-three years old, is looking out through the bars of the fence that cages him in from the activities of a social world he doesn't understand. For the reader as well, these activities only gradually gain contours because of the highly incoherent and indeterminate texture of the narrative, which follows Benjy's chaotic perceptions and stream-of-consciousness, presenting the normal world as a radically alien place. As it turns out, a game of golf is being played on the former Compson property, the "pastures," where Benjy and the other Compson children used to play. Once a place of free unsupervised play in wild nature with trees and a creek, it is now sold to investors and transformed into a golf course, that is, into a domesticated and commercialized postnatural space set up for a professionally regulated, exclusive, and class-identified form of social entertainment. Benjy, who is unable to speak, is clinging to the fence and starts to bellow in his unarticulated wailing voice when he hears someone call the "caddy," which reminds him of his beloved sister Caddy, for whom he has been waiting at the fence to come home from school. In fact, however, Caddy is long grown up and has moved away from the town, having been banished as a black sheep from the family because of her erotically motivated revolt against the conventions of Southern society which, in a different way, are also imprisoning Benjy and excluding him from social recognition and participation. These conventions are strictly enforced by Jason, the middle brother, who tries to upkeep the façade of Southern white aristocracy, and by the widowed mother Mrs. Compson. Mrs. Compson is unable to accept the "family curse" of Benjy's mental illness and, on Jason's insistence, has agreed to the castration of Benjy and to officially disowning Caddy, forbidding her any further contact with the family in a cold-hearted act of expulsion which enforces the exclusionary rules of cultural normativity on her own daughter. Benjy's older brother Quentin, too, suffers from the self-destructive implications of this biophobic moral code, which he has internalized to the degree that he strongly endorses the moral condemnation of Caddy's behavior, but also punishes himself for his own love and secret erotic attraction to her. Like Benjy and the other characters, Quentin is imprisoned in the long shadow of an inescapable past, which he still cannot cast off as a student at Harvard. On the last day of his life, which is covered in the second chapter of the book, he wanders around dressed like a Southern squire, desperately trying to fight off time and his shadow, and commits suicide by drowning himself in the Charles River—in the symbolic medium of water which had also been the medium of his symbiotic intimacy with his sister in their childhood days. Even Jason, as the most aggressive—and most hypocritical—representative of that Southern code, whose perspective dominates the novel's third part, suffers from severe symptoms of alienation and self-repression, manifested in chronic fits of unbearable headache. White Southern society is presented, throughout the novel, as a coercive system of cultural (self-) disciplining, which appears as a source of collective selfalienation and psychosomatic paralysis.

In Toni Morrison's *Beloved*, the system of nineteenth century slavery appears as a prisonhouse and source of collective traumatization of African Americans, a system most insidiously personified by the figure of Schoolteacher. Acting on the authority of education, science, and religion, Schoolteacher represents not just an aberration from but a perverted manifestation of modern "civilization" itself. The death-in-life situation which this entails for the characters is depicted in many interrelated scenes—in the long years of traumatic paralysis of the female protagonist, the former slave Sethe, who lives on the margins of Cincinnati in a house on Bluestone Road, isolated from the black community and haunted by her repressed memories, after her desperate act of killing her own child to prevent her from being taken back into slavery; in the memories of Paul D, another former slave and newly found friend of Sethe, of a prison work camp where he was kept like an animal in a cage, and where his feelings were locked up in his heart as if in a tin box: "Eighty-six days and done. Life was dead" (Morrison 134); or in the two-year period of deafness of Sethe's surviving other daughter Denver and her nightmares about her mother cutting off her head and subsequently braiding her hair, by which Denver is afflicted after she hears about the horrors of her mother's past and of her crime against her sister. The characters are caught in vicious circles of mutual alienation and self-alienation, which is the symptom of the all-pervasive terror of a biophobic civilizational system that is the starting-point of the novel's radical cultural critique.

### Literature as imaginative counter-discourse

As a response to the sense of repression, imprisonment, and the paralysis of vital relationships conveyed on the level of the culture-critical metadiscourse, however, the texts simultaneously build up a counter-discursive dynamic, which foregrounds and semiotically empowers the culturally excluded and marginalized as a source of imaginative energy. In its alternative worlds, literature articulates what remains unavailable in the prevailing categories of cultural self-interpretation but nevertheless appears indispensable for an adequately complex account of the lives of humans and their place in the more-than-human-world. That way, the culturally excluded is articulated as a source of literary creativity and is associated with an ecosemiotic agency that builds up

a kind of "magical" counterforce to the cultural reality system. Staging radical difference, alterity, and resistance, this imaginative counter-discourse in texts is simultaneously linked with images of nature, the body, the unconscious, dreams, flux, change, contact, openness, vision, magic, multiformity, and biophilic intensity.

Again, this function can be observed in the core texts discussed in this chapter. In *The Scarlet Letter*, the imaginative counter-discourse quite explicitly develops from the exclusions of the signifying practices of the civilizational system. The letter A, which initially designates only one authoritative meaning, "Adulteress," is transformed in the narrative from a cultural signifier of exclusion into an imaginative counterforce to the systemic dogmatism from which it originated. This process of creative transformation is already prefigured in the artistic embellishment of Hester's self-made letter A:

On the breast of her gown, in fine red cloth, surrounded with an elaborate embroidery and fantastic flourishes of gold thread, appeared the letter A. It was so artistically done, and with so much fertility and gorgeous luxuriance of fancy, that it had all the effect of a last and fitting decoration to the apparel which she wore ... (80)

Hester is the first artist in this narrative archaeology of cultural history, whose original artwork—the letter A that she has sewed in the form of a highly elaborate artifact—sets off the imaginative process of critical reflection and storytelling of the novel. In this process, the letter A loses its initial univocal determinacy and becomes the medium of always new, changing meanings (e.g., able, angel, apocalypse, America, or art), which, in the openness of their constant semiosis, transgress the discursive control of the cultural regime, and are in turn associated with elemental energies of vitality, eros, and creativity. Among other motifs from the nonhuman world such as trees, color, or water, this counterdiscursive force is metonymically associated with the wild rose bush that grows at the door of the cultural prisonhouse, from which the novel's narrative symbolically emerges. The wild rosebush, like the "black flower of civilized life" with which it is juxtaposed, is an important leitmotif throughout the text that is also connected to the figure of Hester's daughter Pearl as a hybrid being between social exclusion and wild nature. This link between Hester's deviation from social normativity and the wild rose bush in the figure

of Pearl is pinpointed in Pearl's reply to the authorities, when they question her about her Creator to test her religiously correct education: ".... the child finally announced that she had not been made at all, but had been plucked by her mother off the bush of wild roses, that grew by the prison-door" (134).

In Moby-Dick, the narrative voice of Ishmael builds up an alternative, entirely different view to Ahab's biophobic demonization of the white whale, arising from the recognition of the human species' "Siamese connexion with a plurality of other mortals" (Melville 254). Through Ishmael's perspective, the white whale itself becomes the central agency of an imaginative counterdiscourse that undermines and overwrites Ahab's civilizational will-to-power over the creation. Moby-Dick's irreducible co-agency with the human actors in the narrative, which is conveyed in Ishmael's account of the events, undermines Ahab's civilizational hubris and turns the whale into a signifier of trans-species connectivity. The whale, as the radical other of Ahab's anthropocentric ideology, is presented, in a series of both realist and mythopoetic scenes and images, as an alter ego of the human actors, which, however, remains inaccessible to any final interpretation and instead becomes the source of a potentially infinite semiosis that resists and transcends all forms of discursive appropriation. This imaginative counter-discourse already emerges early in the novel when the narrator projects his half real, half dream-like sea journey as a journey toward his deeper self. This deeper self, however, is not a separate entity but co-exists with the whale in the shared medium of that "ungraspable phantom of life" (24) which connects all beings in a continuous process of metamorphic becoming that is translated into the imaginative process of the text:

The great flood-gates of the wonder-world swung open, and in the wild conceits that swayed me to my purpose, two and two there floated into my innermost soul, endless processions of the whale, and, mid most of them all, one grand hooded phantom, like a snow hill in the air. (26–27)

The innermost center of the narrative self is expressed in the imagery of whales. The "essence" of the self is defined by its relation to a nonhuman other, whose irresistible presence overflows the boundaries between outside and inside the self. The influx of elemental forces into the civilized consciousness shapes the direction of the self's becoming. The figuration of the interior world of the narrator's mind fuses human and nonhuman domains, chaos and order, solid

and fluid, wildness and the sacred in such a way that the white whale emerges as its unavailable ground and highest manifestation. The self's encounter with the whale implies the dissolution of the anthropocentric narrator-subject toward an "intra-action" (Barad) between inseparable internal and external, material and mental, cultural and natural forces in the medium of a fluid imagination, in which the whale signifies an ecosemiotic reality which is co-emergent with the deeper reality of the human self, and which always also conceals itself in the forms of its manifold revelations ("one grand hooded phantom, like a snow hill in the air"). The mythopoetic language of the imagination is employed here in such a way that it envisions the process of the novel as an aesthetic transformation of the same forces that underlie the shapes and metamorphoses of life itself.

In Chopin's The Awakening, Edna Pontellier's resistance to imprisoning conventions and role patterns takes a twofold form: a conscious, intellectual form in her withdrawal from the imposed rules of social institutions, as evidenced in her growing defiance against marriage, monogamy, and the economic rationalism of her husband's stockmarket mentality; and an unconscious, intuitive form in her opening toward the influence of the sea, which leads her to the discovery of her deeper self in her contact with the elemental medium of water. As a compositional leitmotif of the text, the "voice of the sea" becomes the source of an ever-intensifying rhythm of emotional, bodily, and erotic awakenings that creates a wave-like, "oceanic" (Den Tandt) form of discourse and undulating flow of the narrative. In an ekphrastic way, this fusion of elemental rhythms of the sea and the transfiguring effect of art is illustrated in a performance of Chopin's music (doubtlessly an ironic selfreference to the novel's author) given by Mademoiselle Reisz, to which Edna reacts in a deeply passionate way that is conveyed in images of intense bodily experience and immersion in the waves:

The very first chords which Mademoiselle Reisz struck upon the piano sent a keen tremor down Mrs. Pontellier's spinal column...[T]he very passions themselves were aroused within her soul, swaying it, lashing it, as the waves daily beat upon her splendid body. She trembled, she was choking, and the tears blinded her. (44–45)

Again, an analogy is established here between the experience of art as transformative medium of cultural self-expression and self-exploration,

and the experience of passion and "wild" nature, which is metonymically associated with the sea. In the artificial order of musical signs and sounds, an original chaos becomes audible, in which the control of self and world threatens to be lost but from which both art and life can alone gain the energy for creating ever new patterns of emergent order ensuring their continued vitality. This ekphrastic scene can be related to the narrative process of the novel as a whole, which aims at the "dionysian" reconnection of life and art, culture, and nature in the paradoxical tension between linguistic articulation and prelinguistic experience, which Edna encounters in the medial translation of Chopin's music.

In Faulkner's *The Sound and the Fury*, the perspective of the "idiot" Benjy (in the terms of the intertextual Shakespeare source)<sup>3</sup> has itself a strong counterdiscursive implication, which sets the tone for the whole novel. As the reader is immersed in the incoherent but emotionally turbulent inner world of this voiceless outsider, other characters' opinions of Benjy, which are merely based on outward perceptions, appear all the more shallow and reductive, such as his mother's frequent bouts of self-pity when she calls him a curse laid upon her or the cynical invectives of the middle brother Jason when he vilifies Ben and his black guard Luster as inferior, subhuman caricatures: "Well at least I could come home one time without finding Ben and that nigger hanging on the gate like a bear and a monkey in the same cage" (291-292). Above all, the figure of Caddy becomes the focal point of an imaginative counterdiscourse in which Caddy, as the expelled member of the Compson family, comes to represent those humane biophilic values which are lacking in the Compson household—love, eros, emotion, empathy. For all of her three brothers, Caddy is an absent presence and a center of their emotional life. For Benjy in particular, who has developed his eerily acute sensory perception into an almost telepathic form of emotional sensibility, Caddy is the only person who has ever loved him unconditionally, and the moments he most intensely remembers is when Caddy took him in her arms and her body "smelled like trees" (45). In other instances, Caddy is associated with wind, earth, light, and

<sup>&</sup>lt;sup>3</sup> The passage from Macbeth, from which the novel's title is taken, also structures the overall composition of the narrative—in the "tale told by an idiot" in the Benjy section, in the motif of "life" as a "walking shadow" in the Quentin section, in the "poor player that struts and frets his hour upon the stage," in the Jason section, and in the "sound and fury" shaping the apocalyptic imagery of the fourth section. See Zapf 1999.

water, in a network of sensory impressions which link her role as family rebel and social outsider to a textual force of ecosemiotic attraction, in which the life-sustaining interconnectedness of human with more-than-human life, that has been cut off in the closed circuits of exclusionary social norms and family conventions, is symbolically evoked.

In Morrison's *Beloved*, the imaginative counter-discourse takes on different forms on the various temporal planes in which the narrative process unfolds. In a political form, it is represented in the community of ex-slaves that the aged Baby Suggs, mother of eight children whom she lost in the everyday catastrophes of slave life, has gathered around her in her new home in Ohio. From here, support for the Underground Railroad is organized, and here, too, Baby Suggs gives charismatic sermons during ritual gatherings in a clearing of the forest about African American liberation. In a psychodramatic form, the imaginative counter-discourse is personified in the ghost of Beloved, the murdered child who returns into the present as an incarnation of the repressed past, initiating a multi-voiced process of "rememory" that shapes the nonlinear dynamics of the narrative. Beloved makes possible the confrontation and overcoming of the trauma of slavery in the polyphonic storytelling which is sparked off by her reappearance and in which Morrison combines postmodern forms of plural stream-of-consciousness narration with traditions of African American folklore and jazz (as indicated from the outset in the name of the "Blues[-]tone Road" on which Sethe's haunted house on the outskirts of Cincinnati is located). Beloved is a highly ambivalent figure, representing, on the one hand, the countless anonymous victims of slavery, but on the other hand also the return of the power of feelings, of "loving" and "being loved," which had been symbolically destroyed in Sethe's killing of her own child as her desperate, self-destructive act of resistance against Schoolteacher's regime. Beloved reintroduces a sphere of tenderness, longing, and desire as a parallel world of magic and re-enchantment, in which repressed emotions return, as indicated in the opening of the metaphoric tin box of Paul D's heart through his erotic contact with Beloved. As a force of strange but irresistible attraction, she counteracts the violence of racial, cultural, and personal separation. Beyond her role as victim, therefore, Beloved becomes a powerful agency, a catalyst of radical change and metamorphosis, resembling in some ways the trickster figure of African American folk tales, which transgresses cultural taboos

in order to liberate subliminal fears and desires of human beings. Having emerged from water as a spectral hybrid being on the boundary of culture and nature in a kind of resurrection from the dead ("A fully dressed woman walked out of the water," 63), Beloved is a medium of metamorphic contact, which reawakens Sethe's ability to love; dissolves Paul D's inner paralysis through her erotic desire that leads Paul D "to some ocean-deep place he once belonged to" (34); and in the end returns into her element of water as a pregnant naked woman, "with fish for hair" (328). Human and nonhuman agency converge as water, trees, and the regenerative cycles of more-than-human life contribute to an ecosemiotic counterdiscourse that is also expressed in another central recurrent signifier of the narrative, the deep scar on Sethe's back, which is the brutal mark of her violent slavery past, but in the course of time assumes the shape of a blooming tree. The metamorphic blending of the bodily trace of her trauma with a signifier of possible regeneration is a transformative process which characterizes the imaginative process of the novel as a whole (cf. Bonnet 1997).

### Literature as reintegrative interdiscourse

In its third function as a reintegrative interdiscourse, literature brings together the civilizational system and its exclusions in new, both conflictive and transformative ways, and thereby contributes to the constant renewal of the cultural center from its margins. The alternative worlds of fiction derive their special cognitive, affective, and communicative intensity from the interaction of what is kept apart by convention and cultural practice—the different spheres of a society characterized by institutional and economic specialization and differentiation, public and private life, social roles and personal self, mind and body, the conscious and the unconscious, and, pervading them all, the basic ecological dimensions of culture and nature. It is particularly the process of bringing together the culturally separated spheres or discourses which, even if it results in failure and catastrophe on the plot level, often appears as a moment of regeneration and the regaining of creativity on a symbolic level.

In all of the above-mentioned novels, the reconnection between the systemic-historical realities, whose limitations are critically exposed in the culture-critical metadiscourse, and the various manifestations of their excluded other, whose rich ecosemiotic potential is actualized in the imaginative counter-discourse, forms a third, reintegrative dimension in a transformative dynamics of narrative texts that constitutes a tentative ground for systemic self-corrections and for potential new beginnings, either in the text itself or in its interaction with the reader. Complementary to the scientific project of "consilience" (Wilson), this literary form of integrating separate domains of knowledge and experience resembles what Greg Garrard describes as the "conciliation" of polarized perspectives" (Garrard 2016).

In The Scarlet Letter, this bringing together of culturally separated spheres is already inscribed into the basic conception of the novel in that the spiritual representative of the puritan community from which Hester Prynne has been excommunicated is revealed to be the father of the illegitimate child who was the reason for her punishment. The moments in the text in which this long repressed tension rises to the surface of action and consciousness, and in which the separated poles are brought to direct interaction, are clearly marked as moments of revitalization and symbolic rebirth, even though they lead to the tragic catastrophe in the end. Thus when Dimmesdale meets Hester again in the forest after seven years of separation, he feels liberated and reborn: "I seem to have flung myself, sick, sin-stained, and sorrow-blackened—down upon these forest leaves, and to have risen up all anew" (Hawthorne, 219). And when he returns home from this encounter in nature to his study, the place of introspection and civilizational enclave from life, he is all at once able to write the text of his greatest sermon, of which only an uninspired draft had existed before, and which he now finishes throughout the whole night in trancelike productivity: "There he was, with the pen still between his fingers, and a vast, immeasurable tract of written space behind him" (240). This is a key passage in the novel, a parable of literary creativity, which renews itself at the very moment in which the culturally separated spheres of mind and body, self and other, culture and nature are symbolically reconnected. The words of the sermon, however, which Dimmesdale delivers in the church at the inauguration of the new governor, are not directly accessible to the reader. With Hester as focalizer, the reader can only witness their powerful impact on the community from outside, but the music-like sound of Dimmesdale's voice permeates the church-walls and symbolically links inside and outside

through a nonverbal language of excessive emotions, in which the discursively inexpressible richness and ambiguity of human experience is nevertheless paradoxically expressed. Dimmesdale's voice becomes a dionysian force of connectivity beyond the walls of the civilized order and an aesthetic medium conveying the music of life itself:

Like all other music, it breathed passion and pathos, and emotions high or tender, in a tongue native to the human heart, wherever educated. Muffled as the sound was by its passage through the church-walls, Hester Prynne listened with such intentness, and sympathized so intimately, that the sermon had throughout a meaning for her, entirely apart from its indistinguishable words. (256)

It is radically ironic that this nondiscursive music of words, whose composition and creative power is the outcome of Dimmesdale's erotic reunion with Hester in the forest, is enthusiastically received by the puritan community, even though or, rather, precisely because it involves the radical subversion of its own foundational beliefs. The public sphere is reconnected to the personal, the spiritual to the erotic, the discursive to the aesthetic, in a complex act of polysemic re-integration which turns the culturally excluded into a transformative force both for the cultural system and for human relationships. Dimmesdale's sermon, as far as its paraphrased content indicates, envisions the renewal of America from a spirit of shared rather than divided community life; and it releases repressed feelings among the characters, which leads to the revelation of their long-concealed intimacy and interdependence, as epitomized by the public revelation of the psychosomatic image of the scarlet letter on Dimmesdale's breast. The aesthetic process of the novel as a whole is illustrated in the genesis, composition, and communicative effect of Dimmesdale's sermon as a creative process linking nature, culture, and community in a polysemic mode of narration that moves within, between, and beyond cultural discourses. And it is this interdiscursive agency of the excluded other, which becomes an irresistable force of connectivity in the end that overcomes the binary oppositions of the civilizational system that the initial act of instituting the divisive regime of the scarlet letter had intended to reinforce.

Similarly, in *Moby-Dick*, while Captain Ahab's monomaniacal pursuit of the white whale moves toward its tragic conclusion, the internal interrelatedness

of the antagonists of man and whale, culture and nature is increasingly raised into consciousness by the narrator. Here, too, the two poles are directly brought together at the end in a highly ambivalent way. On the one hand, the book ends in death and annihilation, and the indissoluble entanglement between man and nature which Ahab denies is ironically underlined by the fact that he becomes ensnared with the white whale through the lines of his harpoon as he is pulled down into the depths of the ocean. On the other hand, the book ends with the survival of the narrator Ishmael, who is drawn toward the vortex of the sinking ship, but is saved by Queequeg's coffin, which miraculously emerges at the center of the whirl. Queequeg, a figure of an indigenous cosmographic knowledge of nature inscribed on his tattooed body but no longer decipherable by his conscious mind, had built this coffin in a vague premonition of impending catastrophe. The whole process of the novel has moved toward this vortex, as it were, which metaphorically blends the abyss into which the civilizational project of absolute supremacy over nature is doomed to plunge, with the "cyclical" forces of regeneration that the symbolic restoration of the broken relationship between humanity and elemental nature sets free. This is at the same time the condition for the literary creativity of the novel itself, because Ishmael's survival makes possible the multi-layered narration of the borderline experience between culture and nature, conscious and unconscious, human and nonhuman life which the novel conveys.

In Chopin's *The Awakening*, it is Edna Pontellier's final encounter with the sea which brings together the exclusionary forces of human society and the reintegrative forces of elemental, more-than-human life in both tragic and regenerative ways. The failure of Edna's quest for human love and belonging leads into her final awakening as a "newborn creature, opening its eyes in a familiar world it had never known" (Chopin 136). When she swims out to the point of no return, the process of individual self-realization and self-discovery which has characterized one pole of the novel's dynamics, namely Edna's transgressive liberation from the restricting power of social conventions, is directly blended with the other pole of this dynamics, her self-abandoning attraction to an elemental life force represented in the "voice of the sea" as an omnipresent leitmotiv of the narrative. As Edna is losing her strength and consciousness, her mind returns to her childhood, and her individuality dissolves in the universal connectivity of all being: "There was the hum of bees,

and the musky odor of pinks was in the air" (Chopin 137). This is the final sentence of the book, indicating that the ending is also a new beginning. Death turns into metamorphosis, and individual life in an anthropocentric sense is not just annihilated but integrated into an always emergent, always new becoming and biosemiotic fullness of existence. In manifold ways, therefore, the novel reintegrates what is culturally separated: the enlightenment idea of personal self-determination with an ecopoetic sense of existential wholeness; mind and body; reflection and emotion; medium and meaning; art and life. This also affects the form of the novel in its sophisticated intertextual and intermedial composition and multiple stylistic coding between naturalist, realist, romantic, and modernist registers.

In Faulkner's *The Sound and the Fury*, a reintegration of the disintegrated Compson family and the white Southern society that it represents is not possible on its own terms, but only within an altogether different framework—that of the old black servant Dilsey, who, initially a marginal figure, emerges as a main character in the final chapter of the book. In her knowledge of the harsh realities of survival within a racist society, she is also aware of the larger conditions of the natural ecosphere to which human life is exposed: "The day dawned bleak and chill, a moving wall of grey light out of the northeast ... [Dilsey] stood in the door for a while with her myriad and sunken face lifted to the weather ..." (Faulkner 1971: 237).4 Dilsey figures as a counterpart to the Compson world, of which she has been a part from the beginning, but to whose decadent self-centeredness she represents a fundamental ethical alternative. As a representative of the subaltern, who is completely marginalized in the first three chapters of the novel, she becomes the central figure of the fourth chapter as the bearer of an existential knowledge and empathetic responsiveness that overcomes the systemic egocentrism dominating the society surrounding her. Dilsey is the only person who, in spite of being constantly overworked, also takes care of Benjy, the outsider tolerated only grudgingly by the whites and hidden away from the world. In spite of the almost unbearable physical and mental burden inflicted on Dilsey, she has a stoical capacity for calmness and composure in the chaotic Compson household. Her joy of life has survived

Susan Scott Parrish points out the importance of weather as a contextual frame of the novel in "Faulkner and the Outer Weather of 1927." American Literary History, 24.1 (2012): 34–58.

despite all exploitation and deprivation, and this links her to the creative vitality of African American culture—a vitality which has helped black culture to live through and beyond the darkest years of slavery. This life-affirming joy is expressed in Dilsey's singing during work, and especially in the Easter service she attends with Benjy and her children, which culminates in a sermon that is a prime example of African American sermon culture as it developed in the South from folklore and anti-slavery traditions. During the preacher's charismatic sermon, Dilsey experiences a spiritual catharsis and an epiphanic insight into the deeper truths of life and history: "I seed the beginnin, en now I sees the endin" (264), a vision which applies not only to her personal existence, but to the Southern culture under whose restrictions she has lived and whose decline she foresees. Her voice resonates across the sharp cultural divides of her time and society, even if Jason's repressive form of conventional order is, at least outwardly, reinstated at the end of the novel.

In Beloved, the imaginative counter-discourse, which revolves around the phantom figure of the returned dead daughter, only gains its transformative potential by being related back to the real cultural world. Sethe, who in her guilt and self-sacrificing love for Beloved totally withdraws from the external world, must be readmitted into the black community from which she has been excluded, before the ghost of Beloved, together with that of the white slaveholder, can be exorcized and a new beginning for human relationships can be imagined. This act of exorcism is performed by the community of African American women, who have come to Sethe's haunted house to liberate her from the possessive spectre of the past into which Beloved has turned. Their ritual of chanting brings alive the spirit of Sethe's long-dead mother-in-law Baby Suggs, the shamanist leader of fugitive slaves preaching a new religion of the "flesh," a self-confident affirmation of their abused bodies in ritual gatherings in a clearing in the forest. "Love your flesh" had been the refrain of Baby Suggs' new gospel: "This is flesh I'm talking about here. Flesh that needs to be loved" (108). This conveys, in a postcolonial literary mode, a similar recognition of the lifesustaining web connecting body, self, and environment that Merleau-Ponty in his eco-philosophy likewise calls "the flesh" (cf. Westling 2011: 131). The enchanting sound that accompanies the women's re-enactment of Baby Suggs' former ritual at Sethe's house is a preverbal expression of this communal selfaffirmation of the flesh. It is the search for a deeper, biosemiotic code of living

signs that opens up closed circuits of communication toward an elemental flow of dionysian energies that bring together the culturally separated in a shared moment of transformative catharsis.

For Sethe it was as though the clearing had come to her with all its heat and simmering leaves, where the voices of women searched for the right combination, the key, the code, the sound that broke the back of words. Building voice upon voice until they found it, and when they did it was a wave of sound wide enough to sound deep water and knock the pods off chestnut trees. It broke over Sethe and she trembled like the baptized in its wash (321).

Beloved is standing in the door, and had "taken the shape of a pregnant woman, naked and smiling in the heat of the afternoon sun" (321). A white man appears behind the chanting women, whom Sethe mistakes for a slaveholder, but as she tries to attack him she is prevented from a new act of violence by the surrounding women, while Beloved mysteriously disappears and is glimpsed from afar returning to the water from which she had emerged. The women's ritual intervention symbolically breaks the vicious circle of trauma and violence and enables a regenerative experience that reconnects the culturally separated spheres of mind and body, self and other, culture and nature, and transforms a traumatic past into precarious new beginnings: politically, in the symbolic exorcism of slavery; emotionally, in the love between Sethe and Paul D, who returns to her with a view to a shared future: "Sethe, he says, 'me and you, we got more yesterday than anybody. We need some kind of tomorrow" (335); and socially, in Denver's leaving home and starting her life as an educated woman in a United States that is about to be radically redefined by the active participation of the formerly marginalized groups of African Americans and of women.

Obviously, this symbolic reintegration of the excluded into the cultural system does not mean any superficial harmonization of conflicts but rather, by the very act of reconnecting the culturally separated, sets off conflictive processes and borderline states of crisis and turbulence. As the abovementioned examples show, culturally powerful texts are often post-traumatic forms of storytelling, in which the traces of the unspeakable, unavailable, and unrepresentable remain present in all attempts to reconstruct the past and to re-envision the future. But what is historically and realistically unavailable can

be symbolically integrated into language and discourse in imaginative texts. Literature binds back, in ever new ways, the discourses of civilization to the living memory of those elemental creative energies which are stored in the history of the literary imagination. Effective works of literature are therefore, in a radical sense, new and old, modern and archaic, historical and transhistorical at the same time. Literature keeps alive its productivity by reconnecting, in ever new forms, the cultural memory to the biophilic memory of the human species.

In this sense, as this book argues, literary texts are a mode of sustainable textuality, since they are sources of ever-renewable creative energy (Rueckert). They are self-reflexive models of cultural creativity, which constantly renew ossified forms of language, thought, and cultural practice by reconnecting an anthropocentric civilization to the deep-rooted memory of the biocentric coevolution of culture and nature, of human and nonhuman life. Literature here fulfills a function which cannot be fulfilled in the same way by other forms of discourse but which is nevertheless of vital importance for the richness, diversity, and continuing evolutionary potential of culture as a whole. In this sense, literature and art represent an ecological force within cultural discourses, which is translated into ever new aesthetic practices and which can be actualized in the creative reception of readers in always new ways across different historical periods and cultures.

### Part Four

# Transdisciplinary Contexts of a Cultural Ecology of Literature

As has been seen, cultural ecology, both as dimension of critical theory and feature of literary process, cannot be contained within existing categories of language and discourse. Instead, it always moves between and beyond them as a transformative textual-discursive principle which fluidifies fixed concepts and transgresses closed binaries of thought and imagination. As a dynamic-relational rather than systemic-logocentric principle of critical thought and imaginative production, cultural ecology has to do with clusters of relationships and differences, in which former exclusionary binaries are replaced by interactive domains of connectivity-in-diversity, whose poles are constantly influencing and mutually transforming each other.

This transformative dynamics of cultural ecology is related in the triadic model to individual texts and artifacts as complex self-reflexive models of those relationships. In the following, I am extending the scope of attention to a wider range of transdisciplinary domains, which are characteristic of the ecological potential and productivity of literature beyond single texts and across periods and cultures. Thereby, I will focus not on isolated concepts but on patterns of relational polarities, in which the in-between status and the mutually defining transition between the constitutive terms rather than any single semantic reference domains, are foregrounded. This will help to place the approach of a cultural ecology of literature within a number of widely discussed frameworks of ecocultural debates in order to demonstrate and further differentiate its transdisciplinary potential as a generative paradigm of literary and cultural studies.

These relational polarities do not follow a traditional binary logic but a transdisciplinary thinking in complexity, which is based on the "nonseparability" and fundamental "indeterminism" that characterize ecological processes from the physical microlevel to the organic and ecocultural macrolevels (Nicolescu 17–19). This thinking in complexity extends the binary logic of mutually exclusive contradictories toward a logic of the "included middle," which associates opposite terms in nonlinear correlations interacting on always new emergent levels: "The tension between contradictories builds a unity that includes and goes beyond the sum of the two terms" (Nicolescu 29–30). Transdisciplinarity in this sense "concerns that which is at once between the disciplines, across different disciplines, and beyond all disciplines," exploring in-between spaces of knowledge that are however not empty but on the contrary, are "full of all potentialities" (Nicolescu 44).

### Text and Life

### Life sciences versus literary knowledge of life

One central assumption guiding a cultural ecology of literature, which has been an underlying premise of the argument of this book, is that imaginative literature represents a special form of cultural knowledge of "life." In discussing the relationship of literature to life in the context of contemporary knowledge landscapes, the "life sciences" represent an inevitable frame of reference. As part of the experimental natural sciences, the life sciences are not only drawing public attention and money to their disciplines but are also often credited with discursive authority in the definition of what is currently seen as constituting "life." Indeed, the life sciences have recently expanded their research into areas which have been considered genuine domains of the humanities and of literary studies—for example, in the debates about mind, consciousness, and ethics in the neurosciences. Yet as Ottmar Ette among others argues, it would involve a severe epistemic as well as ethical reductionism to assume that the natural life sciences could cover the whole spectrum of what constitutes "life" in a sufficiently complex, that is, also cultural, sense, or that they could claim a superior authority of truth over the phenomena which they are taking as their objects of research within the premises of their quantifying, causal-empirical, and objectifying methodology (Ette 2004). Instead, both the openness to these disciplines and yet also the awareness of different forms of knowledge of life which have evolved in cultural history seems to be required for transdisciplinary literary studies.

In order to further elaborate this point, I refer in the following to three theoretical frames at the interface of literary-cultural and bio-ecological perspectives which have significant affinities to a cultural ecology of literature: the biocultural approach of Nancy Easterlin, the ecological aesthetics of Gernot

Böhme, and the "embodied dynamicism" proposed in Evan Thompson's phenomenological interpretation of the life sciences (Thompson 10ff.). They provide the frames of cognitive ambiguities (Easterlin), socio-aesthetic culture-nature-assemblages (Böhme), and autopoetic mind-life-interactivity (Thompson) as useful contexts for an analysis of the processing of "life in literary ecosystems." As Nancy Easterlin critically remarks in her book, A Biocultural Approach to Literary Theory, the aesthetic has not fared well with literary and cultural studies during the past few decades. Yet as she also points out, art and the aesthetic have been a vital factor in cultural evolution since its beginnings. From prehistoric pottery, ritual, or cave painting to the later emergence and diversification of more and more visual, aural, plastic, kinetic or verbal art forms, art has evolved into an integral part of human societies, in which existential issues of fear, threat, reproduction, and survival were symbolically enacted and communicated. As art was increasingly dissociated from religion, myth, and ritual on the one hand, and from economy, philosophy, and science on the other, it was assigned a special, quasi-autonomous sphere outside everyday cultural practices; however, as a communally shared space of mimetic play and performative representation, it gained vital importance by reflecting and transacting fundamental problems, contradictions, and unresolved tensions that could not be otherwise articulated within the available discourses of the community (Easterlin).

These products and processes of art, however, do not provide definitive answers to the culturally crucial questions they address but rather create polysemic "cognitive objects that offer themselves for interpretation" (Easterlin 26). From her biocultural perspective on literature, in which Easterlin combines literary scholarship with the current state of knowledge in the bioevolutionary life sciences, this is not an unnecessary luxury and distraction from truly relevant, decision-oriented survival tasks but "is of a piece with our distinct species logic" (26). Interpretation, as it is called for by literary texts, is an activity which foregrounds and makes conscious the meaning-making impulse itself as one of the most basic and unique features of our evolved species (34). In their very openness, sensory concreteness, and semantic complexity, art and literature express a deep-rooted human disposition to relate otherwise neglected aspects of our interior worlds in sufficiently complex ways to external environments. "Artworks ... have an unusual capacity to bring

back into the consciousness aspects of selves, bodies, behaviors, and the like, that may otherwise remain hidden" (26). Reconnection of consciousness to the unconscious, mind to body, external to internal ecosystems, discursive knowledge to prediscursive experience, is thus one significant function of art and literature for a fully developed capacity of human societies for selfrepresentation, self-reflection, and self-renewal. "Considered as a whole, the semantic power of imaginative literature bears witness to the centrality of meaning-making for the human species, for the business of producing and consuming texts is primarily about extending our meaning-making capabilities, not about something else during which meaning-making happens to become some secondary kind of adventure" (24). In the adaptive analogies between imaginative play, meaning-making, interpretation, and aesthetic experience, which a biocultural account of literary evolution brings to light, literature becomes a space of explorative possibilities, which balances the one-sided economic-utilitarian interpretation of cultural evolution. Through its "defunctionalizing" distancing from the pragmatic imperatives of society and the everyday life-world, imaginative literature is enabled to respond to "dysfunctional aspects" of the sociocultural system and to transform traumatic experiences into potentially regenerative processes (139-140). Literature combines the invitation to complex interpretation with the capacity of (re) structuring disconnected experiences in acts of symbolic sense-making, in which the human preference for "patterned information" (31) and "our ability to use compositional, recursive language" are brought to expression in full intensity, acknowledging "our shared human nature" beyond individual, historical, and cultural diversities (33-34).

As Easterlin demonstrates in examples from Wordsworth's romantic poetry to postcolonial novels like Jean Rhys's *Wide Sargasso Sea*, literature links experiences of cultural alienation and traumatization with experiences of our complex embodiedness and embeddedness in the natural world. This activity is shaped by a culturally evolved artistic impulse, since "the capacity to see nature properly, as one of our interrelated and essential attachments, is a product of mind and imaginative effort" (133). Poems are relational, communicative acts, which articulate unarticulated thoughts, feelings, wishes, fears, conflicts, and desires that make up as much of our shared psychosocial "reality" as the externally visible and publicly represented social world. In

this counter-discursive dynamics, literature combines a diagnostic with a therapeutic function, (re-)enacting personal and collective traumas and crises in ways that involve the potential for "healing functions" (140).

This biocultural description of literary functions implies an affirmative attitude to life but also, ultimately, to the human mind and to cultural evolution. Ecocriticism, according to Easterlin, has an enormous potential for the disciplines of the humanities, if it combines its attention to the revaluation and agency of nonhuman nature with an awareness that the mind, the imagination, culture, human agency, and intersubjectivity, which are rather sidelined in some versions of ecocentric theory, are indispensable for all cultural evolution, for ecological engagement, and, indeed, for all ecological studies of the culturenature relationship (151). In such a self-aware form of ecocriticism, Easterlin asserts, "literature will be a profound resource, showing that the capacity to trust and love other humans makes it possible to love the world" (151). Starting from bio-evolutionary premises, this kind of ecocriticism arrives at cognitive, communicational, psychological, and ethical dimensions of ecology in which the aesthetic becomes a special site and source of ecological sensibility and knowledge.

In a complementary direction, Gernot Böhme's philosophy has evolved from a critical theory of culture and society toward a cultural ecology of the body. Influenced by the Frankfurt school of critical theory, Böhme moved beyond what he saw as their aesthetic formalism and their heavily intellectualized critique of commodification and alienation of modern life, through which the vital experience of the body and of sensory interaction with the environment was eclipsed as an integral part of language and cultural semiotics. The "ecological aesthetics of nature," which Böhme proposes, (Böhme 1989) extends from the domain of art into the concrete life-world of modern humans, advocating a new awareness of the sense-making power of the human body, the Leib, as the "nature that we ourselves are," in its existential interrelation with other beings as "the nature that we are not" (Rigby 2011: 140 quoting Böhme). The sensory intensity and intimacy of this exchange relation is reflected in language itself, which relies on elementary images, signs, and symbols from embodied interactivity between humans and the environment. Sensory perceptions such as hot/cold, hard/soft, fluid/solid, dark/light, painful/pleasant, which in turn are related to elementary forces and cycles of nature—the elements of fire, water, earth, and air, the seasons,

the trajectories of planets, and so forth—account for a substantial part of the linguistic-metaphoric repertoire with which everyday language but also the language of poetry, works. "Somatics, in other words, precedes semantics" (Rigby 141). A key concept for Böhme is "atmosphere," which designates both a psychosomatic experience of what Stacy Alaimo would call a "transcorporeal" dimension of reality (Alaimo 2010), and an aesthetic experience in which synesthetic effects are shared in intersubjective forms of perception (Spinner). The task of a future ecophilosophy, according to Böhme, is to rehabilitate and reactivate vital forms of aesthetic experience as expressed, for example, in the notion of "atmosphere," against the massive manipulation and systemic marginalization of such experiences in present-day consumer society. This task would involve no cultural regression to a pre-modern society but on the contrary would require the recognition that nature is not something lost in an ideal past but a not-yet-realized "cultural project" (Rigby 140). It calls for an ongoing project of creating a "humane living space" in an ecological society of the future, in which the sense-making needs of human beings and the respect for the integrity of nonhuman nature are brought into new forms of balanced relationships. This alliance of humans with nonhuman others "could enable us to create largely self-regulating ecological (i.e., social-natural) complexes (ökologische Gefüge), which would be conducive to human well-being while simultaneously respecting the interactive autopoiesis of other-than-human nature" (Rigby 141). To achieve this, Böhme advocates a broadly conceived, ecological "aesthetics of nature," which also contains an ethical component by revaluating body, perception, and emotion vis-a-vis a predominantly rationalist and instrumental civilization. The literary implications of this concept of "atmosphere" have been examined by Kate Rigby in Australian poetry (Rigby 2011) and by Kaspar Spinner in German literature (Spinner). Both of them demonstrate in different contexts how the atmosphere constitutes an indispensable and highly variable aspect of the ways in which space, place, and human lives are intrinsically interrelated in the ecological aesthetics of imaginative texts. It seems to me that this notion of atmosphere need not be limited to concretely emplaced intersubjective experiences but might also resonate more widely with the physical "atmosphere" of the earth itself as the primary condition of life and survival on the planet, to which the atmospheres of (inter)subjective microworlds may be more or less attuned.

Another enriching perspective for a transdisciplinary positioning of literature within contemporary knowledge cultures is provided by Evan Thompson's Mind in Life, even though Thompson himself doesn't explicitly develop his argument in this direction. Thompson offers a broadly framed, phenomenologically grounded interpretation of the life sciences which insists on the necessity to include an experiential, subject- and consciousnessoriented dimension in the ways in which the "embodied dynamic systems" of living organisms are to be conceived (Thompson 2007: 10ff.). Reconsidering guiding paradigms of the contemporary life sciences such as autopoiesis, system, and emergence from a complementary set of phenomenological notions such as consciousness, experience, or embodied vision, Thompson arrives at complex descriptions of autopoetic and, by extension, of "ecopoetic" life processes (118–122), which in terms of their constitutive culture-nature and mind-body interactivity, are also and specifically relevant for literary texts. As Thompson writes in a strangely reflexive formula borrowed from Hans Jonas, "life can be known only by life" (164). Thompson goes on to say that what makes this kind of knowledge of life possible in the first place is the capacity for "empathy" with other living organisms, which is derived from our own "lived experience of our bodily being" (165). We cannot grasp the phenomenon of "autopoetic selfhood," (162) which forms the basis of all living organisms in their self-sustaining constructions of inside/ outside, system/ environment, without taking recourse to our own embodied experience of inwardness and purposiveness. "[E]mpathy is a precondition of our comprehension of the vital order, in particular of the organism as a sense-making being inhabiting an environment" (165). If imaginative literature is a cultural mode of communication that is based on "empathy" in a broad sense, that is, on the generic potency of stepping outside oneself into an alternative world of fiction while yet remaining oneself as a reader;1 of taking ever new perspectives of strangers while never fully escaping one's own; of immersing oneself in the embodied minds of other human and nonhuman beings while depending on one's own previous experiences then literature has indeed a special contribution to offer in terms of that more

This reminds of Wolfgang Iser's adoption of the Greek notion of "ek-stasis," or ecstasy, for the act of writing and reading fictional texts, also in the sense of stepping outside of oneself while simultaneously remaining oneself on a different plane (Iser).

comprehensive knowledge of life envisioned by Thompson. As empathetic creation of multiperspectival worlds and self-reflexive staging of concretely imagined life processes, literature is a form of cultural knowledge in which the maxim that "life can be known only by life" is part of its generative and epistemological code.

The three theoretical models provide useful contexts for an analysis of the relationship of text and life in literary ecosystems—the role of cognitive dissonance and textual ambiguity as a source of complex interpretation (Easterlin), the role of socio-aesthetic culture-nature-assemblages for analyzing biophilic or biophobic "atmospheres" in texts (Böhme), and the interactivity between mind and life as a way to illuminate the tension between autopoetic self-organization and the experientially open, "embodied" environmentality of texts (Thompson). Against the background of these theoretical frames, literature appears as a specifically potent, self-reflexive form of ecocultural "knowledge of life," of *Lebenswissen* (Ette 2004).<sup>2</sup>

If we broaden the spectrum further, we see that life means different things in various disciplines and branches of knowledge within and beyond the life sciences: In biology, it is the genetic structure and evolutionary process of living systems; in medicine, it is the physical and biochemical life of the human organism in the ever-precarious balance between sickness and health; in psychology, it is the emotional, intellectual, and communicational life energies that help maintain or restore the vitality of a person in the face of crisis, alienation, or traumatization; in sociology and political science, it means the right to life as a form of personal and social self-determination as well as the various forms and problems of "living together" between individuals and cultures (Ette 2009); in philosophical ethics, the doctrine of the "good life," however it may be defined in detail, becomes a guiding principle, which, again, relates not only to the individual self but includes respect for the life of other people and living beings. In the view of cultural ecology, and in the light of the nonreductionist adaptation of the contemporary life sciences discussed above, literature can be seen as a multiperspectival form of writing that

<sup>&</sup>lt;sup>2</sup> Ette translates the term *Lebenswissen* as "knowledge of living," but it seems to me that its more systematic-epistemological function within the overall system of cultural knowledge is more adequately expressed in the noun form of "knowledge of life" (Ette 2004).

potentially encompasses and participates in all of these different meanings and manifestations of life.

## Writing about life in Henry David Thoreau's *Walden* and Herman Melville's "Bartleby, the Scrivener"

Let me demonstrate this in the following two well-known narrative examples from classical American literature, one of them a key work of the ecocritical canon, Henry David Thoreau's Walden, the other a rather unlikely candidate in this context but nevertheless, as I think, equally relevant to a cultural ecology of literature, Herman Melville's "Bartleby the Scrivener." Walden is clearly an experiment of exploring human life from the renewed contact to nature both at the experiential and the textual level, as formulated in the famous programmatic statement of purpose: "I went to the woods because I wished to live deliberately..." (Thoreau 90) As ecocritics have pointed out, Walden is transfused by an ecocentric attitude to life as a continuum of human and nonhuman life, which Thoreau describes in all its phenomenal and perceptual diversity and in which the ecosystem of Walden Pond becomes a powerful textual presence in the myriad manifestations of its fauna and flora but also in the water of the lake itself as a transformative medium of deeper human self-knowledge. Thoreau not only bodily immerses himself in the water by bathing in the pond but also opens up his mind to the mutually shared identity of human and nonhuman nature when he describes Walden Pond as "earth's eye, looking into which the beholder measures the depth of his own nature" (Thoreau 141).

Yet as this quotation shows, Thoreau's project in *Walden* is not really an abandoning of culture, consciousness, and subjectivity in a radical ecocentrism. On the contrary, it is also a project of discovery and self-discovery, a quest for knowledge, intensity, and creativity, which includes but also goes beyond the biological level. It is the personal life of Henry David Thoreau in his activities of observation and reflection, of self-cultivation and self-enhancement. It

<sup>&</sup>lt;sup>3</sup> Part of this comparative analysis of *Walden* and "Bartleby" is also contained in my essay "Cultural Ecology and Literary Life Writing," *Ecology and Life Writing*. Eds. Alfred Hornung and Zhao Baisheng. Heidelberg: Winter, 2013: 3–25.

is furthermore the life of a modern individual in a society by which many people are traumatized—"the mass of men lead lives of quiet desperation" (8), Thoreau states near the beginning of the text— and from whose imprisoning biophobic conventions he is trying to free himself through his search for his own heterotopia of life in nature. The life that Thoreau writes about in Walden is moreover also the life of a US citizen in the political and social context of the mid-nineteenth century, for whom slavery in the South but also the working conditions of the industrial capitalism of the North, as well as the war against Mexico, represent severe violations of fundamental ethical values. On still another plane, life in Walden also gains a spiritual sense as the life of a mind and an almost mystically intensified consciousness which communicates not only with local nature but with other minds in a global network of references and textual quotations from European, Native American and Asian sources in a kind of global "ecology of mind." Thus the perspective of the book is neither on nature nor on the mind alone but on the manifold analogies and embodied interactivity between self and world, culture and nature, human and nonhuman life as the narrative focus and generative principle of the text's aesthetic process. A cultural-ecological reading of Walden, in my view, can account more adequately for the complexities of meaning that unfold in these mutual transformations, translations, and metaphorical blendings of images and experiences from nature and culture than either a merely biologicalecocentric or a merely culturalist-anthopocentric reading of the text.

Now one could argue that such observations are perhaps relevant to writers like Thoreau, who in their explicit poetological staging of nature as an inspirational source of their texts have come to be almost hyper-canonized in ecocriticism. Yet in fact the argument of a cultural ecology of literature would precisely be that the degree in which the generative potential of literature is realized is not primarily a question of thematic intention or content but of the artistic power of the texts, which are exploring the possibilities and limits of life within historical cultural circumstances in a multilayered and always shifting interaction between culture and nature, between biophobic and biophilic forces.

Melville's "Bartleby the Scrivener," subtitled "A Story of Wall-Street," seems to represent the opposite pole to Thoreau's *Walden* in the spectrum of texts dealing with life on the boundary of culture-nature interaction. Published in

1853, one year before Thoreau's fictionalized account of his "Life in the Woods," "Bartleby" is marked from the beginning as a form of fictional life writing: "... I waive the biographies of all other scriveners for a few passages in the life of Bartleby, who was a scrivener the strangest I ever saw or heard of. While of other scriveners I might write the complete life, of Bartleby nothing of that sort can be done" (Melville 13). It is thus, however, a form of life writing which is confronted with its own insufficiencies, with radical alterity and resistance to linear narrative, and indeed to any traditional conception of human life itself. Where Thoreau's text is opening up the closed world of civilizational routine and conventions to the experiential complexities of life in nonhuman nature, Melville's story is taking the reader into the innermost cells of that civilizational world in the financial center of Wall Street, in which the protagonist is shown to be imprisoned by labyrinthine walls, whose quality, as the narrator points out, is "deficient in what landscape painters call life" [italics in the original] (14)—indicating that art, which has no place in the lawyer's world, is inherently related to a "life" that is absent from his offices. Nevertheless, parallels have been drawn in criticism between Thoreau's concept of civil disobedience and resistance to civil government and Bartleby's passive resistance to the world of economic functionality that he expresses in his refrain-like statement "I would prefer not to." And while this may appear to be a merely political or sociocultural parallel, the resistance of Bartleby does gain a more fundamental quality in that he refuses to participate in the abstract mechanisms of a social world from which the natural world seems to be entirely absent, and that has deprived human beings of a life according to their evolutionary needs. This is also demonstrated in the case of the two other scriveners in the lawyer's office, who are suffering from severe eating and digestion disorders and other psychosomatic symptoms, and only function half of the day—one of them in the morning, the other in the afternoon—while they are sick and aggressively dysfunctional during the other half of the day and never seem to be able to get fully adjusted to the bureaucratic requirements of their office work. "Indeed," the narrator states, "if he wanted anything, it was to be rid of a scrivener's table altogether" (17).

Bartleby translates their unconscious, nonverbal resistance into his explicit and radical resistance, abandoning not only his work but, in the end, life itself and dies in utter loneliness in the prison of The Tombs, his head against a

wall. But something remarkable, even though apparently only marginal and insignificant, has changed when the narrator finds him there. Bartleby, who has always been inside buildings, has gone out of his cell for the first time, even though it is only the walled-in space of the prison yard. And it is here, too, that for the first and only time in the story, nature manifests its inconspicuous presence: "The Egyptian character of the masonry weighed upon me with its gloom. But a soft imprisoned turf grew under foot. The heart of the eternal pyramids, it seemed, wherein, by some strange magic, through the clefts, grass-seed, dropped by birds, had sprung" (44). Thus a trace of the living world of nonhuman nature, and of its creative force, has intruded into the humanmade prison of civilization. Bartleby is lying on the grass, whose softness the approaching narrator feels under his feet. As a representative of the cultural system, who has tried to understand and make sense of the phenomenon of Bartleby from various available discourses and categories of interpretation juridical, social, psychological, medical, moral, religious—with no result, the narrator for the first time comes into concrete bodily contact with Bartleby at the moment of his death.

As the narrator encounters this other human being in the labyrinthine wasteland of civilization, he states that "I felt his hand, when a tingling shiver ran up my arm and down my spine to my feet" (45). While the narrator's attempts of a rational understanding of Bartleby's radical difference have only increased the scandalon of his incommensurability, this moment of fascinated contact suddenly bridges the gap between mind and body and enables an experience of shock-like, electrifying intensity, which involves the whole being and organism of the narrator and relates him to Bartleby within a larger principle of life manifested in the current of energy connecting him with the dead body and the grass under his feet. Bartleby, who personifies the exclusions of the civilizational system in his holistic conception of human life—"I am not particular" (41, my emphasis), he maintains—represents an imaginative counterforce in the text that is brought together at the end with the cultural system as personified by the narrator in a transformative encounter, in which human and nonhuman, anthropocentric and biocentric forces are reconnected, without being reducible to one another. "Bartleby" is a prime example of a text in which a high degree of aesthetic openness and indeterminacy corresponds to a particularly powerful form of cultural ecology,

exploring the extreme tensions between the cultural system and its exclusions, between psychosocial and biosemiotic forces, between the untranslatable singularity and the inescapable connectivity of life as a generative signature of textual creativity and knowledge of life.

The triadic functional model proposed above clearly operates in both of the two texts discussed in this chapter: in Thoreau's Walden, the culturecritical metadiscourse is inscribed in the satirical exposure of social conformism and collective self-alienation, which is presented in the imagery of imprisonment and paralyzed life, the "dead dry life of society" (Thoreau 221), whose stifling norms and repetition compulsions are tantamount to chronic self-enslavement. The commercialized society depicted in the first chapter, "Economy," is a caricature of the commodified US myth of democratic freedom and self-determination, which forms the critical starting-point and contrastive background of Thoreau's alternative "life in the woods." Even more conspicuously, such features are evident in Melville's "Bartleby" in the pressures of civilizational normality exerted on the employees of the lawyer's office within the biophobic structures of Wall Street capitalism, which are metonymically expressed in the labyrinth of walls in which the protagonist is imprisoned even before the story's narrative ends up in the literal prison of The Tombs.

In both texts, too, the imaginative counter-discourse is present as a transformative energy of the narrative. In *Walden*, this counter-discursive dynamics of the text is represented in the liberation from restrictive norms of thought and living both in Thoreau's ecophilosophical reflections and his concrete exploration of Walden Pond as an alternative source of knowledge and ethics based on a shared sense of ecosystemic mutuality between human and nonhuman life. In "Bartleby," the imaginative counter-discourse becomes an explicit hallmark of the text in Bartleby's subversively repetitive declaration of resistance to the functional appropriation of human life, "I would prefer not to," which in its radical ambiguity destabilizes the closed circuit of social communication and role prescriptions defining his world. As Georgio Agamben writes: "In the history of Western culture, there is only one formula that hovers so decidedly between affirmation and negation, acceptance and rejection, giving and taking" (Agamben 256). Bartleby is a new Messiah, who claims the right to possible worlds against the existing world in order to preserve

what never was: "To be capable, in pure potentiality, to bear the 'no more than' beyond Being and Nothing, fully experiencing the impotent possibility that exceeds both—this is the trial that Bartleby announces" (Agamben 259). As has been seen, however, this radical counter-discourse is not limited to Bartleby's explicit statement of resistance as a kind of puzzling philosophical aphorism but is part of the whole texture of the story. It is unconsciously inscribed into the deviant behavior and psychosomatic disruptions of the lives of the other employees, of which the formula of Bartleby is a conscious expression.

In different degrees, the two narratives are also shaped by the agency of a reintegrative interdiscourse, even though the latter is much more explicitly present in Thoreau's regenerative experiment of a "life in the woods" than in Melville's parable of an urban wasteland, where the reintegrative function is reduced to minimalist signifiers of an unrealized potential, which has to be imagined by the reader in the communication with the radical indeterminacies of the text. In *Walden*, this reintegrative force is present throughout the text in the constant drawing of analogies between the different domains of mind and matter, culture and nature, the human self and Walden Pond. In "Bartleby," it remains largely absent from the main discourse and only manifests itself in the end, in the shock-like encounter of the narrator with the dead Bartleby in the grass-covered prison-yard, which for the first time makes him feel the existential connectivity of life that is lacking from his Wall Street existence.

# Order and Chaos

# Order and chaos in ecology and aesthetics

In any dialogue between ecology and aesthetics, the relation of order and/or chaos, balance and/or turbulence, harmony and/or disharmony is a recurrent topic. In this respect, it is interesting to see that comparable developments are recognizable in the history of ecological theory and in aesthetic theory, even though the former, being a much more recent phenomenon, has moved through them at an accelerated pace. I am radically abbreviating and simplifying these histories here for purposes of a comparison which reveals some significant shared features between them.

Earlier aesthetic theories, similar to earlier forms of ecocritical thought, emphasized beauty, order, stability, and balance as properties of the natural world, which became models for artistic mimesis and ecological values respectively. This is the premise on which, by and large, classical aesthetics from the Renaissance to the eighteenth century was based. In romanticism and the early nineteenth century, the aesthetic still successfully competed with reason and science for the paradigm of highest humanist achievement. In Nietzsche's revisionist Dionysian version, the aesthetic began to be dissociated from logocentric civilization by being radicalized into a critique of western rationalism. As has been pointed out, to Nietzsche the artwork was not only ergon but energeia, not a self-enclosed entity but a dynamic force-field, a site and source of counter-discursive energies and life-enhancing imaginative productivity. In the fin de siècle, aesthetics became a question of style rather than of nature, and in its formalist redefinition in modernism, the aesthetic changed into an experimental mode of ostranenie (alienation, Sklovskij), of a defamiliarization of all conventionalized thought, perception, and linguistic sense-making, through which an emphatically nonmimetic artistic form was left as the only, paradoxical medium of aesthetic order. In the later twentieth century, the very idea and legitimacy of the aesthetic was radically questioned in the face of historical catastrophes like the two World Wars and especially the Shoah, which was seen to have shattered all humanist illusions of art and the aesthetic. Ever since Adorno's dictum that poetry could no longer legitimately be written after Auschwitz, the aesthetic remained under suspicion as an ideological category that was irredeemably contaminated by and complicit with the unspeakable catastrophes that the fanatic hubris of totalizing power over human and nonhuman life had wrought in the name of civilizational "progress." The beauty of nature, to Adorno, could only be glimpsed in the broken mirror of a no longer beautiful, negative aesthetics, which was practiced in selfreferential works of avant-garde art, rather than in any mimetic correspondence between aesthetic signifier and the natural world (Adorno). Henceforth, in this line of development, the aesthetic continued to exist only as a mere cipher of a lost and forever unattainable harmony between man and nature. The result of such developments was what Arthur C. Danto has called "kalliphobia" (Danto), a profound skepticism in avant-garde art, but also in critical theory and cultural studies, toward everything beautiful or affirmative in relation to art or nature. Aesthetic theory had moved from idealizing affirmation to a profound distrust of its own foundational premises.

Ecocritical thought as well was originally shaped by views of ecosystemic stability and equilibrium states of natural balance, as epitomized in Aldo Leopold's values of "integrity, stability, and beauty of the biotic community" (Leopold 162), on which environmental writing and ethics were to be based. Rachel Carson's seminal text of the environmental movement, *Silent Spring*, was shaped by a narrative of the loss of a former balance of nature by the disrupting influence of technological civilization. "It took hundreds of millions of years to produce the life that now inhabits the earth—eons of time in which that developing and evolving and diversifying life reached a state of adjustment and balance with its surroundings" (Carson 6). In contrast, human civilization developed in ways which deviated from and threatened to destroy this precarious balance:

[T]he chemicals to which life is asked to make its adjustment are no longer merely the calcium and silica and copper and all the rest of the minerals washed out of the rocks and carried in rivers to the sea; they are the synthetic creations of man's inventive mind, brewed in his laboratories, and having no counterpart in nature. (Carson 7)

In the later twentieth and in the twenty-first century, insights from the postclassical sciences, but also the influence of historical developments, began to replace such harmonistic views with notions of chance, contingency, and recurring catastrophes as features of a general instability and chaotic unpredictability of natural processes. The idea of restoring a supposedly pre-existing balance of nature, which underlies traditional environmental discourse and is still prevalent, for example, in popular contributions to political environmentalism such as Al Gore's documentary *An Inconvenient Truth*, is seen to conflict with recent, chaos-theoretical versions of ecology, which reject the notion of an independent, self-adaptive natural balance altogether. "[T]he image of nature as a balanced circuit is nothing but a retroactive projection of man. Herein lies the lesson of recent theories of chaos: 'nature' is already, in itself, turbulent, imbalanced" (Žižek 1992: 38 quoted in Herzogenrath, 4). Like aesthetic theory, ecological theory has moved from emphatic affirmation to a radical skepticism about its own former foundations.

However, in the case of both of these developments, they have not in fact evolved in a unilinear, teleological way, in which one view simply has been replaced by the other as having an unquestionably superior explanatory power. Rather, they continue to coexist in contemporary ecological thought as well as in aesthetic theory. More often than not, they overlap, interact, or mutually define each other's limitations. As far as aesthetic theory is concerned, there have been anticipations of later notions of chaos and turbulence from the beginning of aesthetics in concepts like the sublime, which designated an uncontrollable, more-than-human force of nature as a powerful, but highly ambivalent source of the artistic imagination between transcendental epiphanies and gothic explorations of the uncanny and of the sinister shadow side of human existence. In Edgar Allan Poe's spectral aesthetic

Heide Scott has beautifully demonstrated this in her 2014 study Chaos and Cosmos, in which she argues that chaos and balance have been coexisting paradigms for the understanding of nature and ecosystems in romantic and Victorian literature, showing that the interdisciplinary history of such concepts was shaped in complex ways not just by scientific but by poetic models of ecological processes.

counterworlds, for example, order and chaos, balance and turbulence, are fused in both fascinating and unsettling ways, which is probably one reason why he continues to be an almost omnipresent intertextual presence in modern and postmodern literature. To Poe, aesthetic beauty is the result of an ever-precarious combination of harmony and dissonance, symmetry and strangeness.

But the relation of the aesthetic to beauty has been rehabilitated in significant strains of contemporary thought as well. The historian and philosopher of art, Arthur C. Danto, has been mentioned already as among those who insist on the continued relevance of a sensorium for the "beautiful" in art and culture (Danto). Within the more generalizing framework of Niklas Luhmann's systems theory, the social function of art as a semi-autonomous subsystem within other social subsystems is specified as the construction of order and beauty within possible worlds (Reinfandt). In postclassical physics, N. Katherine Hayles among others has pointed out the inextricable interdependency and complementarity of order and chaos, bringing the natural and human sciences closer together from a chaos-theoretical and quantum-physical perspective (Hayles). The theoretical physicist David Bohm considers artistic creativity as a mode of symbolically articulating patterns of order which underlie the laws of natural creativity as well. The universe consists of a dynamic web of interacting forms of "enfolded order" on various scales from small to large, from microcosmic to macrocosmic systems, in which, as in a hologram, each part contains the whole ad infinitum (Bohm 67). Bohm brings together quantum physics and art, Goethe's morphology of plants and the paintings of Turner and the French impressionists, to trace such forms of "enfolded order" in nature and culture. Similar to invisible wave patterns as described in quantum physics or to tacit infrastructures of consciousness as explored in psychology and psychotherapy, aesthetic creativity uncovers and reinvents elusive forms of order, translating an always emergent morphology of matter and life into the dynamic morphologies of thought and artifact. These manifestations of order are of varying form—as generative order, implicate order, or explicate order—and of varying degree—ranging from lowdegree order in molecules or cells to more and more complex forms of order to an infinite degree of order which, at the other end of the scale, becomes identical with randomness (Bohm). Patterned information as provided by rhythmically structured poems, for example, is therefore an expression of one degree of order, whereas the "vortex" as a chaotically inverted, infinitely self-reflexive form of poetic imagination, as practiced in avant-garde imagism and vorticism, is another. However, both can in principle be present in the same text. Again, "order" and what we would call, somewhat superficially, "chaos" are two sides of the same phenomenon or rather two sides of a basic interactive principle of emergence and transformation on different levels of matter and life, which is translated into the creative ecosemiotic processes of texts and artifacts. With such ideas, Bohm has inspired landscape artists like Zev Naveh, who developed the concept of "total human ecosystems" as a basis for his landscape ecology (Naveh).

On the other hand, earlier ecocritical thought was never as naïve as it was later made out to be. Central concepts like wilderness or "the wild," somewhat like the sublime in aesthetic theory, had an ambivalent fascination and potentially subversive effect for all too harmonizing views of nature. The concept of "the wild" has been claimed for all sorts of attitudes and discourses that are critical of conventional ideas of order and stability, such as, for example, the notion of the wild in such diverse writers as Thoreau, Gary Snyder, Toni Morrison (see Armbruster and Wallace) or, indeed, of Deleuze. It is a provocatively non-conceptual concept that travels across discourses as a destabilizing signifier resisting their tendency of systemic closure. Conversely, the idea of the relative stability and adaptive self-regulation of nature has not been completely superseded in scientific ecology. Scholarly textbooks on ecology, while conceding the role of chaotic and unstable elements in such ecosystems, also point out that their relative equilibrium, that is, their tendency to self-regulation through negative feedback relations, remains a useful hypothesis (Nentwig, Bacher, and Brandl 195-199). This is corroborated by complex systems theory, according to which "equilibrium, homoeostasis, or morphostasis... is obtained through permanent disequilibrium, and overall stability is made of unstable elements" (Kagan 176). This assumption of a "meta-stability of ecological systems" (Wu and Loucko 459) continues to be employed, both on the scale of local and regional ecosystems and on the scale of the whole earth as a globally self-regulating ecosystem as in James Lovelock's and Lynn Margulis' still quite potent Gaia hypothesis (Thompson 121; Schwartzman). According to Margulis,

[t]he simplest, smallest known autopoetic entity is a single bacterial cell. The largest is probably Gaia. Cells and Gaia display general properties of autopoetic entities; as their surroundings change unpredictably, they maintain their structural integrity and internal organization, at the expense of solar energy, by remaking and interchanging their parts. Metabolism is the name given to this incessant activity. (Margulis 237)

Biologists like W. Ford Doolittle and Richard Dawkin have criticized the notion of a global self-regulating ecosystem by arguing that the planet is not a self-reproducing individual. But as Thompson maintains, the idea of an interdependent and self-maintaining planetary ecosystem connected to the special atmosphere and living conditions of the earth still has considerable plausibility (119–122). Thompson adopts from Lovelock the term "ecopoiesis" to differentiate between individual living systems and ecosystems on various scales up to the planetary scale. "[T]his term [ecopoiesis] seems just right for conveying both the resemblance and difference between Gaia and the autopoetic cell. The resemblance is due to the ecosphere and the cell being autonomous systems, the difference to the scale and manner in which their difference takes form" (Thompson 122). Patterns of rhythm and recurrence are part of the phenomenon of life even within its constantly changing, dissipative, chaotic forms—in the incessant processes of vibrant, self-organizing matter on micro- and macrocosmic scales, in the planetary motions of the solar system which are predictable in minute detail, in the cycles of the moon, of tides and seasons but also in the human organism in the rhythms of expansion and contraction as in breathing or the heartbeat. These rhythms are never entirely identical but a precarious sequence of repetition and difference, of regular and irregular processes. But they are recursive forms of autopoetic self-organization and ecopoetic exchange that are constitutive for life in general and for the unique rhythms of life of every individual being in particular, which have to be considered in any ecologically aware ethics and aesthetics of sustainable living. An element of recurrence, rhythm, equilibrium, balance, or self-stabilizing recursivity in the life of bodily natures, as well as in their relationship to their environments, is both a necessary precondition and an always newly to be achieved state in the complex symbiotic coexistence between humans and the nonhuman world. Indeed, on a planetary scale, as I have argued above, the very concepts

of climate change or the Anthropocene presuppose the assumption of *some* kind of balance, however fragile and unstable it may be, of a prior, non-anthropogenic state of nature as the logical basis for the diagnosis of an environmental crisis in the first place, which makes only sense if it is conceived as the result of an increasingly uncontrollable interference of human agency in a fundamentally self-regulating global ecosystem.

It is helpful here to look beyond the debates within contemporary science to ecological ideas from non-western cultures, which are currently being reappraised as important contributions to postcolonial and transnational ecocriticism. In many of these cultures, the ideas of harmony and order in the natural world as models for human life and philosophy, as well as for aesthetic forms of cultural production, are a vital feature of long-term traditions of ecological thought that cannot simply be declared historically obsolete but need to be productively integrated into an increasingly globalized environmental dialogue. As Alfred Hornung has recently shown in a short but highly condensed and relevant essay, ideas of a "sacred balance" between humans and the natural world are shared across various indigenous cultures and forms of knowledge (Hornung 2013, Suzuki and McConnell). Hornung retraces the ways in which the Japanese-Canadian biological scientist and expert on fruit flies, David Suzuki, describes his encounter with the Japanese tradition of Shintoism and with Native American ideas of a respect for nature, as an eye-opening experience of a holistic perception of nature that is lost in the methodological indifference of scientific objectification. In an additional step, Hornung compares this view with the "thousand-year long tradition" of Chinese Garden Culture as an art that creates "a miniature copy of nature according to a harmonious design..." (Hornung 303). It is an art form based on Taoist philosophy, bringing together the domains of landscape architecture with "spiritual activities such as composing poetry, painting, calligraphy, music, the study and discussion of classical literature and meditation.... The placement of human buildings and nature art followed the overall harmonious design of an interdependence of all elements" (305). Hornung is well aware that Chinese garden culture was tied to a strictly hierarchical political system based on economic interests. He nevertheless insists that Chinese garden culture has a rich transnational and transcultural significance as a model of

a holistic and sustainable relationship between culture and nature, not least in the dialogue with "recent theories in political science and contemporary redefinitions of cosmopolitanism" (305).

Against this wider background, it seems that not only the "image of nature as a balanced circuit" (Žižek 1992: 38) but also the opposite image of nature as nothing but chaotic, turbulent, and imbalanced, is, in part, "a retroactive projection of man," (Žižek 1992: 38) more specifically, a retroactive projection onto the sphere of nature and ecology of a western form of postmodern cultural radicalism. Such projections politicize the discourse of ecology not by hypostasizing ideas of cultural stability and hierarchy as natural but by translating ideas of fluid democracy and the anarchic destabilizing of hierarchic power structures from the domain of politics into the domain of nature. From the evidence of scientific ecology, and from the evidence of a "deep," that is, cross-cultural history of environmental philosophy and art, however, there is no easy way out of this double condition between order and chaos, balance and turbulence in nature. They seem to represent necessary, complementary, and mutually conditioning polarities of both ecology and aesthetics, and to think them together is one of the inescapable quandaries with which contemporary ecological thought—and contemporary ecocritical literary theory—has to cope.

### Order and chaos in literary theory

Again, the matter is more complicated than it looks at first sight. What is most recent is not always as new as it claims to be or necessarily more true than what precedes it. There is no linear teleology at work, either in the history of literature or of literary theories but rather an ever-expanding dialogue from which patterns of sufficient complexity for new theoretical work can be extrapolated.

In this sense, it is helpful here to remember that the double coding of literature as a force of both order and chaos within culture, which has been discussed above in a comparative analysis of ecology and aesthetics, is not entirely new in literary theory but goes back to its beginnings in Plato and Aristotle. This suggests that the functional differentiation between literature

and the larger social system, even though more visibly institutionalized in modern societies, antecedes the era of modernization and can be traced to the earliest extant reflections on the functions and effects of imaginative art in philosophy and literary theory. From the first forms of theorizing about literature in classical antiquity, literary art has been described in terms of a strangely fascinating imaginative energy, which transgresses existing realities toward the excluded other of social conventions and domesticated life. In these early accounts, literature already appears as a nascent form of what I call an ecological force within culture. They respond to an increasing tension in the evolution of civilization between the creative processes and energies of art and the rational concepts and normative conventions of a logocentric and anthropocentric sociopolitical order. Plato's famous verdict, especially in *Ion* and *The Republic*, that art and literature should be excluded from his ideal state because of the uncontrollable power released by imaginative works of art over the human mind, soul, and body at the same time contains a first theoretical description of the phenomenon of artistic creativity (Plato, Ion, Republic). Plato recognizes the strange intensity and fascination of invented worlds of the imagination: they transposed their authors, performers, and audiences into states of mental rapture and emotional ecstasy, in which the rational self-control required of responsible citizens was radically suspended, and the rule of ideas was replaced by the reign of the senses, reason by magic, mind by body, order by chaos, the human by the nonhuman, culture by nature. The creative energy associated with the literary imagination was linked by Plato to an inexplicable and rationally unavailable but culturally subversive and transformative power, whose world-creating magic was ascribed to the influence of "inspiration" (Plato, Ion). This transformative imaginative capacity was bestowed on man by a power which Plato variously calls gods, demons, and spirits, clearly referring not to the new God, the benevolent Demiurge of his transcendental idealism but to the old gods of pre-classical Greek mythology. Inspiration in this sense involves the stepping outside of the individual mind and consciousness in the encounter with a more-thanhuman sphere and agency that lends the poetic self a rare power of speech and insight precisely by opening itself toward the force-fields and energies of the culturally unavailable and transgressive.

These force-fields, however, are the source and medium of the mythopoetic narratives, from which Plato tried to purify his logocentric world order. They embody the very energies of creative metamorphosis between mind and body, human and nonhuman nature, personal self and transpersonal communication, which Plato associated with artistic creativity, but which, for moral and educational reasons, he tried to expurgate from his well-ordered anthropocentric civilization. Even though this attempt never fully succeeded, a fundamental tension remained between dominant cultural discourses and the discourse of art and literature, which was taken to synecdochally represent domains that were to be subordinated to civilizational order—emotions, the senses, the body, eros, nature. In the context of American cultural history, for example, puritanism was only one extreme form in which this conflict between cultural order and literary creativity was enacted, but its moral censuring of fictional, imaginative literature—which is satirically targeted in Hawthorne's Scarlet Letter—remained an important factor in American literary history far beyond puritan times. Throughout different cultural formations, literature represented the hetero-discursive sphere of an intra-cultural "other" that was profoundly disturbing but at the same time apparently indispensable for the ecologies of historically changing cultural worlds.

Aristotle's concept of artistic production as "composition," which he developed in response to Plato in his Poetics, rehabilitated art as the wellstructured mimesis of human action in words, that is, as serious, carefully crafted work and artful mastery of form and material, which had its own inherent norms and rules (Aristotle). In this way, Aristotle helped to integrate the creative-transformative potential of art into the sphere of culturally respectable activities. Yet even though his view of artistic creation as composition shaped literary theories as well as literary texts from Horace through the Renaissance, classicism, and modernism, it never fully resolved the tension between reason and art, civilization and literature, cultural and natural creativity. Instead, this tension was incorporated into the internal dynamics of the literary works themselves. It seems that, since the romantic era at the latest, the traditional opposition between inspiration and composition has been translated in literary texts into two kinds of interrelated metaphorical fields and imaginative spaces: metaphors of creative energy and metaphors of connecting patterns. The former is a

chaotic, explosive, disruptive, and radically defamiliarizing textual force, the latter a connective, integrative, pattern-building, webmaking, intertextual, and integrational textual force. Rather than an exclusionary opposition, an often conflictual yet also mutually conditioning interaction between the two poles is characteristic of how creative processes work and are staged in literary texts, and of how these texts function as a transformative ecological force within cultural discourses.

# Order, chaos, and dark ecology in Edgar Allan Poe's "The Masque of the Red Death"

Let me zoom in at this point on a writer who inscribed such contradictory assumptions as a central principle into his aesthetic program, Edgar Allan Poe. To Poe, the highest aim of art is the "rhythmical creation of beauty" (Poe 1950 [1850]: 419; italics in the original). It is a creative activity which translates a more-than-human sphere of cosmic harmony, symmetry, and spiritual order into human language, sound, and narrative. In his theory of poetry and short fiction, Poe emphasizes the Aristotelian element of careful composition and structural unity, in which every part is to be functionally related to the whole of the artwork. At the same time, Poe's works are shaped by an opposite impulse toward radical indeterminacy, toward including uncontrollable forces of chaos, decomposition, and dissolution in their aesthetic processes. His work thus illustrates in a paradigmatic way the "genesic force of chaos at the root of any creation" (Morin quoted in Kagan 214). The singular connectivity of part and whole in individual texts is both sustained and undermined by the infinite connectivity of universal co-existence, which inscribes itself as an ecological force into the dynamics of his imaginary world. In its inclusion of the sinister, gothic, and uncontrollable side of this interconnectivity, Poe anticipates in his aesthetics what today is described with notions of a "dark ecology" that emphasizes the "irony, ugliness, and horror" of ecological thought (Morton 2010: 16). At the same time, Poe insists on combining the two poles of such an aesthetic ecology-terror and beauty, chaos and order, decomposition and recomposition—into a unified textual force-field. This aesthetic ecology corresponds to a more fundamental cosmological and elemental ecology:

"Beauty and terror may be more closely associated in these [elemental] realms than we initially imagine" (Macauley 340).

On the one hand, Edgar Allan Poe's short stories are considered prime examples of that thoroughly composed narrative form, the "short prose tale," which Poe had promoted so effectively in his literary criticism. On the other hand, this stringent, "technomorphous" (Horstmann) and constructivist aesthetic is aligned with an apparently opposite, deconstructivist aesthetic which is reminiscent of concepts in modern chaos theory.<sup>2</sup> In this paradoxically self-subverting aesthetic, Poe's autonomous-idealistic concept of pure art reveals itself as symbolically tied back to the processes of "real" life from which it seems to be so radically removed. The coercive nature of self-fulfilling prophecies, which turn against the deliberate intentions of the human subject; the workings of occult powers within and outside of the self, which undermine the conscious agency of individuals; the radical ambivalence of extreme states of mind, in which love and aggression, triumph and fear are strangely fused and combined—such are typical constellations in Poe's stories. Motifs such as doppelgangers, the return of the deceased, being buried alive, falling into abysses, or being dragged down by life-threatening vortices, which can be found throughout his texts, illustrate the crisis of modern subjectivity precisely at the point when it seems to have finally ascended to a state of full sovereignty. Entrenched dualisms of thought are broken up and polarities such as good and evil, mind and body, the material and the spiritual, or life and death are foregrounded with extreme intensity while at the same time being shown to be interdependent in highly unsettling ways.

A quasi-metaphysical foundation for this aesthetic can be found in Poe's cosmological long poem "Eureka" (1848). In this speculative treatise, in which he incorporates what he saw as the state of knowledge in the natural sciences of his time, Poe attempts a synthesis of his poetological and philosophical ideas, according to which all phenomena of the material and spiritual world are locked in a constant battle between the powers of order and chaos. The multitude of phenomena and individuals is the result of an internal differentiation within the original oneness of a divine power, which undergoes a cosmic process of

<sup>&</sup>lt;sup>2</sup> By now, the literature on chaos theory is immense. A valuable introduction to the field of literature and chaos theory is offered in *Chaos and Order: Complex Dynamics in Literature and Science*, edited by N. Katherine Hayles, 1991.

attraction and repulsion, of expansion and subsequent contraction; this process encompasses all things in existence and all consciousness, be it on the small or large scale, and returns after each phase of differentiation to the original unity. It is in this rhythm of expansion and contraction that Poe identifies the beating of the "Divine Heart" as the decentering and recentering cosmic energy which always circles back to itself, the creative as well as destructive force of the cosmos. But this force, and this is an important point of Poe's manifesto, at the same time constitutes the innermost core of life of the individual human being: "And now—this Heart Divine—what is it? *It is our own*" (Poe, "Eureka" 587). Human fate becomes the focus of cosmic events, which it not only mirrors but actively takes part in. In this sense, in "The Tell-Tale Heart," the heartbeat of the old man which the narrator imagines to hear, but which is in fact his own, is the manifestation of a vital connective force that deconstructs the narrator's illusion of autonomy and control and returns him to the cosmic rhythm of life and death that he has violently repressed.

As esoteric as some of the ideas in "Eureka" might seem today, they point to an underlying ecological awareness of the co-agency of self-organization and entropy, of endless diffusion and connective recursivity, which shapes Poe's thoughts, his worldview, and his aesthetic—an aesthetic that is constituted in the constant subversion and reorganization of its own ordering principles. It is in this interplay between order and chaos, individual difference and transindividual unity as outlined in "Eureka," that the creative forces of the cosmos and of the artistic imagination converge, which are symbolically enacted in his texts.

Let me illustrate this in one of Poe's best-known stories, "The Masque of the Red Death," first published in *Graham's Magazine* in 1842. The form of this story can be seen as a consistent application of Poe's theory of short narration as he had outlined it in several essays, notably in his review of Nathaniel Hawthorne's *Twice-Told Tales*. The most important elements of this much-cited theory are stringency of composition, functionality of parts, construction from the end ("pre-established design"), and the achievement of a "certain unique or single effect" (Poe 450), which by means of the connotative significance of the minutest details, suggestively enhances the symbolic undercurrents of textual meaning. These elements, together with the criterion of shortness itself—which allows for the reading of the text in one sitting without distractions from outside—create

the unity of aesthetic experience in such a way that, as Poe states, "the soul of the reader is at the writer's control" (Poe 450). The dynamics of such storytelling, however, is not performed in a linear fashion, as the example of "The Masque of the Red Death" shows. It is only achieved through the presence of a chaotic counter-principle which subverts the very structure that helps to get the story under way. This dialectic of construction and deconstruction, of self-generating and self-annihilating processes, is the central aesthetic dynamics at the heart of this narrative by Poe, as of many others of his stories.

Here is a brief plot summary: Prince Prospero retreats with his court from the Red Death, a particularly insidious form of the plague, to a remote and fortified monastery, where he severs all connections to the outside-world. While the rampant epidemic takes its toll on the population outside, the inhabitants of Prospero's castle are living in extravagant luxury. Merry celebrations take place, which come to a climax in a masquerade, a great display of splendor with fantastic and eccentric masks. Every full hour of the evening, the striking of a clock interrupts the rhythm of the dancers; yet after a short break, the celebrations continue with even more fervency. As the clock strikes midnight, a hitherto unnoticed mask, disguised as the Red Death himself, has mingled with the crowd. Prince Prospero wants to challenge the strange guest, from whom all other masqueraders recede, and after chasing him through the seven different-colored rooms in which the ball takes place, the Prince faces the stranger in the last room, draped in black. To the terror of all present, it turns out that the mask is empty and no real person is hiding behind it. The prince and his court drop dead, the lights go out, and the Red Death takes up rule over the whole country.

The summary already makes clear that this is, according to Poe's standards, an apparently straightforward and easily accessible story: a parable of universal human appeal, which appears rather traditional both in subject matter and authorial style of narration. In its theme of *superbia*, it is reminiscent of medieval morality plays, as well as of tales of *vanitas* relating the hubris and fall, the pride and punishment of princes. As far as the motif of the plague is concerned, the story picks up on traditional ideas of the Black Death as a scourge and apocalyptic *memento mori*, reminding humans of their mortality and freeing them from their illusionary infatuation with the world, which blinded them to their higher destiny. In the motif of the *theatrum mundi*, which

dominates the narrated world and underlines its phantasmagorical character and inner lack of substance, the story makes use of a time-honored motif of literature, which among others features prominently in plays by Shakespeare, whom Poe admired and from whose play *The Tempest* he probably took the name of his protagonist Prospero.

A closer look, however, reveals that the apparently plain surface of the narrative hides a degree of complexity which turns out to be as intricate and multi-layered as in any of Poe's stories. The anachronistic structure of medieval allegory is a kind of stylistic "mask" of the text behind which, upon closer inspection, we detect always new, interconnected layers of meaning and reference. In a first, conventional sense, the story can be read as a gothic tale of horror, which contains the typical ingredients of the gothic—the remote castle, the uncanny rooms, the inhabitants' spectral masks, the ghost's appearance at midnight, and the horrors of the eventual collapse of this sinister-fascinating world. The story can also be read philosophically as a story about the destruction of illusionary systems of cultural power and duration by their own, internal instability, by the inevitable presence of time in their quest for stability and timeless substance. The story can be read psychologically as a confrontation of the forces of chaos, fear, and death which elude the grasp of the self-aware subject and its rational mind, as a psychomachia between the competing mental powers of self-preservation and self-destruction personified by Prince Prospero and the Red Death, respectively. It can furthermore be read sociologically as the allegory of a dominion of wealth, luxury, and consumption hermetically sealing itself off against a world of poverty left to its fate. It can be read historically as a reflection of Poe's observations during the great Baltimore cholera epidemics which he witnessed in 1831.

The story can be also read as cultural criticism, a comment on the hectic, capitalist pursuit of happiness and prosperity to which Poe's contemporaries had committed themselves under the guidance of "Prince Prospero"—a telling name in this sense. Klaus Lubbers has interpreted this culturally subversive dimension of "The Masque of the Red Death" more concretely in relation to the theme of the theme of America (Lubbers 1996). Prince Prospero and his followers thus come to stand for the white settlers in the New World, while the castle represents the construct of their religious, imperial utopia of power (the "city upon a hill") which, in the textual process, is destroyed symbolically by the excluded counter-

forces personified by the Red Death (Indians, the land, other cultures and social classes). The story can also be read as an example of a "dark ecology," in which the infinite cosmic interconnectedness of existence, as personified in the Red Death, triumphs against all binaries erected by human culture, such as between inside and outside, self and other, mind and body, health and sickness, artificial and natural—not as a positive, revitalizing force but as an uncanny force of inescapable unification, which collapses all boundaries between the human and the nonhuman domains and returns the exclusionary structures of civilization to an undifferentiated primordial unity of being.

For the cultural-ecological reading of the story I am proposing here, let us look more closely at the form and structure of the text. Its introductory part establishes the theme and situation. The first paragraph describes the ravaging of that peculiar plague whose special sign is blood: "Blood its Avatar and its seal—the redness and horror of blood" (Poe 124). From the very beginning, Poe symbolically links the motif of Death with the motif of Life—blood and notably chooses not the usual form of the Black Death but the somewhat oxymoronic one of the *Red* Death. The second paragraph describes Prospero's retreat to his castle, the barricading of the doors, and the construction of a protected world of happiness, which introduces the basic structural opposition between inside and outside, health and sickness, life and death. From this point onwards, the narrative process increasingly accentuates the opposition between these two poles but also their affinity to one another, until they are fused in the great catastrophe of the ending. The story traces the stages of this escalation throughout the various domains of the imaginary world, which at the same time correspond to the basic categories of literary fiction.

At first, the story's focus is on *space*. After the introductory part, it describes the rooms in which the masked ball takes place. There are seven rooms stretching from East to West, but they are so irregularly arranged that it is impossible to look into more than one of them at the same time. Each of the rooms is decorated in another color, ranging from blue to purple, green, orange, white, violet, and finally, in the seventh, westernmost room, black. In all of them, the colors of the tapestries and windowpanes are identical, except in the seventh room, where the black walls stand in contrast to the "deep blood color" (Poe, "Red Death" 125) of the windows. Thus the story's spatial composition reflects the initial opposition between life and death while at the same time emphasizing

their internal connectedness. The number seven alludes to the seven days of the Biblical genesis, but this allusion is inverted in the order of the rooms, which are arranged from East to West in a sequence leading through the spectrum of colors to the blackness of the seventh room, and reverses the Biblical path "from darkness to light" into its opposite, "from light to darkness." Moreover, in the last room, the combination of the black walls and the red windows synecdochally objectifies the story's central theme and already anticipates its ending. The "Red Death"—the principle of the inextricable interconnectedness of life and death—is already inscribed into the very architecture that Prospero himself created and that is supposed to uphold their separation.

The next aspect is that of *time*. Poe develops it by means of the gigantic black clock at the western wall of the last room, whose hourly strokes sound so ghastly that all the dancers freeze for a moment, just to indulge in laughter and merriment the more fiercely afterwards. Their ever-changing rhythm of standstill and movement, paralysis and revitalization can be read as another expression, this time on a temporal plane, of the opposition of death and life which more and more intensifies and at the same time breaks down with the approach of midnight. Next, the focus shifts to the characters. We are confronted not with individuals but with a strange crowd of masqueraders who appear as living dreams, as personifications of a deformed imagination in a grotesque theatrum mundi. The masque, in which "beat feverishly the heart of life" (Poe, "Red Death" 127) and in which the affirmation of life finds its highest intensity, thus draws the energy that fuels its hectic pace and grotesque unreality precisely from those forces of chaos and self-dissolution that it opposes. And it is only consistent that, when the Red Death itself appears with the twelve strokes of midnight, he does not intrude upon this world from the outside but emerges from the inside, from the crowd of masks itself.

And thus, too, it happened, perhaps, that before the last echoes of the last chime had utterly sunk into silence, there were many individuals in the crowd who had found leisure to become aware of the presence of a masked figure which had arrested the attention of no single individual before. (Poe 128)

The mask of the Red Death is no longer merely an external opposition to but rather the symbolical emanation of the principle on which this world has been built from the very outset.

The appearance of the Red Death is also the turning point of the *plot*, which is followed by the confrontation between the Prince and his opponent. Once again, the conflict is staged contrastively—the Prince, full of passion, anger, and violent movement; the Red Death, mechanical and controlled, his measured steps like the strokes of a pendulum. But at the same time, an internal affinity is indicated in the elevated position of the two opponents, as well as in the color red, which appears on the Prince's angry brow and thus links him with the Red Death. The climax at the end, which takes place in the black room with its mahogany clock, finally leads to the breakdown of all opposites and to the destruction of the imaginary world. "And the Red Death held illimitable dominion over all" (130). This is the final sentence of the story. Instead of a separate human domain of life, health, and culture on the one hand, and of a nonhuman domain of death, sickness, and nature on the other, the result is a dissolution of all boundaries into an undifferentiated unity, which is also a universal wasteland of eternal oblivion (Taylor). In its recursive staging of order and chaos, of death and life as complementary aesthetic processes, the story illustrates the "principle of bio-thanatic inscription" that according to complexity theory underlies the self-organization of living systems as the "mutual nourishment of individual existence and of the eco-organizational cycles of life & death ..." (Morin quoted in Kagan 213–214).

Poe develops his subject, the breakdown of order by the forces of chaos, and the violent reconnection of what is separated in an anthropocentric civilization, in a remarkably structured and complex way, based on the principle of continual intensification. Not only does he demonstrate impressively the "unique or single effect" that he expects from the art form of a "short prose tale," but he successively presents the basic categories of which a short story is composed, namely, narrative situation, space, time, characters, and plot. The story is an autopoetic staging of the forces of emergence and disappearance, of differentiation and disintegration, which connect macrocosmic with microcosmic processes and are the source and medium of Poe's artistic creativity. In accordance with the eco-apocalyptic theme, the literary means which Poe employs are used up at the end: the clock comes to a halt, the chandeliers expire, the self-enclosed world of human civilization dissolves into undifferentiated posthuman infinity. The text, like the imaginary world presented in it, is like a self-consuming artifact which decomposes itself in the

very process of its aesthetic composition and thereby becomes analogous to the interconnected processes of life and death that it represents. It is from this very confrontation of the forces of chaos and dissolution that Poe's literary narratives develop their fascinating power, both in terms of their artistic virtuosity and in terms of the intense participation of the reader in the creative process of the text. This tension between composition and decomposition, structural closure and open process, individual singularity and infinite interconnectivity of the artwork is realized in radical, high-energy forms of aesthetic co-existence in Poe's work. It combines in unique ways aesthetic principles of classicism and romanticism while already anticipating modern and postmodern modes of writing. Artistic beauty, to Poe, could only be achieved if it aligned itself with the experience of chaos, for which he was unusually susceptible. In his autonomous, holistic conception of art, Poe confronted the optimism of the American Dream with a darker dream, which expressed in apocalyptic images the deeper fears, anxieties, and uncontrollable interdependencies between human and more-than-human existence; these the US society had discarded in the wake of its historical belief in civilizational progress and control, but they have returned with renewed urgency in ecological thought.

Again, the triadic functional model of cultural ecology can be seen to apply in, the story: its narrative process builds on a culture-critical metadiscourse that exposes the internal contradictions of a self-enclosed system of civilizational life, which strictly separates inside and outside, culture and nature, life and death; it develops its counterdiscursive force from semiotically empowering the exclusions of that civilizational system, which gain their spectral disruptive presence in the phantasmatic figure of the Red Death; and it brings together the civilizational system and its exclusions in a process of irresistible and inexorable reintegration. This cultural-ecological dynamics of the story, as has been seen, is not just an aspect of its thematic content but is transmitted through its aesthetic organization on all levels of the text, being inscribed into the whole formal composition of the narrative in an escalating rhythm of repulsion and attraction, contraction and expansion, order and chaos, which link the domains of life and art through the ecological principle of infinite interconnectivity.

Order and chaos are contradictory but also mutually conditioning principles shaping the narrated lives and aesthetic composition not only in Poe's "Masque of the Red Death" but, each in its distinct ways, of other core examples discussed in this book. The "genesic force of chaos at the root of any creation" (Morin quoted in Kagan 214) manifests itself in many of the texts as a condition of their both deconstructive and reconstructive aesthetic processes: in The Scarlet Letter in the anarchic disorder of Dimmesdale's mind after his reunion with Hester in the forest in the chapter "The Minister's Maze," an unsettling experience of "mutability," "transformation," and "revolution" of his inner life (232-233), which nevertheless translates itself into the ordering impulse and powerful rhetoric of writing his sermon (240); in "Bartleby" in the dysfunctional behavior of the two scriveners that structurally prefigures the subversive repetitiveness of Bartleby's resistance against the functional uniformities of "Wall Street;" in Moby Dick in the chaotic dissolution of Ishmael's self when he enters his imaginary adventure at sea, which arranges itself in forms of new patterned order as in the autopoetic passage already quoted above: "... in the wild conceits that swayed me to my purpose, two and two there floated into my innermost soul, endless processions of the whale ..." (Melville 26–27); in *The Awakening* in the chaotic turbulences overwhelming Edna's consciousness in her rapturous response to Chopin's music, which is an aesthetic counterpart to her bodily response to the waves and the "voice of the sea" that is the leitmotif and ordering principle of the novel's rhythmical composition; in *The Sound and the Fury* in the chaotic stream-of consciousness of the Compson brothers, from which nevertheless the aesthetic order and narrative flow of the novel emerges; in *Beloved* in the chaos of radical alienation that is expressed and at the same time transformed into the multi-layered aesthetic polyphony, jazz rhythm, and storytelling magic of the narrative.

# Connecting Patterns and Creative Energies

The complementary, mutually conditioning relation of the contradictory forces of order and chaos in both ecology and aesthetics has already inevitably led to another central issue in the transdisciplinary field of cultural ecology, the question of creativity, which I will address explicitly in this chapter. In all cultural ecosystems, creativity is an important element, even though the modes and degrees of creativity are quite distinct in different fields. What seems clear, however, is that art and literature constitute a cultural ecosystem in which creativity is given a special place. They represent an "experimental field of cultural possibilities" and a "storehouse and innovational space for all sorts of creative processes, which are needed everywhere in cultural systems for the renewal of their dynamics and continued evolutionary force, but which can be relatively freely performed only in art" (Finke 2003: 272, my trans.). This is due to the "depragmatized" (Iser) status of literary texts, which distinguishes them from pragmatic forms of discourse in economy, law, politics, or the technological sciences, in which an immediate, often highly standardized relation exists between text and meaning, knowledge and action, discourse and power. In the imaginative space of cultural creativity provided by art and literature, processes of radical deconventionalization, defamiliarization, and defiguration but also of creative recombination and reconfiguration are employed to continually renew ossified forms of thought, perception, communication, and imagination.

#### Cultural ecology and literary creativity

In some of the most interesting recent contributions to creativity research, the creative processes which are staged in imaginative texts are related to fundamental processes of life itself. In a general sense, according to the quantum physicist David Bohm, the "latent creativity of the human mind" corresponds to the "presence of creativity in nature and the universe at large" (Bohm 1). With a more concrete focus on art and literature, Wendy Wheeler uses insights from various disciplines to illuminate the connection between natural and cultural creativity. Wheeler brings together evolutionary biology, eco-phenomenology, cultural history, and the semiotics of Charles Sanders Peirce to apply to literature the approach of biosemiotics which has been developed since the 1960s by Friedrich S. Rothschild, Thure van Uexküll, Thomas Sebeok, and Jesper Hoffmeyer among others (Hoffmeyer 2008) and which is in many ways compatible with and relevant to clarifying and specifying some of the basic elements of a cultural ecology of literature. The sciences and literary studies appear as "complementary epistemologies" (Westling 2012: 75) in the context of recent developments in the biological life sciences, which are moving from an "Age of Reduction" to an "Age of Emergence" (Wheeler 2006: 12). This has made it possible to find new common ground with the human sciences in terms of a shared knowledge of "complex structures of life" and of creative evolutionary processes that characterize nature as well as culture (13). Nature in this view is no opposite of cultural concepts of creativity and cooperation but is itself driven by multiple processes of semiosis and co-evolutionary emergence. Rather than solely a principle of monogenetic selection and dominance, this "symbio-genetic co-operative communication" is fundamental to all life and makes it possible to see in nature a basis of "human sociality" and of the "fundamentally social nature of human existence" as well (Wheeler 2006: 12).

Natural and cultural evolution, though qualitatively different through the higher degree of complexity and "semiotic freedom" that has emerged in human culture (Wheeler 2006: 153), are nevertheless linked by the basic insight of biosemiotics that "all life—from the cell all the way up to us—is characterized by communication, or semiosis" (Wheeler 2011, 270). This semiotic dimension of life is evidenced in the functional cycles of semiotic loops "flowing ceaselessly between the *Umwelten* (semiotic environments) and *Innenwelten* (semiotic inner worlds) of creatures" (272)—concepts which Wheeler borrows from the biologist Jakob von Uexküll, one of the most influential precursors of cultural ecology. Creative processes in nature and culture share an element of agency and improvisational flexibility,

with which they respond to changing demands of their environments by rearranging and recombining existing patterns of life, communication, and interpretation. As in the "reading" of the DNA structure by proteins, signs are constantly read in bodily natures within a survival-oriented process, which transforms itself into the various semiotic communication levels of organisms and ecosystems.

What is of special significance in our context is that this transference of similarities across different scales of living systems in their survival-oriented forms of self-organization suggests that, as Wheeler points out, processes of creativity in life can be likened to the operation of metaphors on the level of language, discourse, and art. The "meta-phorical" reading of one form or pattern and its transference to another is at the core of creative activity both in processes of life and in processes of literature and art, and "creation via metaphor" (275) constitutes a common ground between them. In this sense, the (auto-)poiesis of life becomes an analog for the (auto-)poiesis of the aesthetic, since in fact the "human grasp of the world is essentially aesthetic" (276). Art is thus also always implicitly self-reflexive, constituting a cultural medium which thematizes the "mysteries of human meaning-making itself" (276). This means that "art, and especially art in language, remains the best place of our hopes of self-understanding" (276). Literature becomes a paradigmatic cultural form representing the play of similarities and differences which make up the ecosemiotic processes of life itself. The reflexive interactivity between mind and body, culture and nature, constitutes one of the most characteristic sites and sources of literary creativity. This interactivity combines a cognitive with an affective and ethical dimension. It involves a form of "cognitive biophilia" (Lawrence), an affirmative relation to all shared life on earth, which Emily Dickinson locates in an aboriginal attractor of "love" that is driving both biological and poetic creation:

Love—is anterior to Life— Posterior—to Death— Initial to Creation, and The Exponent of Earth

Wheeler's ideas resemble in significant aspects the ways in which Gregory Bateson views the relation between ecology, metaphor, and poetic language.

Bateson likewise suggests a similarity between the processes of life, as they are characterized by feedback relations and infinite structural analogies, and the basic poetic form of speech, the metaphor. His own ecological thinking, he states, follows a metaphorical rather than a classical-logical principle, and in this respect, his mind functions like the mind of a poet, focusing not on the generalizing logic of the subject but on the analogies which can be constructed between different spheres and phenomena of life on the basis of shared predicates. Relational, metaphorical thinking, rather than syllogistic reasoning, corresponds to the principles on which the living world is built and on which an ecology of the mind can orient itself. An example of a traditional, subject-centered syllogism is:

All men die Socrates is a man Socrates dies

Bateson replaces this classical syllogism by what he calls "[a]ffirming the consequent" or "syllogism in grass":

Grass dies Men die Men are grass

According to Bateson, this meta-phorical procedure, which relates domains separated in traditional categories of thought to each other on the basis of common predicates, is closer to the processes of life, which are characterized by structural similarities and shared properties, than the abstract classifications and exclusionary boundary-lines of logical-conceptual thought. It is a form of detecting "connecting patterns" between different spheres of the living world (Bateson 2002: 7 ff.), which also describes his own relational form of ecological thought:

[I]t seemed to me that indeed this was the way I did much of my thinking, and it also seemed to me to be the way the poets did their thinking. It also seemed to me to have another name, and its name was metaphor. Metaphor. And it seemed that perhaps, while not always logically sound, it might be a very useful contribution to the principles of life. (Bateson 2002: 240–241)

Bateson's "syllogism in grass" raises immediate associations in students of Anglo-American literature. The correspondence to Bateson's insight is perhaps most striking in Walt Whitman's collection of poems, *Leaves of Grass*, in which the title already establishes the central analogy between man and grass that is explored in ever new variants in the texts and thereby becomes a main source of their poetic energy and creativity. In "Song of Myself," for example, grass alternately becomes an expression of the inner state of the poet, a hieroglyph of the creation, a sign of democracy, a symbol of the cycle of death and rebirth, and an analog to poetic polyphony ("O I perceive after all so many uttering tongues" 26). It is the basis for ever new metamorphoses of the self and the world in which the poet, too, includes himself and which he passes on as his testimony to his readers: "I bequeath myself to the dirt to grow from the grass I love/ If you want me again look for me under your bootsoles" (78). "Men are Grass"—Bateson's ecological syllogism is transformed by Whitman into an ecopoetic process, which at the same time extends and expands the metaphor into a source of constant metamorphosis.

# Literary creativity as translation of natural into cultural energy

Several times so far, the term "energy" has been mentioned. Its significance in literary ecology has first been pointed out by Wilhelm Rueckert, and its various uses are increasingly finding attention in ecocritical studies (Slovic, Bishop, and Lyndgaard 2015). As the cultural ecologist Peter Finke maintains, descriptions of cultural processes do indeed require the concept of energy. As has been outlined, Finke's evolutionary cultural ecology appears particularly promising for an interdisciplinary dialogue with literary studies, because it overcomes the biological determinism of traditional ecology and recognizes the relatively high degree of independence that psychic, mental, and cultural phenomena have gained in the evolutionary process. Unlike logical space, according to Finke, ecological space "is characterized by webs of complex energetic relationships, and the unceasing processes by which it is shaped are feedback processes: something acts upon something else, and the result of this process, together with additional factors, in turn acts back upon the source"

(Finke 1998: 130, my transl.). This energy, it is true, is originally derived from physical sources (most fundamentally, the all-sustaining energy of the sun) but is transformed in the cultural process into various forms of social, psychic, or creative energy. How these forms of cultural energy can be described seems to be still open to further research. But they are a factor which must be included in any adequate account of cultural, and therefore also of literary, phenomena. Art and literature, indeed, appear as media in which the sources of cultural energy can be activated and expressed in particularly intensive and productive ways. This seems to be connected with specific properties of the aesthetic as it has emerged in a long process of cultural evolution and has grown, with its historical emancipation from the authority of politics, religion, philosophy, and science, into a significant factor in the shaping of the ambivalent dynamics of modernization.

This can again be illustrated in exemplary ways in the poetry of Whitman, where the concept of energy, quite explicitly, plays a crucial poetological role. At the beginning of his "Song of Myself," he describes the source from which his poetry is to spring as "nature without check with original energy" (26). In this phrase, he names an original creative power which has its roots in life itself and which is to be translated, through procedures of metaphorization, metamorphosis, and the pluralization of linguistic signs, images, and meanings, into poetry. Poetry in this view, then, is characterized by its purpose and ability, as it were, to stage in ever new imaginative scenarios the symbolic transformation of primary, natural, into secondary, psychic, and cultural energy while at the same time maintaining the awareness of and feedback relationship to those primary forms of energy. In the interplay between these poles, an important source of literary creativity seems to be located which is closely connected with its cultural function, and which, as a paradoxical, prediscursive or transdiscursive mode of discourse, distinguishes it from other forms of textuality.

At the end of "Song of Myself," where the individuality of the speaker merges with and dissolves into the metamorphic cycle of nature, and where the productivity of the poetic process simultaneously explodes into cascades

<sup>&</sup>lt;sup>1</sup> This applies, *mutatis mutandis*, also to other media (such as music, film, etc.) as potentially powerful forms of cultural creativity.

of ever new images, the poetic self is transformed, in one of its most striking incarnations, into a spotted hawk—into the voice of precivilizatory nature: "I sound my barbaric yawp over the roofs of the world" (Whitman 78). Whitman here radicalizes a poetological tradition which has always transgressed the boundaries of its own medium by searching for a language before language, a prediscursive knowledge before discursive knowledge. The ancient historical memory evoked by the siren-song of the nightingale in Keats; the forces of revolution and renewal blowing in Shelley's west wind ode; the awakening to a deeper self through the elemental voice of the sea in Kate Chopin's *The* Awakening; the noisy calls of the oven-bird as a second self of the poet in Robert Frost's eponymic poem; or the human animal scream "Howl" as an anarchic challenge to technocentric capitalism in Allen Ginsberg are all taken as inspirational sources for their texts, which from these very retrogressions gain their poetic productivity, differentiation, and "modern" innovative power. Whitman presents his "Song of Myself" as a "barbaric yawp" (78), an expression of the living primordial language of pre-civilizational nature itself, which transcends the limitations of cultural sign systems but nevertheless remains dependent on them in the manifold act of poetic self-articulation that the poem performs.

The cultural-ecological energy which in Whitman expresses itself in a radical-visionary way however, is not limited to romantic concepts of art but can be traced to basic aspects of literature and the aesthetic as it has developed in its historical evolution as a distinct form of cultural textuality. Even though their manifestations have changed significantly in the course of cultural and literary history, it is surprising to see to what extent those metaphorical "patterns which connect" (Bateson) natural and cultural phenomena are instrumental in shaping the aesthetic conceptions of writers from different periods. These connecting patterns belong to the domain of "buried knowledge" which, according to Bateson, art and literature make symbolically accessible, a deeper knowledge of human culture and the human psyche relating to primary processes and unconscious memories which remain inaccessible to "straightline linear causal" thinking (Charlton 107). The most important feature of this buried knowledge, which both reflects and undermines the civilizational split between mind and body, is the repressed knowledge of "our unity with the rest of the living world, our inextricably integrated membership of the family of living beings" (Charlton 107). As I have argued throughout this book, this transformative function of reconnecting the conscious semiosis of cultural discourses to a deeper biosemiotic symbiogenesis between human and nonhuman life is no special case of an explicitly environmental literature but characterizes key texts in the evolution of modern literature.

In American literature, instructive examples beyond those discussed above are: Sarah Orne Jewett's "A White Heron," in which the flight of the white heron becomes a figuration of the human self's awakening; Marianne Moore's poems, in which the biomorphic structures of molluscs and amphibians are employed as compositional forms of her poetry; Elizabeth Bishop's "The Fish," in which the alien eyes of the old fish reflect the creaturely coexistence between speaker and fish as familiar strangers ("I looked into his eyes... They shifted a little, but not/ To return my stare."); W.C. Williams's "By the Road to the Contagious Hospital," in which new beginnings are gleaned from wastelands of sickness and death in regenerative wordscapes linking linguistic and natural forms of emergence ("one by one, objects are defined."); Gary Snyder's Regarding Wave, where the fluent shapes of water, wilderness, and the human body are translated into morphologies of textual forms; Ishmael Reed's novel Mumbo, Jumbo, where the movement of Jes Grew, as a principle of wild spontaneous growth of African American jazz culture, forms a polyphonic counterdiscourse to the white supremacist monoculture of Atonism; Leslie Marmon Silko's Ceremony, where the mythopoetic Native American storyteller of spider woman becomes a webmaking force of multilayered narration; or the Native American poet Joy Harjo's "Eagle Poem," where the spiral movement of the eagle's flight becomes a compositional principle of textual form and meaning. The Batesonean "patterns which connect" natural and cultural agencies constitute a recurring feature and an ecological deep structure of literary creativity. In none of these cases, human life is simply reduced to its biological origins; rather, its kinship with other forms of life is taken as a starting-point for a radical, both fascinating and unsettling human self-exploration and is thereby activated as a source of literary creativity.

Crucial moments of personal crisis, intensity, and epiphany in literary texts are often dramatized in such couplings of culture-nature imagery, even and especially in texts of the literary avant-garde of experimental high modernism. Thus in Virginia Woolf's *The Waves*, the rhythm of waves, tides,

and times of the day provide the narrative matrix for exploring human lives as whirls within natural energy-flows. In James Joyce's Portrait of the Artist as a Young Man, his parable of the genesis of artistic creativity, one of the central epiphanic moments in which Stephen Dedalus casts off the stifling pressures of school, church, and nation and awakens to life and to his artistic calling, is when he wades in the breakwater of the Irish shore and observes a girl standing "in midstream" and gazing out to sea—a girl who, partially covered with seaweed, simultaneously resembles a seabird and is associated with the rhythm of the waves ("hither and thither, hither and thither"), metaphorically blending different forms and evolutionary stages of life. Exchanging a long mesmerizing look with this other human self within the elementary forces of other-than-human nature, the narrator is inspired to a series of metamorphic images fusing water, seaweed, bird, girl, and the petals of an unfolding rose into one connecting pattern which corresponds to the opening of his own self and the liberation of his poetic imagination—an imagination no longer defined from an elitist distance to the world but through a momentary sense of wholeness and belonging that he feels on his return to the land: "and the earth beneath him, the earth that had borne him, had taken him to her breast" (Joyce 1971: 172).

Another, albeit unsettling, example is a climactic moment in William Faulkner's *As I Lay Dying*, a chapter consisting of only one short sentence, where the young, mentally retarded boy Vardaman, unable to come to terms with his mother's death, and with the bloody killing of a fish still fresh on his mind, fuses the double shock of these apparently unrelated experiences into the statement: "My mother is a fish" (Faulkner 1957: 79). This is a truly Batesonian conclusion:

The fish died My mother died My mother is a fish

While this kind of metaphoric blending, which turns Bateson's "syllogism in grass" into a "syllogism in fish," appears to contradict conventional logic, it nevertheless intuitively grasps one of the deeper connecting patterns and undercurrents of meaning in the novel, which finds its condensed expression in the vorticist minimalism of Faulkner's one-sentence chapter.

In Seamus Heaney's poem "The Salmon Fisher to the Salmon," this analogy between man and fish, cultural and natural agency, is explored in a more elaborate and interactive way, involving a mutually intensifying boundary-crossing in which the fish is humanized and the speaker metamorphs into a fish-like being (Heaney):

Ripples arrowing beyond me,
The current strumming rhythms up my leg:
Involved in water's choreography
I go like you by gleam and drag
And will strike when you strike, to kill.
We're both annihilated with the fly.
You can't resist a gullet full of steel.
I will turn home fish-smelling, scaly.

The phrase that "We're both annihilated with the fly," of course, is another variant of Batesons's syllogism in grass, extending it from man and fish to man and fly. The dialogic form of the text creates an intimate space between human self and nonhuman other, which opens up the shared coexistence of cultural and natural agency as creative force-field of the text.

It seems to me that the frequency of such examples is due to the fact that the affinity between aesthetic and ecological processes is not external to literature, but is already implied in the very act of aesthetic representation itself, whose fundamental "generative signature" (Iser 2003) consists in interrelating and breaking down the boundaries between idea and matter, the abstract and the concrete, the intellect and sensory experience.<sup>2</sup> In staging feedback relationships between conceptual, moral, and ideological abstractions on the one hand, and concrete sensory images, emotions, and interactions on the other, literature is especially capable of representing the complex energetic processes that also characterize the ecological space (Finke 1998).

<sup>&</sup>lt;sup>2</sup> Iser (2003) uses the term "generative signature" for the different, historically changing paradigms of the aesthetic, whose most influential versions have been marked by Kant, Hegel, Adorno, and, more recently, cybernetic-functional approaches ("Von der Gegenwärtigkeit des Ästhetischen"). I am referring here to a more general "generative signature" of the aesthetic as a cultural form which is constituted by symbolic feedback relationships between abstract and concrete, conceptual and sensory, systemic-discursive and processual-prediscursive modes of textuality and as such shows a relatively high degree of constancy and validity across different historical models.

To be sure, nature and the culture-nature relationship were constructed in different ways in cultural history (Evernden 1992). Yet not least from the evidence of the texts themselves, it seems that in the history of literature, co-evolutionary adaptation to these historical-cultural changes went along with a deeper continuity, in which attention to the ongoing interaction of human civilization with elementary phenomena and processes of nature was preserved in the aesthetic forms of literary representation and communication. While non-modern conceptions of nature were historically displaced especially in the modern and enlightenment periods, "traces of them have survived in art, literature and aesthetics" until today (Goodbody 2008: 259, commenting on Böhme). If according to Fredric Jameson the historical-political world is potentially present in even the most formalist products of literary art in what he calls their "political unconscious" (Jameson), then a similar point could be made about an "ecological unconscious," which is likewise potentially present even in apparently experimental and self-referential works of literature and art.

# Cultural ecology and poetic creativity: The example of Robert Frost

In the following, I zoom in again on the work of a single writer and explore the interplay between connecting patterns and creative energies in a cultural-ecological interpretation of selected poems by Robert Frost.<sup>3</sup> Frost's poems both invite and resist a straightforward ecological reading. Ecocritical studies of his works are still rather less frequent than of other major American poets. His poems also may appear at first sight as rather inconspicuous cases of literary creativity. Different from more obviously experimental, avant-garde poems in the vein of Whitman, Ginsberg, or Ammons discussed above, his writing is shaped not by spectacular innovation by a more traditional, almost classicist sense of form, order, and proportion, reflecting a will to control over the raw material of immediate experience rather than the visible impulse to break out

The subsequent interpretations are based, in part, on my essay "Robert Frost: An Ecological Perspective." Robert Frost Review, 14 (2004): 69–85.

of conventional forms. Yet as I want to show, beneath the well-ordered surface of his language and his distanciating, ironic-reflective style, Frost's poems are shaped by creative processes that form a strong undercurrent of ecocultural meaning and significance in his texts.

Engaging with the possibilities and limits of human self-determination, Frost's poetry implies recognition of man's dwelling in nature and of the necessities of human subsistence within a life-sustaining biosphere. Its pronounced sense of place in concrete bioregional settings nevertheless simultaneously links up with larger evolutionary and cosmic references. His poems are pervaded by the presence of animals, flowers, and the varieties of the New England countryside, by references to weather, water, and earth, and the forms of its human cultivation. The relationship between civilization and nature appears in his poetry as an interactional field, a borderline sphere of contact, tension, and conflict, a necessary place of human self-definition. Stars, the moon, clouds, the seasons, day and night, snow and rain, woods, trees, brooks, blueberries, apples, grapes, flowers, birds, butterflies, ants, snakes, spiders, hornets, bears, and more, appear with remarkable frequency and variety in his poems. They do not just form a mirror or backdrop to human interests but are also part of a shared world, manifestations of an all-pervading natural presence that is vitally interrelated with human life even though it can never fully be contained within its categories. Natural phenomena and creatures are often presented in metaphoric similarity to human contexts, whereas human beings are defined through their affinity to natural processes. Animals, even small and apparently insignificant animals, appear not as inferior to but often as alter egos of the human speakers or actors in the poems, whose behavior, feeling, or even thinking show clear analogies to human experience, with the effect that the boundary between human and nonhuman creatures, though not completely abolished, is frequently blurred.

Nonhuman life, however, is not idealized in Frost's poetry but recognized in all its ambivalence between beauty and cruelty, creative and destructive forces. Robert Faggen has noted the considerable influence of Darwin and the theory of evolution on Frost's poetics, in which cultural and natural history are indissolubly intertwined and in which the world, as well as the living organisms trying to survive within it, are presented in a process of constant adaptation

and change. Frost's poems convey, as Faggen observes, "the romantic sense of change but stripped of endless possibility" (Faggen 8). Change is real and irreversible; it is the change of evolutionary struggle but also of seasonal and generational cycles, an ongoing process of recurrence, variation, and transmutation. Established hierarchies are questioned, and "the small, the minute, and the lowly are revealed to have great power" in the evolutionary process—and in the poetic world of Frost (Faggen 12).

Let me look as a first example at the creative processes linking human and nonhuman life in the poem "The Tuft of Flowers" from A Boy's Will (Frost 30–31). The speaker comes to an empty field where the grass has been mown, in the morning dew, before sunrise. The grass is leveled, and is drying in the sun. The mower has left, and the speaker, who looks in vain for him as for his only company, feels his loneliness, and in a sweeping generalization, declares this negative state, this absence of company to be the fundamental condition of human existence: "And I must be, as he had been,—alone,/ 'As all must be, I said within my heart, 'Whether they work together or apart" (l. 8-10). As if in answer to this disillusioning conclusion a butterfly passes him, bewildered and looking for the flowers that had grown there the day before and are now withering in the sun. "He," the butterfly, searches for the lost flowers in a way similar to that in which the speaker before had searched for the vanished mower. The butterfly is personified and humanized as a kind of male persona or animus—as the use of the personal pronoun underlines—and in turn draws the speaker's attention to the lively sphere of the natural world, the drama in miniature of loss, crisis, suffering, search, and disorientation through which the butterfly must go because of the utilitarian human intervention in and cultivation of the nonhuman world. He, the butterfly, is "bewildered" (l. 12), and "[s]eeking with memories grown dim o'er night/ Some resting flower of yesterday's delight" (l. 13-14); his flight goes "round and round" (l. 15), and then again "he flew as far as eye could see,/And then on tremulous wing came back to me" (l. 17–18). The butterfly captivates the poet's attention by his unusual, irregular, desperately circular movements through the air.

Just as the speaker again thinks about the general, negative implications of the animal's apparently futile search (that there are questions that have "no reply" (l. 19)—that the world does not correspond to our desire for

meaning) and wants to "turn" back to his work of "turning" the mowed grass for better drying, the butterfly himself makes another unexpected "turn," leading the speaker's eye once more away from his intended work to a tuft of flowers by a brook side spared by the scythe: "But he turned first, and led my eye to look/At a tall tuft of flowers beside a brook" (l. 21-22). In this serial experience of ever new "turns," the speaker's instrumental perception of nature based on his work routine and the unquestioned subordination of nature to man's purposes is interrupted again and instead directed to a spot of originary, untouched nature: "A leaping tongue of bloom" (l. 23), which apparently was left standing by the mower from sheer enjoyment of its beauty. As the medium of a preverbal language translating natural creativity into poetic creativity, this "leaping tongue" becomes a source of cognitive biophilia and of its poetological articulation in the text. It is significant here that the spot is discovered for the poetic self through the instinct of survival that guides the butterfly to the flowers. The butterfly, an ancient symbol of metamorphosis, resembles an unconscious mentor-figure that leads the speaker to his discovery of that residue of natural life and productivity which has escaped the "leveling" (l. 4) of civilizational use by an irrational urge of preservation. The visible companionship of the butterfly evokes the speaker's invisible companionship with the early morning mower. An individualistic anthropology is transformed into a communicative anthropology through the encounter with the improvisational creativity of self-organizing life incarnated in the butterfly and the tuft of flowers. The renewed relationship of culture to nature becomes an inspiration for the renewal of the relationship of human beings to each other. The deeper awareness of and restored relationship to nonhuman life within the text helps to expand and redefine the understanding of human life as well.

The poem shows once more how the function of literature as cultural ecology is inherently tied up with the question of poetic creativity. For Robert Frost, as for cultural ecologists, this connection was expressed in his theory of metaphor. He saw metaphor as the central poetic activity, which, in a mutable world without firm ground, can itself only be put to temporary use. This constantly shifting process of metaphor-making and unmaking is precisely what brings poetry closer to life, because metaphors are a way of interrelating in ever new ways what remains separated in conceptual knowledge—ideas and

emotions, intellect and instinct, mind and matter, the human brain and the natural world:

This is the beauty of it. It is touch and go with the metaphor, and until you have lived with it long enough you don't know when it is going. You don't know how much you can get out of it and when it will cease to yield. It is a very living thing. It is as life itself. (Frost, 1995e: 723–725)

In a satirically inverted form, this metaphoric process connecting cultural ecology and poetic creativity is illustrated in Frost's poem *Etherealizing* from his late collection *Steeple Bush*.

#### Etherializing

A theory if you hold it hard enough
And long enough gets rated as a creed:
Such as that flesh is something we can slough
So that the mind can be entirely freed.
Then when the arms and legs have atrophied,
And brain is all that's left of mortal stuff,
We can lie on the beach with the seaweed
And take our daily tide baths smooth and rough.
There once we lay as blobs of jellyfish
At evolution's opposite extreme.
But now as blobs of brain we'll lie and dream,
With only one vestigial creature wish:
Oh, may the tide be soon enough at high
To keep our abstract verse from being dry.

In the poem, the theory of human progress is ironically contrasted with the regressive implications of abstract civilized existence. This contrast is specifically tied to the loss of poetic creativity. The encounter between the rational mind and a prehistoric state of nature is quite central to the poem. Yet it is not, as in "The Tuft of Flowers," an imaginatively staged "real" encounter. Rather, it is enacted solely on a metaphorical level. The first important image concerns the illusion of the mind which frees itself entirely from the body. This parodistic subversion of the human ambition to become entirely autonomous from nonhuman nature is ironically described in the image of the sloughing of a snake: that is, an image of the self-regeneration of life within the natural

biosphere. This analogy, however, is then eroded from within by showing that the body, like the skin of the snake, decomposes and withers away. Unlike the snake which is being reborn, the human mind, cut off from its own natural basis, becomes passive, immobile, and helpless. While it is "etherealized" in its flights of abstractions into a bodiless brain and thus presumes to have reached the highest stage of evolution, it is simultaneously reduced in its vital functions to a primitive state at the beginning of evolution. In a striking and almost surrealist fusion of images, humanity as pure brain is visualized as lying on the beach with the seaweed like jellyfish. Humans here transmutate back into an undifferentiated state akin to early organisms, "[at] evolution's opposite extreme." Just as the project of civilizational progress aims to dissolve the body into pure mind, so the poem, in this sarcastic inversion, reduces the mind to the raw physical matter of the brain. As the only remaining part of the dismembered human body, the brain becomes all the more exposed to and dependent on the forces of nature from which it has tried to cut itself off. The "blobs of jellyfish" have become "blobs of brain," with no significant external difference and with only one rudimentary vital instinct left—the hope for the next flood, which will keep them from drying. In a poetological turn of the metaphor, these blobs of brain will need the tide, the element of water from which life once emerged, to revitalize the dry writing that this abstract mind produces. The metaphoric process constantly shifts from mind to nature, from abstract cultural to concrete natural phenomena, which it juxtaposes and transforms into each other in such a way that their indissoluble interconnection is part of the poem's evolving message. In its critique of civilization's illusions of separation and supremacy, the poem simultaneously reactivates the elemental energies of life for the regeneration of poetic creativity. The setting of the poem on the seashore, and the image of the tide and the waves as elemental forces of nature, move the boundary of culture and nature, into the symbolic center of the text, staging that boundary as the site from which the renewal of cultural vitality and creativity can alone be imagined.

If *The Tuft of Flowers* is a celebratory example of the ethical potential of biophilia, and *Etherializing* a critical parody of civilizational regression, *The Death of the Hired Man* from *North of Boston* explores the interconnectedness of life and death as intrinsic part of an ecopoetic knowledge which overcomes social, cultural, and communicational boundaries. The poem is composed

in the form of a narrative dialogue between a farmer and his wife about an old migrant farmhand, who has come back after a long absence, ostensibly to reapply for a job in spite of his notoriously unreliable work habits. The farmer's mentality is shaped by his superior position in a free market system of hired labor that defines the value of human beings solely according to their efficiency. The hired man who has returned to the place of his former work is no longer needed in his view: he is undependable and does not function well enough anymore. The unexpected "homecoming" of the old man however simultaneously triggers a counter-discursive move, which is explicitly associated with the farmer's wife in a liminal situation that activates an alternative form of knowledge to instrumental reason and interrupts the farmer's unquestioned routines of life, thought, and communication. The hired man is a vagrant and social outcast who does not fit into any categories, who leads a nomadic form of existence, unpredictable and unreliable but with a concrete knowledge of natural processes (e.g., he can make hay in heaps resembling bird nests and can find water with divining rods). This knowledge, which he cannot adequately verbalize, is shared by the farmer's wife, who not only speaks up for the hired man but has an intuitive sensorium for the elemental cycles of nature, whose influence she is able to translate into a special communicational sense, into the inaudible music of intense emotional contact:

Part of a moon was falling down the west,
Dragging the whole sky with it to the hills.
Its light poured softly in her lap. She saw it
And spread her apron to it. She put her hand
Among the harp-like morning-glory strings,
Taut with the dew from garden bed to eaves,
As if she played unheard some tenderness
That wrought on him beside her in the night. (l. 103–110)

There are clearly ecofeminist elements in this scene, traces of the Magna Mater myth in the woman's name, Mary, and in the gathering of the moonlight in her lap. But this does not imply that reductive binary clichés of man/ culture/ mind/ rationality versus woman/ nature/ emotion/ intuition are reinscribed. Far from it: the poem is not merely about the question of mind vs. emotions but rather about *different forms of knowledge*, which are negotiated in the form of a contrapuntal narrative dialogue. Moreover, a clear affinity is established

between the farmer's wife and the hired man in terms of that deeper intuitive knowledge of culture-nature interdependency. Rather than reproducing inherited gender binaries, the poem displays a form of cross-gender sensibility which undermines, expands, and transforms the boundaries of knowledge from different intersectional perspectives (gender, class, age, death, nature). The poem mainly consists of the dialogue between husband and wife outside the house, while the hired man, exhausted from his journey, is asleep inside. The hired man is an absent presence who only appears in the indirect form of Mary's and Warren's narratives. This indicates that the poem is also about the relationship between Mary and Warren, their different mentalities and ethical orientations, as well as the everyday routines and tensions of their married life. Their response to the challenge of the old man's visit however seems to entail a tentative change, which is indicated by the fact that the husband has for the moment accepted the hired man's presence within his home. At the end, Warren goes inside to look for the uninvited guest in his house and comes out again to tell his wife that the old man has died: she, however, already knows.

The Death of the Hired Man is a poem about a dignified form of death—not as a spectacular or merely shocking event but rather a quiet dying which gains its meaning from the others' acceptance of the old man's self-interpretation, his self-staged form of departing from life. The farmer's wife knows from the beginning that the hired man has come "home" to die, sharing with him a deeper knowledge about death as an inseparable part of life that is also expressed in the imagery of Mary's siren-like, moon-inspired inaudible music, in which the end of the night coincides with the beginning of a new day. The wife's intuitive empathy with this human other is conveyed as part of a more universal connectivity with the nonhuman other, which is made accessible through the translation of the cosmic wavelengths of natural creativity into the rhythms of poetic creativity.

In this, as in other poems discussed above, literature acts as a transformative ecological force in the texts. Connecting patterns release creative energies, and creative energies produce new connecting patterns in a process that continually opens up spaces of imaginative participation for the reader, in which culturally occluded knowledge can be actualized, and the separated domains of mind and matter, conscious and unconscious, human and nonhuman life, can be brought together in personally enriching and collectively significant ways.

#### Matter and Mind

#### Cultural ecology and elemental poetics

As has been seen in the preceding analyses, literary creativity frequently emerges from metaphorical translations between the domains of nature and culture, body and text, matter and mind in mutually conditioning interactions between order and chaos, destructuring and restructuring forces. This process can be illuminated from another productive angle when we look at typical, frequently recurring sources of such metaphors, one of which are the classical four elements. The theory and poetics of the four elements constitute one of the significant linkages of modern thought, language, and literature to the ancient world. As Macauley demonstrates in his comprehensive survey Elemental Philosophy, the four elements of earth, fire, air, and water have substantially shaped the history of culture and philosophy and, while they receded almost into oblivion in later modernity, nevertheless have continued to influence language, philosophy, art, and literature in subliminal ways. In ancient Egypt and Arabia, in Greek philosophy, in medieval alchemy and medicine, these four elements were considered to constitute the material and spiritual substance of the world. The number of four elements would, of course, have to be modified in view of different cultural traditions. In Hindu mythology, Japanese Buddhism, or Chinese philosophy, for example, five elements are assumed to exist. But in the Hindu and Japanese traditions, the four classical elements nevertheless remain essential, with an added fifth element containing and transcending the others—the ether respectively the void in Hindu and Japanese philosophy. This fifth element, by the way, somewhat resembles the quint[-]essence, the fifth element in Aristotle's philosophy, which he postulated as a constant, time-transcending synthesis between the other, unstable, and

transitory elements. Three of the four classical elements, namely earth, fire, and water, are also part of the Chinese tradition, which additionally includes metal and wood as elemental manifestations of matter and organic life.

Such differences would of course have to be taken into account in a comprehensive analysis, but it is nevertheless remarkable to what extent the four elements have a cross-cultural significance, which makes them an exemplary field of exploring the relationship between mind and matter in texts. They belong to the domain of "buried knowledge" that, to Bateson, art and literature make symbolically accessible (Charlton, 107), recuperating it as part of an earth-centered memory of the human species that enriches the complexity of ecological thought and imagination. They are part of a deep cultural memory of the primary embeddedness of the human in the nonhuman world of material nature, which can productively feed into an ecological epistemology and into the imaginative explorations of art and literature. They provide a source of continuity through historical periods and across languages and cultures, a sustainable matrix of cognitive and creative productivity within the discursive fields of culture-nature relations. An elemental philosophy and poetics represents a particularly interesting case for a cultural ecology of literature, since it helps to link the innovational drive of imaginative texts, as experimental spaces of cultural self-renewal, to their recursive feedback relations with an archive of ecosemiotic models that can be recycled in ever new ways. According to Macauley, "we are well advised to listen to this ancient wisdom although it may speak to us through a foreign language, another era, or a different set of concerns" (339). Macauley largely concentrates on philosophy, even though he includes "interstices" between his chapters in which the significance of his observations for culture, literature, art, and everyday experience is hinted at. Stone, wood, ice and snow, cloud, heat and cold, light and shadow, night, as well as space are the foci of these interstices, which prove to be present in multifarious ways as perceptional, cognitive, aesthetic, or experiential forms, structuring and energizing human thought and artifacts. Their generative potential lies in their combination of both material concreteness and a high degree of indeterminacy. William Desmond speaks of the "elemental indeterminacies of earth, fire, air, and water," which shape our "primal aesthetic being there in the world." "[W]e stand in the thickened middle of a sensuous flux, at the juncture not only of materiality and imagination but at the conjuncture of an undomesticated primordial 'plasma' of the four elements' (Macauley 340 paraphrasing Desmond).

The four elements thus connect us to an experiential immediacy of being while simultaneously offering a rich semiotic potential for language, dreams, the unconscious, cognition, the imagination, narrative, and art. This has been demonstrated by the brothers Böhme from an eco-phenomenological and cultural-historical approach (G. and H. Böhme 1996), in which they analyse the various ways in which language, thought, and aesthetic discourse are transfused by elemental signifiers that can help to reconnect the modern rational individual to a body-centered "aesthetics of nature" (G. Böhme 1989). It has also been elaborated more speculatively in Gaston Bachelard's poetics of the four elements, which, according to Bachelard, are not simply "concrete, realistic, and substantial aesthetic material" (Hans-Erik Larsen quoted in Macauley 341) but resemble "Jungian archetypes" in that they "exhibit unconscious and subjective dimensions" as well (Macauley 295). Bachelard tries to think science and poetry together, which he regards as "complementary" modes of elemental cognition, whereby poetry continually recuperates "the force of metaphors" which science "tries to eliminate or bypass...[but] which persists nevertheless" (Macauley 295). Bachelard traces the use of elemental metaphors in a broad spectrum of texts, extensively discussing examples of all four elements in poets that he individually associates with one of these elements respectively and classifies into different types. The German poets Novalis, E.T.A. Hoffmann, and Hölderlin, for example, are poets of fire, whereas Nietzsche is the archetypal poet and philosopher of air, "a figure of heights, mountains and ascensions," as distinct from the limiting earth, the "servile" water, and the erratically inconstant fire (Macauley 298). Bachelard has many important things to say about an elemental poetics, and as Macauley observes, "Bachelard's elemental explorations are germane, then, to a broad form of cultural ecology that unites the material and figurative realms" (299). But Bachelard's urge to classify and typify is sometimes excessive and exclusionary, undermining his attempts to clarify the relevance of the four elements for a cultural ecology of literature. Rather than assigning monosemic anthropomorphic meanings to the elements and their symbolic representations, it seems more appropriate for the description of eco-aesthetic processes to assume polysemic, shifting, fundamentally indeterminate meanings that unfold in texts and artifacts

precisely because of the pre-conceptual and hetero-discursive character of the forces that the elements are taken to represent. Indeed, the use of the four elements in literature can illustrate especially well one of the main points of interest for a cultural ecology of literature, because they exemplify how the forms of literary creativity are typically derived from the reflexive interactivity between mind and matter, ecocultural and biosemiotic processes.

### Earth, fire, air, and water as ecopoetic energy fields

Some of the most ancient metaphors of creative inspiration and energy, which have been countlessly recycled in later literary history, are related to the four elements. Above all, the earth itself has been an almost omnipresent metaphor and source of creativity in literature: in the myth of the Magna Mater, in its flora and fauna, its seascapes and landscapes, its forests and deserts, its plains and mountains, its cycles of fertility, of growth and decay, death and rebirth, day and night, of the seasons and the weather—all of them representing generative sites of the literary imagination throughout western and non-western literatures alike. Plants and vegetation in their multiple shapes and forms are signifiers of poetic productivity, such as flowers in classical and romantic literature as in Wordsworth's daffodils or the blue flower of Novalis' Heinrich von Ofterdingen, which represent iconic figurations of the poetic imagination in British and German romanticism respectively. In American literature, notable examples range from the spears of grass that translate into "so many uttering tongues" in Whitman's Leaves of Grass (26); to the "leaping tongue of bloom" in Frost's "Tuft of Flowers" (l. 23); to the unfolding curls of spring buds as signifiers of natural-poetic emergence in William Carlos Williams' "On the Road to the Contagious Hospital"; up to the soot-stained sunflower as an alter ego of the human speaker in Allen Ginsberg's poem "Sunflower Sutra," which, in its black external shabbiness but beautiful yellow inside, conveys the shared creative potential of human and nonhuman life in the midst of an industrial wasteland. The poet is sitting with Jack Kerouac in a desolate industrial site and discovers the black sunflower, which becomes a dialogic mirror of his innermost self. Just like the sunflower, which is externally deformed by the waste of civilizational progress, the poet is scarred by the alienation, traumas,

and depressions of society, but like Jack Kerouac and all humans, he shares with the disfigured sunflower a hidden potential of beauty and vitality, which he expresses in the process of poetic meditation in a jazz-like psychedelic rhythm and sound (Ginsberg):

- ... So I grabbed up the skeleton thick sunflower and stuck it at my side like a scepter,
- and deliver my sermon to my soul, and Jack's soul too, and anyone who'll listen.
- We're not our skin of grime, we're not our dread bleak dusty imageless locomotive, we're all beautiful golden sunflowers inside, blessed by our own seed & hairy naked accomplishment-bodies growing into mad black formal sunflowers in the sunset, spied on by our eyes under the shadow of the mad locomotive riverbank sunset Frisco hilly tincan evening sitdown vision.

Similarly, the earth's fauna has supplied a recurrent source domain of creativity metaphors in texts. Birds especially are frequent dialogic others of poets and incarnate the transformative power of poetic discourse, such as the classical nightingale in Keats, the mockingbird and spotted hawk in Whitman, the raven in Poe, the white heron in Sarah Orne Jewett, the oven bird in Robert Frost, the vulture in Robinson Jeffers, or the eagle in Joy Harjo or Simon Ortiz. Huge and sublime animals like Melville's white whale, Faulkner's old bear Ben in "The Bear," or Hemingway's giant marlin in The Old Man and the Sea but also small and insignificant creatures like Dickinson's snake, fly, or crickets, or Marianne Moore's snail, toad, or paper nautilus, constitute sources of poetological inspiration which inhabit and shape the shared creative cosmos of texts. These polymorphic presences in imaginative texts exemplify what Elisabeth A. Lawrence has termed "cognitive biophilia" (Lawrence) and what Louise Westling calls the "human animal dance" as a creative matrix of literary narratives from antiquity to modernity (1993). Obviously, the examples are too numerous to be discussed here in any representative way. But what all of them show in their different ways is that elementary poetics constitutes one of the most potent sites and sources of literary production and creativity, which actualizes the ecological unconscious of texts as a powerful potential of human self-exploration from the biosemiotic memory of deep-time nature-culture coevolution.

The element of fire is an inspirational force that is both destructive and creative, a sign of radical discontinuity yet also of new beginnings, of liberation and rebirth. It is connected with heat, light, intensity, and with productive yet also self-consuming creative energy, as personified in archaic mythological figures such as Phoenix, the mythical firebird who dies in the fire and is reborn from the ashes, or Prometheus, the bringer of fire and creator of humans. An example of this radical translation between elemental energies of nature and creative human energies is the famous poem by Nietzsche from *Ecce Homo* (255):

#### Flamme bin ich

Ja, ich weiß, woher ich stamme: Ungesättigt gleich der Flamme glühe und verzehr ich mich. Licht wird alles, was ich fasse, Kohle, alles, was ich lasse —Flamme bin ich sicherlich.

Yes, I know from where I came! Ever hungry like a flame, I consume myself and glow. Light grows all that I conceive, Ashes everything I leave: Flame I am assuredly. (Corngold 53)

Note that the poem is about a "wild" source of the human self in the element of fire, which energizes the subject and its environment as an all-consuming force of intensity and chaotic transfiguration but that its form nevertheless follows a rhythmic order provided by the regular four-syllable trochaic verse and the two symmetrical parts marked off by the period between lines 1–3 and lines 4–6. Both of these parts start in a parallel way with a pair rhyme in the first two and in the fourth and fifth lines and end in a single verse in lines 3 and 6, which link the two parts in a tail rhyme that emphasizes both reflective difference and empathic identification of the human self toward the elemental force of fire that it evokes for its own creative power. Here again, inspiration and composition, chaos and order, deconstruction and reconstruction are the characteristic poles between which the literary transformation of ecopoetic energy fields into textual poiesis is performed.

In our corpus of core texts from American literature, The Scarlet Letter is an example in which the element of fire serves to embody the creative force underlying and pervading the novel. Already in the metafictional frame narrative of "The Custom-House," the red-colored sign of cloth forming the letter A, which the narrator finds in the upper storey of the Custom-House, is connected with a fiery energy emanating from this material signifier. Lifting it to his breast, the narrator lets it drop to the floor because of its "burning heat... as if the letter were not of red cloth, but of red-hot iron" (62). The sign assumes a demonic force associated with fire in the perception of Hester by the townspeople: "They averred that the symbol was not mere scarlet cloth, tinged in earthly dye-pot, but was red-hot with infernal fire, and could be seen glowing all alight, whenever Hester Prynne walked about in the night-time" (112). This demonic fire becomes an even more sinister force in Chillingworth's mephistophelian scientific mind: "... the fire in his laboratory had been brought from the lower regions, and was fed with infernal fuel" (149), while Pearl's "ever-creative spirit" (118) as a hybrid being on the boundary of culture and nature, an embodiment of wildness and yet an incarnation of the scarlet letter, personifies the playful version of dancing fire: "There was fire in her and throughout her ... and made her the very brightest little jet of flame that ever danced upon the earth" (124). And in Dimmesdale, this inspirational force of fire finds expression in his exceptional power of speech, his "tongue of flame," in which the underlying tensions and unresolved conflicts of self and society are brought to cultural articulation in a shared intensity of inspiration through which he is able to address "the whole human brotherhood in the heart's native language" (162).

Air and wind, as the sound and energy of moving atmospheric forces, equally have been signifiers translating natural into cultural creativity, as in the myth of the Aeolian harp whose sounds are produced not by human hands but by the air itself. Well-known examples include Shakespeare's Ariel in *The Tempest*, who represents the merging of water, wind, music, and art in the transformative "sea-change" of the play or Shelley's "Ode to the West Wind," which addresses the wind as "Destroyer and Preserver" (l. 14) that renews the creative imagination of the poetic self. In fact, all the four elements are invoked in Shelley's poem to enforce this effect—the earth in the cycle of the seasons from the dry leaves of autumn to the "sweet buds" of spring (l. 11); water in the

imagery of turbulent waves and stormy clouds; fire in the convolutions of "rain and lightning" (l. 18) and of "black rain, and fire, and hail" (l. 28). All of them are related to the wind as a force of radical change and yet continual recurrence, a force between death and rebirth, paralysis and regeneration, which the poet tries, almost desperately, to conjure as a source of personal, poetic, and cultural self-renewal: "Make me thy lyre, even as the forest is ... And, by the incantation of this verse, /Scatter, as from an unextinguish'd hearth/ Ashes and sparks, my words among mankind!/Be through my lips to unawakened Earth/ The trumpet of a prophecy!" (Shelley l. 57, l. 65–69). Once more, the poem's process results from the attempt to translate elemental natural into radical cultural creativity. The power of the wind as a metonymic signifier of nature's creativity is self-reflexively staged as a vital medium for the renewal of the poetic imagination, which at the same time remains unavailable to full poetic representation as a fundamental life force that both inspires and transcends the poetic process.

Again, these elemental metaphors of literary ecology are both culture-specific and transcultural. They find different expressions in different periods and cultures, but they also provide an ecosemiotic code of literary productivity that extends across the boundaries of cultures and links them in the awareness of their shared existence as part of a larger connectivity of all life on the planet. Among the many examples of literary uses of the wind as a medium of creative inspiration in Native American Literature, for instance, Simon Ortiz' poetry is an instructive case in point. In *Spreading Wings on Wind*, he relates the shape-shifting forms of poetic identity to the wind in ways that empower the poet not only to imaginatively join in the flight of the eagle but to "think like a mountain" (Barry Lopez) as well, because the wind here signifies a more general force and rhythm of being, a "breath" of life of which the poet becomes a mediator (Ortiz):

I must remember that I am only one part among many parts, not a singular eagle or one mountain. I am a transparent breathing.

In a more material form the wind, as a thermodynamic phenomenon of moving matter, appears in Ortiz' Wind and Glacier Voices, where Ortiz

conflates the invisible energy streams of solar winds with the sounds of prehistoric glaciers into a poem of deep time, in which personal and cultural life is interpreted in geo-historical dimensions. On a larger scale, in Linda Hogan's novel *Solar Storms*, this geo-cosmological contextualization of human within planetary life becomes the basis of an ecofeminist narrative of both capitalisttechnological exploitation and biophilic regeneration.

Water, too, has represented a source domain for metaphors of literary creativity in many different forms and cultures. As Hans-Erik Larsen has demonstrated in relation to painting and literature, "the ebb and flow of hydrological processes" (quoted in Macauley 339) has pervaded the artistic imagination not only as a theme but as a medium of their aesthetic processes. Water and light have been the inspiring elements of impressionism and of fin de siècle literature, with the figure of the "wave" not merely as an object of aesthetic exploration but as a model of artistic form. More or less explicitly, however, water in its various manifestations has been present in art and literature throughout history and beyond specific periods (Cf. Goodbody and Wanning). Brooks, rivers, clouds, lakes, or the sea have served as poetological media. Springs and fountains, as symbolic sites of origins, are frequent analogs of poetical creativity, for example, in a gothic-romantic conception, in Coleridge's "Kubla Khan", whose "stately pleasure-dome" (l. 4) is built on a "savage place" (l. 14) from whose "chasm, with ceaseless turmoil seething,/ As if this earth in fast thick pants were breathing,/ A mighty fountain momently was forced" (l. 17-19). Rivers, too, are recurrent sites of literary inspiration, as in Mark Twain's Huckleberry Finn, where the narrative flow of the text is modeled on the flow of the Mississippi river; in Robert Frost's "West-Running Brook," where the brook is a dialogic medium of life both separating and connecting the two speakers: "It flows between us to separate us for a panic moment. It flows between us, over us and with us" (Frost 165); in Hemingway's "Big Two-Hearted River," where the swampy river both reflects the narrator's war trauma and helps to overcome it; in Faulkner's The Sound and the Fury, where the presence of the motif ranges from the water of the creek in which the Compson children gained their first intimate experience of nature, to the suicide of Quentin in water as a desperate act of reconnecting with this lost past; in Gary Snyder's cycle of poems Regarding Wave, which captures the motion of waves as energy flows in images relating not only to water but

to animals, the human body, the mind, and language itself, bringing together Zen Buddhist and Western ways of thinking and writing about water as a life force and at the same time a source of the cultural and literary imagination; or in Linda Hogan's poem *To Light*, already discussed above, in which the allpervading element of water becomes a medium of traumatic memory as well as of the flow of its poetic transformation and articulation. In Toni Morrison's *Beloved*, the ghost of Beloved, who returns from the dead as an irresistible force of "rememory" pervading the text, emerges from a river: "A fully dressed woman walked out of the water" (168). In this scene, which self-reflexively stages the emergence of the central narrative energy of the novel, images from nature and culture are blended in a symbolic rising from the dead that initiates a polyphonic process of storytelling and remembering a traumatizing past.

This catalytic and transformative use of water seems to be more generally relevant for African American literature. As Anissa Janine Wardi points out in her book Water and African American Memory, water has been an important element in the whole corpus of recent African American literature as a semiotic medium of cultural criticism and self-exploration between historical memory, trauma, and imaginative regeneration. This is of course especially true of the sea and the Atlantic Ocean as the site of the Middle Passage, which has become a prominent topic of African American studies under the umbrella term of the Black Atlantic. In this perspective, as Wardi and others point out, water and the sea are culturally heavily coded in terms of their contamination by the exploitative practices of colonialism. Thus the sea in Morrison's Beloved, for example, becomes an imaginary space of powerful scenes of rememory of the Middle Passage in the form of multiple stream-of-consciousness techniques. A cultural ecology of literature would agree that this culture-specific coding of water-and of other elemental images-is a central part of Morrison's aesthetic but would also point to a dimension of the text which indicates a more general potential that the elements provide as an ecosemiotic matrix for the literary imagination in structuring and communicating such specifically coded historical-cultural experiences.

The use of the elements in literature involves not only physical, material but also internal, psychocultural realities. A cultural-ecological approach looks at these mutual translations between external and internal ecosystems with special attention, because they provide a preferred medium in which

imaginative texts operate and which enables them to address key issues of human culture and history from both a culture-specific and a transcultural perspective. In the subsequent chapters, I specify this potential further by considering the spectrum of interaction between material and psychocultural aspects in two complementary frameworks: liminal spaces of culture/nature interaction in the example of the beach, in which a material phenomenon of nature becomes a site of psychocultural self-exploration; and literary trauma narratives, in which psychocultural forms of trauma are contextualized within material-natural processes.

### Solid and Fluid

#### Cultural ecology of the beach in literature

The special significance of the seashore for a cultural ecology of literature is linked with its conspicuous in-between status: it is located at the interface between water and land as heterogeneous manifestations of the global ecosystem. It occupies a special zone bordering on the water and still belonging to but also somehow separated from the land. "The beach is an anomalous category between land and sea that is neither one nor the other but has characteristics of both" (Fiske 120). I am using the term beach here, rather than shore or coast, to emphasize its character as an especially intensive contact zone between sea and land, human and nonhuman life, in the evolution of culture.1 The beach has a certain stability, yet is constantly changing; it is a site of regularly recurring rhythms and irregular morphodynamic shifts and transformations. It was central to the emergence of life, and, as a place of transition between sea and land, has been crucial to the evolution and continuing survival of human cultures. From the point of view of human history and society, the beach appears as a humanly accessible part of the coastal landscape, a visible boundary marker, but also a place of vital interaction between culture and nature, between habitable and uninhabitable spheres. Since the dawn of history, the beach has served as a place of fishing and seafaring, of trade and economic exchange, and thus as a link between regions and cultures. As a boundary between different intersecting biospheres, the beach is a complex liminal ecosystem, whose combination of the solid and the fluid, of recurrence and change, of unity

<sup>&</sup>lt;sup>1</sup> For a differentiation of these terms, see Fiske (1983: 59), Plumwood (1993: 3), Lockwood (2012).

and diversity seems to correspond to deep-rooted human needs and desires. The beach is a hybrid zone in which different time frames—day and night, the tides, the seasons—and spatial conditions—shallow or deep, narrow or broad, flat or hilly coastal conditions—interact in complex, regular and irregular, chaotic and rhythmical ways.

This ecological, anthropological, and cultural significance of the beach as a boundary and place of transition between sea and land made it a topic in literature long before its modern commercial appropriation. In this chapter, I want to explore some of the ways in which the beach not only features as a setting for literary texts throughout history and across different cultures but also constitutes a particularly productive site of literary creativity. In this respect, the present chapter, even though more concretely focusing on a liminal spatiotemporal ecozone, links up with the other chapters by exemplifying creative processes of texts defined in always shifting tensions between matter and mind, order and chaos, connective patterns and creative energies. The various configurations of the seashore in literature are often implicit or explicit modes of autopoetic reflection on the origins and possibilities of literary creation; at the same time, they offer an ecosemiotic space in which complex interactions between archaic-evolutionary, historical-cultural, and metaphoric-imaginative frames of significance can be staged and explored in almost paradigmatic ways.

Given its significance and recurring presence in literature past and present, the beach has received rather scarce attention in literary and cultural studies. To be sure, coasts and shorelines have been thematized as settings for literary events, as transitional spaces between different states of existence, and as places of disaster and rescue, of exploration and abandonment, and of erotic adventures and intercultural encounters in works from the *Odyssey* to medieval and modern texts. They have also been the subject of cultural-historical scholarship on the shipwreck as a metaphor of human transgression and failure, as in the work of Hans Blumenberg, or as a symptom of the ambiguities of civilizational expansion and of globalization in Ottmar Ette's recent work (Ette 2009). In these studies, however, the beach is primarily seen as a space for the realization of individual or collective human projects. It remains part of a prevailing anthropocentric interpretation of the natural world as a stage for the enactment of human history.

From the beginnings of literature in mythology, the beach has been connoted as a place of origin and of emergence, a place of transformation and metamorphosis, a place where the elements of water, earth, air and fire meet in the co-agency of sea, land, wind, and sun. Indeed, the modern concept of "emergence" as a term for the evolutionary appearance of new forms of life or new cultural phenomena seems to be linked originally to rising out of water, as in the first item in *Webster's Dictionary* on "emergent": "1: emerging out of a fluid or something that covers or conceals: issuing forth: rising into notice (like the lovely goddess emergent from the waves, emergent coastal islands, the emergent vegetation along the shore)" (Webster 741). In the liminal space of the beach, heterogeneous phenomena and forces meet, each of which represents necessary but contradictory conditions of human life and culture—the solid and the fluid, the habitable and the uninhabitable, the graspable and the ungraspable, the limited and the unlimited, the historical and the transhistorical.

#### The beach in the mythological imagination

The beach is a place where historical time is both present and suspended and where the archaic origins of life and culture can be experienced as coexisting in sensory immediacy with prevailing social conditions. It is a place where deep time and local time concur, merging our civilizational sense of historical linearity and uniqueness with an awareness of the transhistorical co-evolution of human and nonhuman life. This is why the beach has figured so prominently in mythological tales of human origins, which continue to exert a powerful appeal in modern literature. Let me single out one such potent myth, deeply rooted in the imagination of ancient Europe, the myth of Aphrodite. Her birth from the foam of the waves breaking on the beach is preceded by a power struggle between Gaia and Uranos, who is overthrown by Chronos and whose severed genitals' blood metamorphs into the sea foam from which Aphrodite emerges. The generative powers of heaven and earth are thus symbolically brought together in the medium of the waves of the sea, from whose foam Aphrodite emerges. Aphrodite incarnates the birth of new life from elemental natural energies, the symbiosis of fluid and solid forms, and the beauty and erotic fascination of the human body as the product of the evolution of life and culture. In this function, Aphrodite or Venus, with her characteristic attributes of waves, seashell, dolphins, flowers, and birds, was an almost omnipresent figure of reference in the literature of classical antiquity and then again from the Renaissance to romanticism and into the nineteenth and twentieth centuries. Her association with the transitional, metamorphic space of the beach and with the creative process of life itself is expressed in these passages from Rilke's "Geburt der Venus" ("The Birth of Venus"):

Hinter ihr, die rasch dahinschritt durch die jungen Ufer, erhoben sich den ganzen Vormittag die Blumen und die Halme, warm, verwirrt, wie aus Umarmung. Und sie ging und lief.

Am Mittag aber, in der schwersten Stunde, hob sich das Meer noch einmal auf und warf einen Delphin an jene selbe Stelle. Tot, rot und offen. (Rilke 508; ll.55–64)

Behind her, as quickly she walked over the young shores, all the forenoon the flowers and grasses rose up, warm, confused, as from an embrace. And she walked and ran.

But at noon, at the heaviest hour, the sea rose once more and flung out a dolphin, at that same place. Dead, red and open. (Rilke, trans. Middleton)

The creative process of the poem encompasses land and sea, plants, animals, and the forms of the human body. It is framed by the tension between eros and thanatos, attraction and violence, becoming and vanishing. On one level, the poem is an intermedial comment on Botticelli's *Birth of Venus* and on another a poetic adaptation of the Christian drama of death and resurrection to the dionysian Aphrodite myth. But it is clearly also an autopoetic reflection about its own emergence as a symbolic activity creating unity in diversity and bringing together heterogeneous manifestations of life on the boundary between natural and cultural evolution.

# The beach in history and society: Shipwreck and social transformation

In early modern literary history, the beach becomes a site of catastrophe, crisis, and exploration within the project of a globally expanding civilization. In this context, it is perceived as a site of danger and survival rather than a place which is significant in itself. This function is expressed in the recurring motif of the shipwreck, which, as Ottmar Ette, following Blumenberg, has shown, has been a topos in literature since Columbus and through the various stages of western expansion and globalization, involving highly ambivalent intercultural encounters and experiences of failure, conflict, and the gaining of new knowledge (Ette 2009).

Needless to say, I can only mention a few of the many possible examples. In Shakespeare's Twelfth Night, the beach appears as a place of shipwreck initiating social change and transformation. Viola and her brother Sebastian are separated by a storm and are washed up on the beach after their ship founders, landing in the unknown country of Illyria, where Viola's appearance in the local community in the disguise of a man results in turbulent events that break up frozen relationships and call into question conventional gender roles. The beach features in two symmetrical scenes only (Twelfth Night I, 2 and II, 1), in which each of the siblings has barely survived the catastrophe. They find themselves in a near-death situation, which nevertheless becomes the starting point for the ensuing drama of confusion, multiple role-play, and symbolic rebirth and regeneration of life, in which eros triumphs against emotional stalemate and the siblings meet again at the end of the play. Both Sebastian, whom Viola last saw clinging to a mast "like Orion on the Dolphine's back,/ I saw him hold acquaintance with the waves" (Act I, 2) and more particularly Viola, whom Sebastian deems dead and "drowned with salt water" (Act II, 1), are thus associated with water and with the power of elemental emotions.

More explicitly, *The Tempest* not only presents a sociopolitical counterworld but stages the transformative power of art in connection with the hybrid space of the beach. Again, the play begins with a storm and an impending shipwreck, accompanied by chaos and aggression among the ship's crew, who jump overboard and are dispersed on Prospero's island. But as it turns out, storm and shipwreck have been orchestrated, with the help of the island spirit

Ariel, by Prospero, the ruler of the island and exiled former duke of Milan, who is taking revenge on the usurpers of his former power but also teaches them a lesson in loss, suffering, and forgiveness. Prospero uses his knowledge gained from the study of books and of the "liberal arts" (Act II, 2, l. 73), to which he has dedicated himself, to play an educational power game with his former enemies; he is assisted in this project by Ariel, the island spirit who has "performed" the tempest for him (Act I, 2, l. 194) and who has plunged his enemies into a near-death experience of shock, despair, and madness before he turns their anticipation of imminent death into an unexpected rebirth on the island's beach. The liminal, transitory space of the beach is not only the location but a semiotically important site of this transformation, which involves a crossing back and forth between sea and land, solid and fluid forms of being. The beach is a site of both catastrophe and survival, of a "sea-change" that the characters have to go through (Act I, 2, l. 402-403), of their encounter with new people in a "brave new world," and a place where Ariel, changing his shape into a "water nymph" only visible to Prospero and himself (Act I, 2, 317 ff.), enchants the strangers with his magical music. The power of art staged in the play is thus not restricted to a cultural level but results instead from a vital reconnection of cultural and natural energies. If the aim of Prospero's civilizational project is to sublimate and domesticate nature, its realization remains dependent on the natural forces which are personified in Ariel. The magical power of Ariel is an indispensable part of Prospero's project, and after the spirit's helpful assistance in the service of human evolution, this power is finally set free, implying recognition of the limits of man's anthropocentric control over nature.

The role of Caliban is also interesting in this context. As a native and son of the former matriarchal ruler of the island, Sycorax, he represents, on the one hand, a grotesquely deformed, negative projection of the colonial subject in the framework of Prospero's supremacist ideology, in which the colonial other is devalued by both demonization and satiric contempt. For this reason, the postcolonial critique and revisionist rewritings of *The Tempest* are responding to a dimension of the play that is symptomatic of the larger project of western colonialism. At the same time, the figure of Caliban also embodies a subversive counter-energy to the "white magic" of Prospero's purported humanist rule of reason. For all his malicious, cunning, and uncouth behavior and appearance,

Caliban is a strange transitional figure living in an undefined nomadic borderzone between archaic and modern world, instinctual desire and linguistic order, anarchy and discipline. With his body-centered, upside-down perspective on systemic hierarchies, he assumes features of the Bakhtinian grotesque and carnevalesque. In his amphibian hybridity between human shape and fish-like appearance ("What have we here? a man or a fish? ... Legg'd like a man, and his fins like arms." Act II, 2, l. 26, 38), he reflects the hybrid zone between sea and land in which he lives, displaying a native knowledge and special sensorium for the ecosystem of the island that enabled Prospero to gain control of it in the first place. "And then I loved thee,/And show'd thee all the qualities o' th' isle,/ The fresh springs, brine pits, barren place and fertile" (Act I, 2, l. 397-405). He also has an acute sensitivity to the island's deeper "wavelengths," for not only can he alone hear the music of the spheres—which represents the highest form of cosmic and aesthetic order in Western philosophy—but he also is exceptionally receptive to the living soundscape of the island. "... the isle is full of noises,/Sounds and sweet airs that give delight and hurt not./Sometimes a thousand twangling instruments/Will hum about mine ears ..." (Act III, 2, l. 148-153) The figure of Caliban is thus much more complex than it seems. As a transgressive force beyond all binaries, he is an indispensable, dissonant, counterdiscursive voice in the (trans-)cultural knowledge exchange and part of the ecosemiotic interactivity between culture and nature that energizes the artistic productivity of the play and that is closely tied to the beach as a transitional, elemental contact zone between solid and fluid, land and sea.

A paradigmatic case in the emerging genre of the novel for the ways in which the beach figured prominently in the process of western expansion, colonization, and early globalization is Daniel Defoe's *Robinson Crusoe*. Defoe's novel is an influential illustration of the ways in which the beach has been imagined as a site of repeated shipwrecks and hairsbreadth escapes but also of the confrontation with an exotic pagan world of "wilderness," which is seen not as an enriching ecocultural contact zone but as a life-threatening inferior realm inhabited by human and nonhuman aliens that have to be subjected to social discipline and civilizational control. This encounter challenges the protagonist to mobilize his technical and economic inventiveness and moral discipline in a modern individualist work ethic, which instructs him to cultivate the "raw material" of nature profitably and that way provides a

model of human mastery of the world and of the alleged superiority of western culture over other, non-western cultures that served as a central ideological underpinning of the project of colonialism.

## The beach between the romantic sublime and elemental nature

While this religious-pragmatic, economic, and instrumentalizing view of the beach as part of a larger project of the appropriation of nature as well as of other cultures remains prominent in subsequent travel literature, novels of adventure, and island literature, it undergoes a major change in romanticism. The beach is subject to a radical reappraisal in romantic poetry and is focused upon as a place of natural value and meaning in its own right. As a boundary between culture and nature, between the human and nonhuman spheres, the beach becomes a site of the sublime. In Wordsworth's *Ode: Intimations of Immortality*, it marks an enchanted place of childhood memories in a disenchanted world, a place redolent of the immortal origins and the final destination of human life:

Hence in a season of calm weather
Though inland far we be,
Our souls have sight of that immortal sea
Which brought us hither,
Can in a moment travel thither,
And see the children sport upon the shore,
And hear the mighty waters rolling evermore. (l. 165–171)

The transcendental origins and the destination of human life are no longer located vertically in a sphere above nature but horizontally within elemental nature itself.

The beach is also the site of the gothic sublime in famous romantic texts such as Edgar Allan Poe's "Annabel Lee." The poem unites eros and thanatos in the "kingdom by the sea" (l. 2) that the poetic speaker shares with his youthful bride, who died young but lives on in the imaginary borderland of their shared passion. This finds expression in the sound and rhythm of the elemental waters on the beach and also inspires the sound and rhythm of the poem itself:

And so, all the night tide, I lie down by the side Of my darling – my darling – my life and my bride, In her sepulchre there by the sea – In her tomb by the sounding sea. (l. 38–41)

In the course of the nineteenth century, the relationship between man and elemental nature embodied in the beach is even more explicitly foregrounded as a source of artistic creativity. One text in which the interfusion between the experience of the beach and the poetic mind becomes especially productive is Walt Whitman's poem Out of the Cradle Endlessly Rocking. In the poem, the adult speaker revisits a place on the Long Island seashore where, as a young boy, he had experienced the kinship between human and nonhuman nature, which awakened him to his poetic calling. The speaker seems to be undergoing a crisis, he is "[a] man, yet by these tears a little boy again,/ Throwing myself on the sand, confronting the waves ..." (l. 18-19). As a boy, he used to visit the beach at night to listen to the love song of two mocking-birds, and, after one of them has disappeared, to the passionate song of sorrow and mourning of the remaining solitary bird. The poet translates the birdsong into human language, and this "aria" (l. 130), as he calls it, inspires him to his own flow of sounds, memories, and words out of which the poem is composed. The text unfolds in a syntactically fluid, undulating rhythm characterized by long, elliptical sentences, the frequent use of continuous forms, and by alternately advancing and retreating sequences of longer and shorter lines. The "fitful risings and fallings" (l. 9) of the bird's voice, the rocking movements of a child's cradle, and the back and forth movement of the constantly changing yet endlessly repetitive rhythm of the waves on the shore are interrelated in the "oceanic" style of the poem, re-enacting in language the fundamental cycle of life, death, and rebirth as the matrix of poetic creativity. The sounds of the waters breaking on the shore are like the "moans" of a "fierce old mother incessantly moaning" (l. 133); they signify the birth pangs of ever new life but also the inevitable knowledge of death, which is precisely the answer the poet receives from the waves in his quest for "the word final, the word superior to all" (l. 161):

Whereto answering, the sea
Delaying not, hurrying not,
Whisper'd me through the night, and very plainly before daybreak,
Lisp'd to me the low and delicious word death,

And again death, death, death, death, (l. 165–169)

. . .

Which I do not forget,

But fuse the song of my dusky demon and brother,

That he sang to me in the moonlight on Paumanok's gray beach,

With the thousand responsive songs at random,

My own songs awakened from that hour,

And with them the key, the word up from the waves ... (l. 174–179)

Poetry is the translation of the language of nature into the language of culture, and the beach is a particularly rich ecosemiotic site of poetic emergence and creativity.

In the Anglo-American novel of the fin de siècle, the beach figures most prominently in Kate Chopin's *The Awakening*. The novel begins and ends there, and in addition several of its climactic scenes and turning points are set on the beach. It is the first American novel to be set in a holiday resort; for the female protagonist, Edna Pontellier, the beach becomes a counterworld and heterotopia to her life as the wife of a successful Creole stockbroker in New Orleans. To Edna, the sea is a source of the life-enhancing intensity that is lacking in Victorian society. The sea is also, as has been seen above, the source of the dionysian power of art, as becomes evident in Edna's passionate response to Mme. Reisz' piano concert. At the end of their novel, Edna breaks off all social relations and stands alone on the beach, looking out toward the sea, which is "gleaming with the million lights of the sun" (Chopin 136), in an experience that is marked both as a moment of imminent death and as her final awakening. Standing naked at the edge of the water before swimming out into the infinity of the gulf, she "felt like some newborn creature, opening its eyes in a familiar world she had never known" (136). In this final scene, different strands of the literary discourse of the beach intermingle. Edna is like Aphrodite, newborn from the foam of the waves, but she also resembles a mermaid or Undine figure, a half-human, half-aquatic being, who is about to return to her true element. She is, moreover, an intertextual version of Whitman's Out of the Cradle, in which the sea exerts an irresistible pull with its elemental cycle of life, death, and rebirth. The mournful aria of Whitman's mocking-bird mingles, at the end of The Awakening, with the voice of the sea in a scene that recalls the infinite melody of love in Wagner's Tristan und Isolde. This is clearly inscribed in the novel's ending, which translates the concluding lines of Isolde's *Liebestod* song into the narrative plot—"Ertrinken, versinken, unbewusst, höchste Lust." ("To drown, to founder, unconscious, utmost rapture," Wagner) Edna's swimming out into the open sea, which recalls her dreamlike childhood memories of a meadow she had once traversed "that seemed as big as the ocean," making her feel "as if swimming when she walked, beating the tall grass as one strikes out in the water" (35), is also a symbolic act of love, not however as in the case of Isolde with a human other but with the nonhuman other of elemental nature: "The touch of the sea is sensuous, enfolding the body in its soft, close embrace" (136). The novel does not simply end with the conventional suicide of a woman victimized by society but with a symbolic merging of the contradictory forces that determine Edna's existence. The novel's conflicts between conscious and unconscious self, between civilizational control and elemental nature, between biophobic and biophilic energies are staged in the ecosemiotic space of the beach, which is a central site of the novel's artistic creativity.

#### The beach as a matrix of post-traumatic narratives

In contemporary literature as well, the beach continues to remain significant as a place of decisive encounters, existential turning points, and liminal experiences between civilizational order and transgressive fantasies. In novels such as Ian McEwan's *On Chesil Beach* (2007), the beach is the central location of potential meaning and failure in the protagonists' lives. McEwan's novel is told in retrospect; it deals with the wedding night of the young couple Edward and Florence in mid-twentieth century England, on Chesil beach. The night ends in an embarrassing sexual disaster and in the separation of the newly married pair. While Florence sublimates the shock through the passionate emotionality of her music and becomes a famous violinist, Edward's life disintegrates into a series of inconsequential relationships. The turning point of their lives, on Chesil beach, however, remains an imaginary presence in the narrator's mind, providing the core scene and fueling the melancholic energy of his post-traumatic story-telling:

On Chesil Beach he could have called out to Florence, he could have gone after her. He did not know, or would not have cared to know, that as she ran

away from him, certain in her distress that she was about to lose him, she had never loved him more, or more hopelessly, and that the sound of his voice would have been a deliverance, and she would have turned back. Instead, he stood in cold and righteous silence in the summer's dusk, watching her hurry along the shore, the sound of her difficult progress lost to the breaking of small waves, until she was a blurred, receding point against the immense road of shingle gleaming in the pallid light. (McEwan 203)

Charles Simmons' Salt Water (1998) is even more of a post-traumatic narrative: about thirty years after the event it relates a summer holiday in the narrator's youth in the early 1960s during which the confusions of his first love coincide with or, rather, culminate in the death of his father. The novel is an intertextual adaptation of the tale "First Love" by Ivan Turgenev, but is transferred in its setting from the Russian countryside to the New England seaboard. During the family vacation at a seaside resort in New England, fifteen-year-old Michael falls in love with a twenty-year-old girl, Zina. He first encounters her on the beach after his father has swum out with him almost too far and he lies exhausted, falling in love with Zina "upside down" (Simmons 18). Zina alternately flirts with him, takes photographs, seeks his company and kisses him, but also keeps her distance and withdraws from him. All the events leading up to the final crisis are set on or in the vicinity of the beach, as Michael is torn between innocence and eros, between desire and uncertainty, unable to make sense of Zina's contradictory behavior until he finds out that she has begun a relationship with his father Peter. When he discovers their affair, Michael is shocked and confused, and blackmails Zina into having sex with him on the family boat. Having gone out on the boat with his father, Michael challenges him with this fact in a verbal confrontation during which the father is hit by the boom of the boat and disappears into the water, never to be found again. This is the tragic trauma which Michael has still not come to terms with, as the ending of the novel indicates: "I am now older than father was when he drowned. I don't know why I still feel like a child" (175).

The title of the novel already establishes water and the beach as the central theme and metaphorical source domain of the fictional events: It combines the element from which Michael's first love emerged and in which his father disappeared, with his own emotional reaction: "Waves sent up spray from the oceanside. I suppose I was crying. Tears and salt water taste the same" (171). It is thus a novel about

the relationship of man and the sea, both on a real and on a symbolic level—on a real level it is about sailing, fishing, swimming, and walking along the beach, activities associated with a tourist attitude to nature, typical of modern seaside resorts; on a symbolic level it is about the vital inner relationship of human beings to sea water as an elemental emotional life force. Zina, like Michael's father, is closely associated with water in her open, fluid, unpredictable character and her unknown and uncontrollable depths. Both Zina and Michael's father Peter are likened to porpoises (17, 25), a subspecies of dolphin which evolved from land animals that reentered the water. And while the advancing Zina is described as "Venus rising" (43), his father's birthplace is Neptune, New Jersey, clearly an allusion to the ancient sea god, whose element is salt water, in which Peter likes to sail and swim, and in which he disappears at the end. It is significant that his body is never found, that he has in a way merged with the salt water of the seas, and of his son's tears. On the one hand, the tears of the narrator, emotionally paralyzed for decades, have turned him into a pillar of salt: he has been unable to overcome his trauma. On the other hand, perhaps the fact that he is finally recounting the events of that summer and bringing them back to life again, in a narrative full of pain and play, of joy and mourning, of laughter and tears, is the first step in a therapeutic process of opening himself up to his deeper self.

If this is a post-traumatic narrative, it is also a narrative in which the anthropocentric perspective on and appropriation of the beach—by personal desire but also by tourism, fishing, and the military—is complemented and undermined by a non-anthropocentric perspective. This latter perspective is indicated, on the one hand, in the humanizing description of the two dogs which accompany the young protagonists, and on the other hand, in the unfeeling and unnecessary slaughter of stingrays described at the novel's beginning. The human characters are presented simultaneously as modern individuals and as natural creatures sharing the ecotope of the beach with other creatures in a both destructive and symbiotic way.

#### The beach in the postcolonial imagination

Of the numerous examples from contemporary literature outside the western tradition, in which this ecosemiotic potential of the beach has been used as a site

and source of imaginative literature, I refer to only three here from postcolonial literatures. In spite of their various cultural-historical contexts, these examples share a cross-cultural generative matrix which marks the beach as the place of a coevolutionary symbiosis between human and nonhuman life that provides a source of artistic imagination and cultural self-renewal. In the New Zealand writer Witi Ihimaera's novel Whale Rider, the adolescent heroine Kahu defiantly struggles against the patriarchal restrictions of Maori traditions represented by her grandfather but nevertheless helps Maori culture to survive by renewing its mythic connections to the sea embodied in its deep-rooted relationship to whales. Kahu overcomes the internal paralysis of over-conventionalized traditions by actively revitalizing the ritualized communication and bodily encounter with the whales that is symbolically brought to a crisis and acted out in the riding of the whale on the beach, which helps the whole group of stranded whales to find their way back to the open sea and thus momentarily restores the lost balance between culture and nature. The underlying interpretation of the relationship between tradition and modernity is similar in this novel to that in Silko's Ceremony: only by their continuing self-renewal can traditional forms of culture-nature symbiosis be maintained. In Whale Rider, the place of this selfrenewal is the beach as the life-sustaining contact zone between land and sea.

In First Nations Canadian writer Eden Robinson's Monkey Beach, the mythopoetic potential of the beach is explored in the indigenous context of Haisla culture on the North Coast of British Columbia. Again, it is an unruly adolescent girl who becomes the central agency of the narrative and a medium of rediscovering the beach as a heterotope to the everyday tragicomedy and modern fragmentation of life in the coastal village of Kitamaat. In short chapters switching between her first person narrator's voice and multiple other voices, the novel follows an irregular narrative pace moving between inside and outside, dreams and reality, the living and the dead. In her erratic search for her lost brother, the narrator is lead to Monkey Beach, where she catches glimpses of ghostlike superhuman creatures, the Sasquatch, shadowy monsters haunting the beach but, as human-animal hybrids, also embodying the radical ambiguities and deeper connections of self and other she is experiencing. Even though figuring only as a sporadically visited background rather than a central setting of the plot, the beach nevertheless forms a vital part of the imaginative story of modern adolescent awakening that the novel narrates.

Whereas Whale Rider and Monkey Beach adapt mythic elements of the beach into stories of female initiation and thus recycle collective cultural narratives in new forms of contemporary interpretation, South African writer Zakes Mda's The Whale Caller (2005) more decidedly turns away from received traditions, inventing its own, radically individualized and eroticized code of the beach. The novel is set in South Africa in the Hermanus region on the Western Cape, and unfolds in the relationship between the whale caller and a whale, whom he names Sharisha. This relationship develops into a powerful erotic attraction to the whale that competes with the nameless narrator-protagonist's relationship to Saluni, an outsider woman and village drunk, who has fallen in love with him as unconditionally as he has fallen in love with the whale. As central imaginative energy and core phantasy of the narrative, the intense zoophilic attachment between whale caller and whale transgresses the boundary between human and nonhuman life and challenges established civilizational self-concepts. What is especially foregrounded in the narrative is the musical instrument of the whale caller, the kelp horn, which is made from sea weed and is usually blown by the real whale crier of Hermanus to indicate the location of whales, but in the fictional context of Mda's novel serves as a medium of direct mutual communication between whale caller and whale. Already in the protagonist's youth, the kelp horn became the central symbol in the ceremonial rites of a religious community, the Church of the Sacred Kelphorn, which split off from the established congregation because of this nature worship, and in which the protagonist, on account of his special abilities, was promoted to Chief Horn Player. Associated with both biosemiotic and religious significance, the kelp horn represents a creative force of renewing human culture by reconnecting it to its natural origins:

A kelp horn ... was a natural musical instrument that took the congregation back to its roots. It was an instrument that celebrated the essence of creation. God would lend a sharper ear to the prayers of those who praised him to the accompaniment of an instrument that was shaped by His own hands through the agency of the seas. (8)

Later in his life, under the increasing pressures of tourism, commercialism, and social alienation, the whale caller leaves the congregation to pursue his own individual version of culture-nature communion in his special, almost

magical relationship to the whale Sharisha, who seems to reciprocate his love by responding to the sounds of his kelp horn. Viewed from the triadic model of cultural ecology, the kelp horn embodies an ecosemiotic counterdiscourse to alienated life in modern South African society but also a reintegrative interdiscourse that brings together cultural and natural ecologies through the medium of "nature-as-art." As a trans-species form of affection, this asymmetrical love relationship is put under severe pressure in the conflict with the insurmountable boundaries that remain, in spite of all zoophilic desire for border-crossing, between beach and sea, civilization and nature, human and nonhuman life. There is always the danger of the whale caller's "love" of Sharisha being an anthropocentric projection of his own unfulfilled desires and that the intensely imagined responsiveness of the whale remains within the wish-fulfilling fantasy world of the narrator-protagonist. This is illustrated in his pathetically exaggerated sexual jealousy when he observes a mating scene between Sharisha and a number of male whales, which he experiences as an act of betrayal and violation of narcissistic feelings rather than as a natural event:

A persistent male is in hot pursuit while others seem to give up hope. She flees into shallow waters, hoping that the male will give up the chase. But the male is eager to have her even at the risk of stranding himself. She rolls onto her back, and the male reaches her. She submits. They lie belly to belly and copulate. The Whale Caller tries to save Sharisha from this rape by blowing his horn and creating havoc in a discordant tune. The other males are not deterred by the discord; they charge towards the mating couple. The mating is brief and each of the males has her, then sails away. By the time the fourth male is lying belly to belly with her the Whale Caller has given up in exasperation. In no time the feast is over and Sharisha sails away; only her flukes can be seen above the water ... sailing further and further away from him. (48)

The whale caller is full of despair at first, then comforts himself by differentiating between humans and whales: "Unlike humans, whales don't indulge in such acts for recreation but for procreation" (48). He subsequently forgets this differentiation again when he imagines Sharisha to be pregnant and to "have a calf next time she returns from the southern seas" (48). As a witness to the scene of conception, he feels "blessed," since he "was a participant with his

horn. He feels like a father already" (48). Indeed, when he walks to the shore at night in his usual, ceremonial tuxedo with black tie, Sharisha is there again near the beach and the whale caller "joins in the music" of her whale song with his kelp horn, feeling an emotional unity with the whale that supplants all human relations. "Sharisha has indeed managed to make him forget Saluni" (49). The repeated shifts in interpreting his zoophilic attachment to the whale both reveal and conceal the contradictory implications of this attachment between trans-species unity and generic difference, between ecocentric and anthropocentric perspectives in which the character and story are entangled. Like Orpheus, the whale caller with his kelp horn is an artist translating the sounds of nature into a shared language between the human and nonhuman world, while simultaneously being left with the recognition that this nonhuman other remains finally ungraspable to human understanding and control. This is the condition for the tragic ending of the novel, in which both the whale caller's love for the whale, who is stranded on the beach and has to be killed by scientists, and his love for the woman, who dies an accidental violent death as a result of her undecided life between passion and society, do not survive the insuperable contradictions of their liminal existence.

Postcolonial narratives such as these mark the most recent stage in the evolution of the beach in literature as a contact zone between culture and nature that represents a source of complex human self-exploration and literary creativity. Like other tropes and topographies of liminality between civilization and "wild" spaces—such as forests, mountains, or deserts—the beach provides a rich ecosemiotic site for imaginative literature as a medium of cultural ecology, in which anthropocentric forms of human sense-making and ecocentric forms of nonhuman nature collide and coalesce in manifold and highly productive ways.

# Wound and Voice

# The cultural work of literary trauma narratives

Several times already, the relationship between a cultural ecology of literature and the experience of trauma has come up in different contexts. It therefore seems useful to address this relationship in a separate chapter. If literature can be described as the self-reflexive staging of complex dynamical life processes on the culture/nature boundary and thus as a particularly condensed, holistic form of "knowledge of life" (see above Chapter 13), this applies to trauma in particular, since trauma has been and is a part of human life and history both in its everyday and its extreme and spectacular forms. Indeed, it seems that imaginative literature has a special sensitivity and affinity to trauma, since one important way of describing its function from the perspective of cultural ecology is as a critical sensorium for civilizational pathologies, for states of psychic and social paralysis, for experiences of repression, victimization, and dehumanization, which literary texts typically take as a starting-point for their imaginative counter-discourses. It is therefore not surprising that theories of trauma rely so heavily on examples from imaginative literature—without, for the most time, explicitly reflecting on this circumstance.

It is useful here briefly to refer to the wider context of current trauma studies in order to elucidate the potential significance of literature and narrative in this transdisciplinary field of research and therapy. Trauma studies are characterized by a broad diversity of subjects, approaches, and directions, and by the contributions of various disciplines such as medicine, psychiatry, law, political science, history, and cultural studies. Nevertheless, a convenient starting point is the definition of trauma offered in Webster's

Dictionary: "1. An injury or wound to a living body caused by the application of external force or violence. 2.a) a psychological or emotional stress or blow that may produce disordered feelings or behavior (trauma of being left by mother; trauma of Civil War; b) the state or condition of mental or emotional shock produced by such a stress or by a physical injury" (Webster 2432). Important aspects of trauma, accordingly, are its original meaning as a "wound";1 the differences as well as the interconnections between physical and psychological, individual and collective, everyday and extreme forms of trauma; the disruptive effects of trauma on emotions, behaviors, values, and personal identities; and the potentially long-term consequences of the initial traumatic moment or experience for individuals as well as for cultures. Trauma involves experiences of fear, terror, and disempowerment that overwhelm the defenses and threaten to paralyze vital functions of a person or community.<sup>2</sup> Trauma invalidates habitual categories of order and sense-making systems, representing a non-integrated part of personal and collective memory that at once demands and resists integration and verbalnarrative representation.

There are manifold ways of professionally dealing with trauma, from local trauma centers to communal and global networks of trauma intervention and prevention. And it seems that these forms of direct medical, psychotherapeutic, economic, or sociopolitical help are much more obviously relevant to society than are narratives of trauma, which make trauma the subject of symbolic representation and storytelling. But perhaps this first impression has to be somewhat modified if one considers the ethical implications for the concepts of human personality, dignity, and integrity involved in different forms of therapy for traumatized individuals. One controversial but in a way logical direction within recent scientific trauma treatment is neurological research that aims at developing trauma pills, which help to erase and ultimately delete the memory of the traumatic experience altogether. There are serious attempts under way to achieve this goal, which aims at something like a reset-button for the brain to eliminate unpleasant and disruptive memories and thus to restore to the patient a coherently functioning personality. The implications may seem

<sup>&</sup>lt;sup>1</sup> For a detailed cultural-historical analysis of trauma as bodily and psychic wound, see Luckhurst.

The concepts of "communal" or "cultural trauma" are discussed in their controversial aspects e.g., in Alexander (2004) and Erikson (1995).

alarming, because the question here is whether the personality remains the same as before the treatment. But to its advocates, it does appear ethically justified in cases of particularly severe forms of suffering where no other cure or treatment appears possible.

On the other side of the spectrum, there is considerable evidence that it is of crucial importance for traumatized persons to find a way, whenever they are able to, to tell their story and to remember the past in order to psychologically and emotionally cope with trauma (Freud 1922). Following Freud, this view oscillates between the poles of "working-through" and "acting-out" the traumatic experience. "Working-through" means trying to come to terms with trauma as a thing of the past and finding ways into a liveable future, while "acting-out" means re-enacting the unresolved memories of the traumatic experience in a melancholic insistence on its unforgettability (LaCapra 2001). As Dominick LaCapra points out, both directions are not categorically opposed but rather complementary approaches to trauma and trauma narrative. Differently from techno-scientific medical interventions, the memory of trauma constitutes a defining element in these psychohistorical models of trauma narratives. Trauma narratives in this sense have an ethical relevance of their own in contributing to the representation and elucidation of personal biographies as well as of collective historical processes, whose catastrophes need to be confronted and remembered rather than repressed, both in terms of ethical respect for the victims and of preventing the blind repetition of mentalities leading into such catastrophes in the future. Memory and forgetting thus represent two contradictory but also complementary aspects of trauma and trauma theory, and trauma narratives are often responding to this double condition by providing stories that involve both suffering and survival, a liminal state between the threat of annihilation and the ability to live on after the trauma. In the words of Cathy Caruth, trauma oscillates "between a crisis of death and the correlative crisis of life; between the story of the unbearable nature of an event and the story of the unbearable nature of the survival" (Caruth, 7). Narratives of trauma are stories of victims who are also survivors of catastrophes. They are both about remembering and overcoming the original experience, both about the memory of the wound and about possible ways of living with its long-term effects.

## Trauma and the ecocultural dynamics of fictional texts

I am not dealing here, however, with autobiographical narratives of trauma victims, even though these can become part of the narrative material of literary treatments of trauma as well, but will look instead, from a cultural-ecological perspective, at some of the ways in which fictional literature is and has been dealing with the phenomenon of trauma. Literary narratives of trauma share with all literature its suspension of a direct reference to reality in the act of fictionalizing the traumatic experience. In the case of the holocaust as *the* collective traumatic event of the twentieth century, this has for a time resulted in a general verdict that the experience of the Shoah could only be legitimately narrated and authenticated by survivors as direct witnesses and that every other, and especially every non-documentary form of representation amounted to a betrayal of the victims and a distortion of the historical truth.

The creative response to the monstrous trauma of the Shoah, however, has been much more widespread throughout the later twentieth and into the twenty-first century than is often acknowledged. This is documented, for example, in the 2010 exhibition "Virtues of Memory: Six Decades of Holocaust Survivors Creativity" at Yad Vashem, where "creative works of close to 300 Holocaust survivors" were presented, "offering a look at the myriad ways Holocaust survivors have struggled to express themselves artistically after the Holocaust. Joining memoirs, testimonies and film, these artworks form a formidable expression of the Voice of the Survivors." The exhibition "showcases the artistic expression of the individual, yet bestows a legacy to others" (Yad Vashem). The transformative effect of artistic creativity in the representation of trauma, and its importance for the spiritual, if not the actual, survival of artists, however, had already become evident in artworks composed at the time during and immediately following the Shoah, exposing the machinery of death in experimental forms of art as in Viktor Ullmann's opera Der Kaiser von Atlantis (The Emperor of Atlantis) composed in Theresienstadt, where death himself refuses to continue his work in the face of omnivorous destruction, or in Paul Celan's "Todesfuge" ("Death Fugue"), in which elements of classical musical form and apocalyptic expressionism are exploding into shrill, all the more powerful metaphoric dissonances.

Cynthia Ozick takes her intertextual clue from this Celan poem in her story "The Shawl," which likewise presents the holocaust experience as an encounter with an omnipresent death culture, whose traumatizing reality can only be indirectly confronted in its aesthetic transfiguration. It is the very absence of any life-sustaining environment that forms the shadowy matrix of these textual underworlds and that leaves only desperate traces of life and survival in their radical artistic destabilization of all artistic control. Like "The Shawl," later narratives of the holocaust have deliberately used the literary imagination, including postmodern devices of metafiction and non-linear narration, for the purpose of representing ultimately unimaginable realities (Rohr, Donn). Robert Eaglestone especially has made the argument that postmodern aesthetics is most suited to expressing the trauma of the holocaust on account of its de-centering, deconstructive, and heterogenous forms of narration (Eaglestone). The uncanny presence of absence, and the destabilizing of ontology into hauntology (Derrida) become pervasive signatures of postmodern holocaust texts. On a more generalizing note, Danilo Kis maintains in his poetological theory Homo Poeticus that fiction can enhance the authenticity of the Real, bestowing what he calls a "deeper authenticity" to its representation than a merely documentary approach can achieve (Kis).

From a cultural-ecological perspective, the holocaust represents the most extreme case in history of a civilization destroyed by a systemic culture of death, which also threatens the death of art by depriving it of its very medium of creativity and survival in the living interconnectedness of all existence. However, even in view of this most monstrous historical challenge, art refuses to disappear, insisting on its responsibility to memory and shared life in the face of irreversible death and extinction. In Siri Hustvedt's novel *What I Loved*, the narrator Leo Hertzberg, who has lost most of his relatives in the holocaust, remembers them in a ritual in which he is playing a game with objects and photographs that are memorabilia of his dead relatives. The game brings alive their shadows as imaginative energies of forgotten lives that deeply move and overwhelm the narrator with their absent presence.

[w]hen I play my game of mobile objects, I'm often tempted to move the photographs of my aunt, uncle, grandparents, and the twins near the knife and the fragment of the box. Then the game flirts with terror. It moves me so close to the edge that I have a sensation of falling, as if I had hurled myself

off the edge of a building. I plummet downward, and in the speed of the fall I lose myself in something formless but deafening. It's like entering a scream—being a scream.

And then I withdraw, backing away from the edge like a phobic. I make a different arrangement. Talismans, icons, incantations—these fragments are my frail shields of meaning. The game's moves must be rational, I force myself to make a coherent argument for every grouping, but at the bottom the game is magic. I'm its necromancer calling on the spirits of the dead, the missing, the imaginary. Like O painting a loaf of beef because he's hungry, I invoke ghosts that can't satisfy me. But the invocation has a power all its own. The objects become muses of memory. (Hustvedt 364–365)

This mobile game of memory exposes the individual self to ever new destabilizing confrontations with a transindividual traumatic past. It is a precarious combination of acting-out and working-through of trauma, since it aims at the repetition and imaginary re-enactment of the past as a way of living with it. The ritual takes place within the narrated world, but it is also a parable of the narrative process itself, which like the mobile game of objects unfolds in highly ambivalent force-fields between absence and presence, past and future, terror and magic, chaos and order, mind and matter, self and other, traumatic annihilation and imaginative survival.

What such textual examples indicate is that fictional narratives of trauma have their own potential of representing and communicating trauma, which is different from other media and forms of discourse. Again, this potential can be contextualized within the framework of a cultural ecology of texts. One much-cited example in recent trauma studies is a scene from the Italian Renaissance writer Torquato Tasso's epic *Jerusalem Liberated*, which Freud summarizes in *Beyond the Pleasure Principle* in the following way:

Its hero, Tancred, unwittingly kills his beloved Clorinda in a duel while she is disguised in the armour of an enemy's knight. After her burial he makes his way into a strange magic forest which strikes the Crusader's army with terror. He slashes with his sword at a tall tree; but blood streams from the cut and the voice of Clorinda, whose soul is imprisoned in the tree, is heard complaining that he has wounded his beloved once again. (Freud quoted in Caruth, 2)

This is something like a *locus classicus* of psychoanalytically oriented trauma studies, which is mentioned by Freud to point out the repetition compulsion

that goes along with trauma and which has been taken up by recent trauma theorists to position themselves in continuity with but also in distinction from Freud. Cathy Caruth, in *Unclaimed Experience*, proposes that "the literary resonance of Freud's example goes beyond this dramatic illustration of repetition compulsion, and exceeds, perhaps, the limits of Freud's conceptual or conscious theory of trauma," and she extends his theory by emphasizing the voice of the speaking wound as an aspect of traumatic narrative, "the moving and sorrowful voice that cries out..., a voice that is paradoxically released through the wound" (Caruth 2). Laura DiPrete in turn extends Caruth's reading of this scene by adding the aspect of the *corporeality* of the traumatic experience. "This relationship [between trauma and voice] could be rethought and revised, expanded and complicated, once we add to the binary—voice and trauma—the element of corporeality" (DiPrete 9). Referring to a remark by Freud in Moses and Monotheism on trauma as a "Fremdkörper", a "foreign body" in the individual's consciousness and memory, DiPrete contends that traumatic memories escape mental representation and instead are written in and onto the body. "For a number of writers, bearing witness to traumatic experience means to articulate the complicated process from traumatic memory to conscious memory by attending not only to verbal signs but also to that nonverbal, sensorial, and perceptual experience that remains locked within the body" (DiPrete 10).

What I would especially highlight here is that the textual example that these theorists are relying upon to elucidate the nature of trauma is an example from *fictional* literature, which appears to provide an especially rich source of knowledge for trauma studies. A psychoanalytical theory of trauma, it seems, would thus have to be supplemented by a literary poetics of trauma. The cognitive richness and suggestive power of Tasso's scene is clearly linked to its status as imaginative literature, which functions as a complex medium of trauma representation not in spite of, but because of its fictional, metaphorical, and narrative form of textualizing human experience. The story provides an imaginative space of multiple conceptual blendings and metamorphoses, which allows Tasso's narrative to represent and interrelate the aspects of repetition compulsion, of giving voice to voiceless suffering, and of the corporeality of the traumatic experience that are described by trauma theorists. The scene contains core elements of a literary trauma narrative by

merging heterogeneous domains into a story-line in which the strange and the familiar, violence and love, self and other, subject and object, soul and body, conscious and unconscious forces, culture and nature, anthropomorphic and biomorphic forms are brought together in unexpected ways. What appears ethically relevant in this scene is that even though the perspective is that of the agent of traumatization, the crusading knight, the narrative attention and the reader's empathy are drawn to the fate and voice of the victim. Human agency is contextualized in the light of its unintended and unpredictable consequences.

What is equally remarkable—and has virtually gone unnoticed in trauma research—is that the traumatizing event affects not only the human but the nonhuman world, which in the image of the bleeding tree is shown to be violated here as well. The tree becomes a metamorphic other of the female heroine, and the wound of the human body merges with the wound of the tree in giving voice to otherwise silent suffering. It would therefore seem to make sense to extend the "corporeal" aspect of trauma pointed out by DiPrete toward the "trans-corporeal" (Alaimo 2010) aspect of the ecocultural and material connectivity with more-than-human life, in which human trauma and suffering are embedded, and which is specifically evoked in imaginative stagings of traumatic experiences. Alaimo's notion of trans-corporeality describes "interchanges and interconnections between various bodily natures," highlighting the "material interconnections of human corporeality with the more-than-human world" (Alaimo 2). Trans-corporeality accounts "for the ways in which nature, the environment, and the material world itself signify, act upon, or otherwise affect human bodies, knowledges, and practices" (Alaimo 7–8). Thus one fundamental eco-ethical implication of this ur-scene of Freudian trauma theory from Tasso's epic poem seems to be that human acts and experiences of traumatization are presented as intrinsically linked with the violation of a fundamental biophilic embeddedness of human beings in the vital force-fields and ecological interrelatedness of all life. A literary poetics of trauma, this classical example of trauma research suggest, would have to be connected on some significant level with a cultural ecology of trauma.

If we look from here into literary history at large, the scene from Tasso's epic represents no exceptional case, since in a broad sense, much of literary narrative has always been a post-traumatic form of narrative that is embedded in a holistic-dynamic field of "intra-action" (Barad) between human and

more-than-human, corporeal and trans-corporeal dimensions. The examples discussed so far, especially in the context of the triadic model of cultural ecology, all involve such stories of trauma and its collective, personal, psychosomatic, and material consequences. More generally speaking, Tasso's epic poem is part of a rich tradition of narratives of symbiogenetic co-evolution and human-naturemetamorphosis since the beginnings of literature (see Westling, Wheeler). A pivotal point in this tradition is Ovid's Metamorphoses, which assimilates ancient mythological tales, but also previous forms of metamorphosis poetry in the Hellenistic tradition such as Boios' Ornithogonia, one of the first collections of myths of metamorphoses of humans into animals, in this case, into birds. In its 250 narratives and fifteen books, Ovid's Metamorphoses mixes various genres ranging from epic and elegy to tragedy and pastoral in a mythico-historical account of culture-nature evolution from the creation of the world to Ovid's own time, featuring numerous characters but no unifying human hero. The collection rather amounts to a discontinuous assemblage of distinct but mutually entangled stories whose primary connecting agency is the overarching meta-narrative of geo-cultural history on the one hand, and the force of love on the other, personified in the God Amor, which signifies the motivating energies and strange attractor-fields linking human and nonhuman beings, the worlds of animate bodies and of inanimate matter in an overall process of continual emergence and shape-changing.

With these mythopoetic yet culturally self-explorative stories of coevolutionary genesis and transformation, Ovid's *Metamorphoses* became one of the most influential intertexts in literary history (Miller). The motif of the heroine Clorinda's metamorphosis into a tree in Tasso's epic poem, for example, is prefigured in the Daphne episode in *Metamorphoses*, Book I, which in turn links up with the ancient mythological motif of sea-nymphs that are transformed into trees, a motif which resurfaces in literary modernism, for example, in H.D.'s imagist-vorticist poem "Oread" (297):

Whirl up, sea—
Whirl your pointed pines,
Splash your great pines
On our rocks,
Hurl your green over us—
Cover us with your pools of fir.

Oread, the speaker of the poem, is a sea nymph transformed into a tree, hoping for the turbulent energies of water to restore the life-sustaining contact of her immobilized existence with the vital forces of elemental change and movement. In the poetic process, figurations of sea and land, fluid and solid, chaos and order, vortex and form violently collide in ways that nevertheless convey their underlying connectivity within its shape-shifting metamorphoses.

Other frequently circulated myths from Ovid's Metamorphoses that seem particularly pertinent in the context of trauma narratives are the myths of the Medusa and the Minotaur, both also frequently associated with autopoetic meanings. Medusa is a mesmerizing death-in-life figure, in which erotic traumatization transforms the human face into the shape of a monstrous serpentine hybrid, displacing beauty into a lethal attractor of regressive metamorphosis which turns the unwitting observer into stone. As Baumbach has demonstrated, the Medusa myth in its many ramifications has remained a powerful source of literary and cultural narratives up to the present (Baumbach). This is also true of the myth of the Minotaur, another mananimal hybrid with a human body and the head of a bull, which has become one of the archetypal stories of cultural trauma and of the dark undercurrents of art and society in both classical and modern literatures. The Cretan cult of the Minotaur as the center of secret power and sacrificial rites provides a narrative about the cultural evolution as being inseparably co-extensive with the evolution of nature. It is a core narrative of the literary imagination in which the symbiogenetic emergence of human and nonhuman life is part of its own foundational code, and in which the unconscious knowledge of biocentric origins is inscribed into the genesis of human culture—and, by autopoetic implication, into the generative matrix of imaginative texts. The transgressive excess of desire expressed in the sexual encounter of the Cretan King Minos' wife Pasiphae's with the sacred bull, from which the Minotaur is born, is coupled with the technological device of the architect, artisan, and artist Daedalus, whose designing of an artificial cow makes the fulfillment of that transgression possible. It is also the task of Daedalus to build an elaborate labyrinth as the central edifice of society, an ambivalent structure in which the Minotaur, as the traumatic bodily trace of that transgression, is both hidden away and venerated. In the labyrinth, the transgressive act is systemically repressed yet also memorialized in institutionalized form. The labyrinth is also the ceremonial dancing ground of Ariadne, half-sister of the Minotaur, who on the one hand participates in the secret knowledge of the labyrinth and on the other hand helps Theseus in deciphering the mystery and slaying the Minotaur, before later becoming the bride of Dionysus. In the continual retelling, retracing, and reinterpreting of this monstrous secret of culture-nature and trans-species connectivity as an inescapable part of deep cultural history, the Minotaur myth is an exemplary parable of the culturalecological dynamics of literary texts. It provides an imaginative space between the institutionalization and the violation of civilizational taboos, between anthropocentric repression and ecocentric transgressivity. Human and animal, cultural and corporeal, physiological and technological agencies are uncannily intertwined in the labyrinth of a cultural prison-house constructed by an artist who is both part of and detached from the grotesque civilizational tragedies unfolding within its walls. The myth has influenced numerous authors, at first and for a long time as an example of human aberration, but especially since the twentieth century also as a parable of the modern artist's traumatic alienation from and yet inescapable dependence on society. In these modern texts and artifacts, as Theodore Ziolkowski points out in examples ranging from Picasso to Dürrenmatt, the Minotaur becomes a second, darker self of the artist, while the labyrinth in its infinite and inescapable subsections suggests the threatening sociopolitical realities of the twentieth century (Ziolkowski).

In different traditions of folklore and popular myths as well, the metamorphic trauma narrative appears in various shapes, such as in many of the fairy-tales collected by the brothers Grimm. Hansel and Gretel, to take one frequently cited example, relates the traumatic loss of parental love and anxieties of cannibalism, which are embedded in highly ambivalent force-fields between village and forest, society and wilderness, familiarity and strangeness, the death of emotions and the life of material things. In Thomas Pynchon's Gravity's Rainbow, for example, the tale of Hansel and Gretel is combined with various figments from the Medusa and Minotaur myths in an intricate texture, in which these and other myths representing "different versions of Homo monstrosus... cyclops, humanoid giraffe, centaur" (Ziolkowski 82) are signifiers of an eco-cultural unconscious that is enmeshed in the labyrinths of modern civilization. In Siri Hustvedt's What I Loved as well, the tale of Hansel and Gretel is integrated into a complex process combining narrative and visual

art, shaping the ways in which the novel tries to come to terms with both collective and personal traumas.

In a mythico-religious context, another highly relevant cultural trauma narrative, which has likewise been reactivated in many modern and postmodern versions, is provided by the medieval Celtic-Christian Grail myth of the wounded fisher-king and the corresponding wasteland motif. Here again, the human wound corresponds to the wounded land, and the corporeal suffering to a trans-corporeal crisis of life, which can only be overcome by retracing in narrative the wound to its source, and by atoning for the anthropocentric violation of life's balance though a new sense of communal and ecocultural connectivity. In the context of romantic literature, the ecological trauma narrative reaches a high point in Coleridge's *Rime of the Ancient Mariner*, in which the anthropocentric hubris of the protagonist toward nonhuman life results in large-scale catastrophe and environmental apocalypse that can only be survived by sharing this painfully gained knowledge and experience in the compulsory repetition of magical story-telling.

In the twentieth century, among the most radical examples of modernist trauma narratives are Kafka's stories of traumatic alienation both in the anonymous labyrinths of modern bureaucracies and in the grotesque deformities of personal family constellations. Kafka's "Die Verwandlung" ("The Metamorphosis") is an especially illuminating case in this context. In the story, Gregor Samsa's monstrous self-alienation is manifested not only in his metamorphosis into a giant cockroach, but very pointedly in the painful and never-healing wound in his back caused by an apple that his angry father threw at him and that remains sticking in his body. Gregor's wound is a psychosomatic symptom of the broken father-son relationship and, more generally, of the victimizing forces that determine Gregor's life "behind his back." The story contains the essential elements of trauma narratives in a condensed form: the repetition compulsion in the repeated acts of Gregor's victimization; the voice of the victim in the focalization of the third-person narrative on Gregor; the uncanny connectivity of all life in the hybridity of human and insect; the corporeality of trauma in Gregor's never-healing wound; and the trans-corporeal implications of this wound signifying the perverted relationship to nature in the apple thrown at Gregor by his father. As a product of fertile nature, the use of the apple as an object of aggressive

dominance points to the alienated form of civilizational power personified by the father, from which Gregor's social trauma originates.<sup>3</sup> It thus also points to the ecocultural framework of trauma narratives mentioned above: Like the other examples cited here, the story positions the dynamics of trauma, alienation, and human isolation within a biophobic civilizational context that denies the vital interconnectedness of the human with the nonhuman sphere, of mind with body, self with other, culture with nature. It is this very denial that is counteracted in the imaginative dynamics of literary texts, which reconnect the culturally separated domains not only on a thematic plane but as a generative matrix of their multi-layered aesthetic processes.

#### Trauma narratives in American literature

Within American literature as well, trauma has been an important conditioning context and frame of reference for its fictional scenarios. As has been seen, in Hawthorne's *The Scarlet Letter*, the legacy of puritanism in American society appears as traumatizing prison-house of a biophobic civilization; in Melville's *Moby-Dick*, Ishmael's suicidal mood on land motivates him to his sea-journey; Bartleby is deeply traumatized by the capitalist world of nineteenth century Wall Street; Hemingway's Jake Barnes in *The Sun Also Rises* is only one of the author's wounded heroes who are traumatized by World War I; and the wasteland motif of T.S. Eliot's eponymic poem recurs in Hemingway's story "Big Two-Hearted River" in the burnt-down country which reflects the protagonist's scarred memory, or in Fitzgerald's *Great Gatsby*, in which the hectic pursuit of happiness in the Jazz Age contrasts with the industrial underworld of the Valley of the Ashes; <sup>4</sup> in Faulkner's *The Sound and the Fury*, not only the mentally retarded narrator of the first chapter, Benjy, is heavily traumatized by an inescapable past, but his brothers, too, are entangled in vicious circles of

<sup>&</sup>lt;sup>3</sup> Of course, the motif of the apple here also points to the Biblical myth of the Fall, turning the parable of transgressive seduction and knowledge into a menacing satire and grotesque parody.

<sup>&</sup>lt;sup>4</sup> As Christopher Schmidt has demonstrated, a "poetics of waste" pervades much of experimental modern and postmodern poetry (Schmidt). Susan Morrison has extended the historical scope of such a poetics of waste to include examples from medieval to modern literature, elucidating conceptual interferences between nonhuman and human "waste" as an issue of both a material poetics and an ethics of matter (S. Morrison).

depression and mutual isolation. These are traumas of everyday life, but also symptoms of a deeper crisis of the larger culture, which manifests itself on the level of individual consciousness and personal communication.

Novels like those of Faulkner impressively demonstrate the possibilities of experimental fictional writing about trauma, as well as its cultural-ecological potential. They illuminate the connections between internal suffering and external fate, mind and body, conscious and unconscious forces within the self, between the disruption of personal order and identity and the desperate attempt at reconstructing such order. Faulkner's novels invite readers to share experiences with fictional characters that they couldn't share in other modes of discourse; to feel empathy or, as LaCapra has it, "empathic unsettlement" (LaCapra XI) toward helpless outsiders of society like Benjy, whose unarticulated bellowing is like the undecipherable sound of "all voiceless misery under the sun" (Faulkner 1971: 280). Benjy embodies the place of humans within the larger scale of living creatures, whose wounds and voices remain silent within the official language and discourses of civilization but which are articulated in the narrative processes of imaginative texts. Readers are enabled to follow the fragmented, achronological stream of Benjy's unarticulated sensations and emotions and symbolically to share in the "pain of others" (Sontag) without being able to distance themselves into illusionary linguistic or intellectual control or escaping into melodramatic voyeurism.

Trauma has thus been a surprisingly widespread issue and aesthetic challenge in American literature, reflecting disruptions in cultural history and a radical critique of the American Dream as a shaping myth of American culture, in which there seemed to be no place for historical and personal trauma. Literary trauma narratives gained renewed urgency in the later twentieth century in novels about the global catastrophes of World War II, such as Joseph Heller's *Catch-22* or Kurt Vonnegut's *Slaughterhouse-Five*, and about the holocaust, such as Isaac Bashevi Singer's *Enemies: A Love Story*, Walter Abish's *How German Is It?*, or Cynthia Ozick's *The Shawl*. Experiences of cultural and personal trauma also shape the literatures of cultural minorities within the U.S., in which trauma became a defining aspect of the ways in which these minorities recuperated their political history and their cultural traditions. The historical traumas of the displacement of indigenous peoples, as well as the long years of Black slavery, came to be seen as shaping events

of the histories and cultures of Native Americans and of African Americans, respectively, providing a narrative source and paradigm for the imaginative reconstruction of long-term experiences of humiliation, victimization, and disempowerment, but also for processes of rediscovery, re-empowerment, and personal and cultural regeneration.

# Historical trauma and imaginative regeneration: Leslie Marmon Silko, *Ceremony*

An example in which the ecocultural implications of trauma narratives become especially visible is Leslie Marmon Silko's *Ceremony*. In the novel, several traumatic experiences are interwoven, taking as a starting point the situation of the protagonist Tayo, who has returned from World War II:

Tayo didn't sleep well that night. He tossed in the old iron bed, and the coiled springs kept squeaking even after he lay still again, calling up humid dreams of black night and loud voices rolling him over and over again like debris caught in a flood. Tonight the singing had come first, squeaking out of the iron bed, a man singing in Spanish, the melody of a familiar love song, two words again and again, "Y volveré." Sometimes the Japanese voices came first, angry and loud, pushing the song far away, and then he could hear the shift in his dreaming, like a slight afternoon wind changing its direction, coming less and less from the south, moving into the west, and the voices would become Laguna voices, and he could hear Uncle Josiah calling to him, Josiah bringing him the fever medicine when he had been sick a long time ago. But before Josiah could come, the fever voices would drift and whirl and emerge again—Japanese soldiers shouting orders to him, suffocating damp voices that drifted out in the jungle steam, and he heard the women's voices then; they faded in and out until he was frantic because he thought the Laguna words were his mother's, but when he was about to make out the meaning of the words, the voice suddenly broke into a language he could not understand; and it was then that all the voices were drowned by the music loud, loud music from a big juke box, its flashing red and blue lights pulling the darkness closer. (5–6)

This opening passage of the novel, which shows the protagonist in a hospital bed, describes characteristic symptoms of a post-traumatic stress disorder—

sleeplessness, severe anxiety, fragmented perception and self-perception, a breakdown of psychological defenses in an uncontrolled flood of memories, and an inability to interpret and understand the meaning of what has been happening to him. The passage conveys a subjectivity disintegrating under the pressure of overwhelming memories, and exposed to chaotic feelings of disorientation and powerlessness, which are expressed in the imagery of breaking waves and near-drowning. In its blurred and shifting focus on fragmented sounds, visions, and memories, the scene creates the effect of a "white noise" in the brain, reflecting a chaotic collapse of the boundaries between past and present, internal and external worlds, conscious and unconscious self. As a result of heavy medication, the substance of his personality seems to dissolve into unreality, making him feel like "white smoke" (Silko 14). "Their medicine drained memory out of his thin arms and replaced it with a twilight cloud behind his eyes" (15). Self and environment become one blurred field of perception and self-perception, which fuses waking moments with memories of the past, the material environment with fragments of mental processes. Mixed with his war memories of Japanese soldiers is the memory of his uncle Josiah and of the voice of his mother—who has left him orphaned as a child and this memory is in turn extinguished by the juke box with its red and blue lights as an empty signifier of a trivialized American Dream of happiness. One conspicuous symptom alongside sleeplessness, alcoholism, aimless passivity, and the inability to communicate, is Tayo's repeated und uncontrollable vomiting, which triggers the return of memories that continue to bring back extremely painful scenes from the past. The strongest of these memories is the shooting of captured Japanese soldiers, one of whom Tayo believes to be his own uncle Josiah:

When the sergeant told them to kill all the Japanese soldiers lined up in front of the cave with their hands on their heads, Tayo could not pull the trigger. The fever made him shiver, and the sweat was stinging his eyes and he couldn't see clearly; in that instant he saw Josiah standing there; the face was dark from the sun, and the eyes were squinting as though he were about to smile at Tayo. So Tayo stood there, stiff with nausea, while they fired at the soldiers, and he watched his uncle fall, and he knew it was Josiah; and even after Rocky [his brother, who is much more patriotic than Tayo and is wounded and killed soon afterwards] pushed him toward the corpses and

told him to look, look past the blood that was already dark like the jungle mud, with only flecks of bright red still shimmering in it. Rocky made him look at the corpse and said, "Tayo, this is a *Jap*! this is a *Jap* uniform!" And then he rolled the body over with his boot and said, "Look, Tayo, look at the face," and that was when Tayo started screaming because it wasn't a Jap, it was Josiah, eyes shrinking back into the skull and all their shining black light glazed over by death. (8–9)

In the chaotic flow of his semi-conscious stream of memories, Tayo again and again returns to this scene which he desperately tries to avoid. It is the scene in which his "madness" began as a shock reaction to the horrors of war, a mental disturbance and hallucinatory hyper-awareness in which the unknown Japanese soldier is merging into Tayo's beloved uncle Josiah, who initiated him into the beauty and the mysteries of nature and of Indian traditions. As Tayo learns later, Josiah did indeed die at home during those shocking experiences of Tayo in the war. Symbolically speaking, the killing of the Japanese soldier by the Americans amounts to killing Tayo's own life and culture; destroying the "enemy" becomes a self-destructive act which leads Tayo into the death-in-life state in which he finds himself, after his return from the war, at the beginning of the novel. In his madness and hypersensitive misunderstanding of the situation, Tayo nevertheless reacts to a truthful signal from his unconscious, displaying a deeper understanding of the interconnections between the foreign war scene and his own cultural identity. Two apparently separate events—the shooting of the Japanese soldier in the Pacific, and the traumatic experience of Indians on reservations in America—are brought together here in such a way that the destructive forces of the war and the destructive forces which lead to the loss of Indian identity and traditions are linked to each other.<sup>5</sup>

Since Tayo's reactions are at first primarily unconscious and uncontrolled, he does not fully realize this connection before he is dismissed from hospital and starts on his quest for the lost Laguna traditions in the healing ceremony which constitutes the process of the novel. After a time of aimless and futile existence, during which he spends his life as a jobless drifter and alcoholic with other war veterans in bars, Tayo consults a traditional healer, who, however,

A cultural-historical perspective on such interdependencies of traumatic memories is provided in Rothberg, Michael. Multidirectional Memory. Remembering the Holocaust in the Age of Decolonization, 2009.

is unable to help him. Tayo subsequently turns to the modern-day shamanist Bretonie, who advises him to search for a new ceremony which does not simply repeat the past but must combine the virtues of tradition and the regenerative force of nature with the realities of modern life to be effective. It is only when Tayo performs this ceremonial journey, which both activates and reinvents ancient Indian tales and rituals about nature and landscape, love and eros, as well as the imaginative power of story-telling, that his paralyzed vital functions are gradually restored (Sarkowsky).

But Tayo's personal therapy and healing through the ceremony of story-telling remains tied to the more general theme of war, trauma, and violence that is introduced at the novel's beginning. The vicious circle of violence can only be broken when its origins are traced back to the exploitation of natural resources by the technological war machinery of white civilization, to be replaced with a renewed vision of culture and nature evolving from the shared ecosemiotic space of a planetary ethics and consciousness. As Tayo is approaching the uranium mines in Los Alamos, the site of the development and first testing of the atomic bomb which was dropped on Japan soon after, he consciously recognizes the connection he had made in his traumatized unconscious:

There was no end to it; it knew no boundaries, and he had arrived at the point of convergence where the fate of all living things, and even the earth, had been laid... He walked to the mine shaft slowly, and the feeling became overwhelming: the pattern of the ceremony was completed there... He cried the relief he felt at finally seeing the pattern, the way all the stories fit together—the old stories, the war stories, their stories—to become the story that was still being told. He was not crazy; he had never been crazy. He had only seen and heard the world as it always was: no boundaries, only transitions through all distances and time. (246)

The process of the protagonist's quest, which culminates in this moment of insight, is reflected and communicated in the narrative structure of the novel. Starting out in the chaotic, disruptive, achronological mode of trauma narrative, it gradually shifts toward a more coherent mythopoetic rhythm of story-telling that is prefigured in the metatextual frame of the novel, the myth of the spiderwoman as aboriginal story-teller and creator of the world (cf. Sarkowsky). Her narrative power precedes the writing of the modern novel,

signifying a mythopoetic source of the imagination that brings forth always new worlds, including the world of the novel and the reality that it depicts (Silko 1):

Thought-Woman, the spider, named things and as she named them they appeared.

She is sitting in her room thinking of a story now

I'm telling you the story she is thinking.

The transformative power of traditional story-telling is brought together in the novel with modern and postmodern techniques of self-reflexivity, with intertextual webs of signification and associative stream-of-consciousness writing, conveying the complexities of a trauma narrative that is also a narrative of therapy and regeneration.

The fictional representation of trauma in *Ceremony* thus helps to achieve several things: the mimesis of a complex, life-threatening experience of radical human self-alienation; the contextualization of the symptoms of this experience as relevant for the state of modern civilization; the process of cultural self-renewal though the creative reactivation of a forgotten awareness of culture-nature interdependency in a ritual journey in which the initial state of traumatization is symbolically overcome in the search for a new beginning; and the imaginative sharing of this experience by the reader, which implies the paradox of a transcultural openness and translatability of the fundamentally untranslatable trauma narrative.

### American trauma literature in the twenty-first century

In the early twenty-first century, trauma continues to be a conspicuous focus of American literature, which on the one hand seems to respond to and co-evolve with the development in trauma studies in science, medicine, and psychology,

and on the other hand to reflect the deeply felt impact of the terrorist attacks of 9/11 on the American imagination. In Philip Roth's The Human Stain, for example, multiple traumas structure the novel's plot and the psychology of the characters: the trauma of racial identity in the male protagonist Coleman Silk; traumas of childhood abuse, domestic violence, and the loss of her children in a fire in the female protagonist Faunia Farley; as well as veritable PTSD in her husband and Vietnam war veteran Lester Farley, which is depicted in all its characteristic clinical symptoms in a highly unsettling interior monologue. All of the characters respond to their traumas by adopting the roles of imaginary second selves as a strategy of self-protection and survival: Coleman Silk the role of the Jewish intellectual; Faunia Farley the role of the illiterate underclass woman; Lester Farley the role of a mad war victim and bizarre Thoreauvean natural man. In the crisis of these roles that the novel unfolds, the divisions and ideological fault lines of American society are revealed. Once again, this crisis is also a chance for an at least temporary revitalization of the characters' quietly desperate lives, which is primarily expressed in the love affair of Coleman Silk with Faunia Farley; not only is her name reminiscent of the nature spirits of Greek mythology, but in her erotic power and intimate contact to nature and animals she represents an inspirational dionysian energy and ecotherapeutic counterforce to the brutal experiences of mutual aggression and traumatization.

The attacks of 9/11 have probably been the most spectacular event that has shaped the literary response to trauma in the early twenty-first century. I am not dealing here with this response in any representative way but only look briefly at how this collective national shock and global media event is related to writing about trauma as we have discussed it so far. Like every traumatic event, 9/11 was experienced as exceptional, unheard of, and unimaginable, raising the fundamental question of its representability in language and art. In political and media reactions, this initial sense of shock and incomprehensibility, however, was soon replaced by a new moral-ideological purpose and belligerent national self-assertion, and the crisis of the most deeply-held beliefs about America as a land of invulnerable power and limitless opportunity was repressed in the openly declared crusade against an external enemy, the war on terror. In literary reactions, however, the trauma was confronted in its disturbing psychocultural and ethical complexities, and

this different attitude and response to the traumatic event went hand in hand with an explicit or implicit critique of its moral-ideological simplification and political instrumentalization.

From a perspective close to his autobiographical self, Art Spiegelman's In the Shadow of No Towers tries to capture in a collage-like use of the genre of comics or "comix," as he calls it, an event which clearly resists any conventional visual and textual appropriation by art. And yet this self-reflexive, multigeneric, and metatextual gesture indicates one way in which this paradox of necessary yet impossible representation of trauma can be aesthetically approached. Jonathan Safran Foer's Extremely Loud and Incredibly Close likewise decenters the response to trauma into different perspectives, linking 9/11 to earlier forms of collective traumatization, e.g., the bombing of the cities of Dresden and of Hiroshima in World War II. Don DeLillo's Falling Man as well deals with the traumatizing effects of 9/11 on survivors and the question of its artistic representability. The narrative follows no clear or coherent plot line, deliberately confuses the identity of the individual characters, and includes disruptive as well as repetitive and circular elements that indicate the loss of personal and narrative control over the material. In the blurring of the relationship between reality and fiction, between identity and otherness, internal and external world, the novel approaches the complexities of trauma without reducing them to any easy aesthetic and ethical solutions. Even the terrorists are included in this shifting of perspectives, which conveys the sense of a shared common humanity that becomes even more urgent and evident at the moment of its most terrible violation.

The missing links, open gaps, and indeterminacies of DeLillo's Falling Man are the sources for the readers' interpretation of the events, allowing them access to deeper dynamics and complexities of trauma but at the same time confronting them with the limits and indeed the impossibility of any definitive discursive knowledge and textual appropriation of trauma. A cultural-ecological view of this and other fictional narratives of trauma as a cultural pathology of modern civilization specifically focuses on the correlation between mental and physical, personal and collective, cognitive and affective features of trauma, which can be brought together in imaginative literature in non-appropriative ways precisely through the aesthetic transformation of cultural knowledge and discourse. In a cultural ecology of trauma narratives,

therefore, the aesthetic dimension of texts is not a negligible redundancy but a vital part of their discursive force, which makes possible the complex, multi-layered, and multiperspectival exploration of trauma that they perform. Imaginative trauma literature is not just a vivid illustration of otherwise available scientific trauma knowledge but a particularly rich and culturally relevant form of trauma knowledge in its own right.

# Absence and Presence

Both in relation to trauma narratives, and to epistemological questions of defining and imagining the "real" in changing spatiotemporal contexts, the dynamics of absence and presence in literature represents another relational polarity that can help to elucidate the workings of literature as cultural ecology. Absence and presence have been recurrent issues in literary and cultural history but have become especially prominent in postmodernism. The absence of a "transcendental signified" constitutes one of the hallmarks of the postmodern episteme, which was primarily interpreted as an ontological absence of the referent from language, of the world from the text. It was only with the ethical turn of later postmodernism that the relation of absence and presence gained new concreteness and existential significance in the context of holocaust and trauma studies. Discourse was historicized and reconnected to personal and collective experiences, which, even though they were never fully graspable in language and the text, nevertheless constituted inescapable manifestations of the Real. The indeterminacy of the signifier, with its elusive game of absence and presence of meanings, no longer designated a purely selfreferential productivity of écriture but an explorative semiotic process, which was set free in special intensity and productivity in literary and aesthetic forms of discourse. The relationship between discourse and trauma represented an extreme version of the existential relationship between mind and body, language and experience, self and other, which was the core domain of ethics. As recent developments in ecocritical theory demonstrate, this ethical agenda has been extended toward an ecological perspective in new directions of ecocriticism and cultural ecology (Goodbody and Rigby, Müller and Sauter). The rendering present of absent worlds is a fundamental feature of literary texts. In their imaginative scenarios, absence and presence pose not merely

an epistemological issue but represent transformative agencies of cultural memory, ethics, and ecology.

As has been argued throughout this book, imaginative literature, in its selfreflexive, depragmatized use of language and narrative, can bring together in complex images and fictional scenarios what is kept apart in the institutionalized discourses of a culture. The act of fictionalizing, that is, of presenting an absent world as if it were present, has been an omnipresent feature of human culture since the beginning of cultural evolution (Iser). Storytelling and fictionalizing open up possible, alternative worlds in which what remains ungraspable and unrealized in a historically given individual or collective reality can be symbolically articulated and integrated into the ecology of cultural discourses. Past and future, the time before one's birth and after one's death, the dimensions of dreams and the unconscious, the alterity of other individuals, cultures, and historical periods, and indeed of the more-than-human world of nature, are inaccessible in straightforward realistic or pragmatic forms of discourse but can be imaginatively presented in the form of fictional texts. In opening the civilizational system toward its defining exclusions and absences, literature contributes to continuous cultural self-renewal by turning these systemic absences into linguistic and communicational presences. In the following sections, I will again mainly rely on examples from American literature to indicate this transformative relation of absence and presence as part of the cultural-ecological dynamics of imaginative texts.

# Classic cases: Hawthorne, Melville, Kafka, Beckett, Morrison

My first case in point is, once more, Hawthorne's *Scarlet Letter*, in which the play of absence and presence is already visible in the conception of the plot. The main story of Hester Prynne's fate as an excluded outsider yet significant presence in early American puritan society is framed by an introductory sketch, "The Custom-House," in which the author relates his experiences two hundred

<sup>&</sup>lt;sup>1</sup> In Mark Turner's conceptual blending theory, the rendering present of absent realities is even considered one crucial step in the development of human culture as a semi-independent sphere within the overall process of evolution (Turner 2006).

years later as a custom house officer in Salem from 1846 to 1849. Above all, the narrator deplores in satirical acrimony the stifling influence of the politicalbureaucratic routines on his literary imagination. A decisive turning point is his visit one day to the archives in the upper story of the Custom-House, where among forgotten dusty documents he finds a manuscript by one of his predecessors as Custom-House surveyor in the eighteenth century. This manuscript relates in a short version the remarkable "life and conversations of one Hester Prynne" (62) from the middle of the seventeenth century, which provides the core narrative of the novel. The manuscript is wrapped up in an official document in a package which also contains a piece of "fine red cloth" (61) in the form of the capital letter A. This material signifier of crypto-official writing irresistibly captures the narrator's attention, as if there was "some deep meaning in it, most worthy of interpretation, and which, as it were, streamed forth from the mystic symbol, subtly communicating itself to my sensibilities, but evading the analysis of my mind" (62). As if under a spell, the narrator picks up the mysterious symbol and instinctively places it on his breast, an act which produces an unexpected, shock-like effect of "burning heat... as if the letter were not of red cloth, but red-hot iron" (62). At this point of transition from reality to fiction, the narrator encounters an absent world of history which gains a vital intensity that is missing from his present custom house existence peopled by lifeless bureaucrats. The electrifying energy emanating from this enigmatic signifier announces the return of the narrator's long-dormant imagination and enables him finally to liberate himself from the repressive atmosphere of the custom house and write the novel The Scarlet Letter. This is clearly an autopoetic scene, which self-reflexively stages the emergence of narrative from the recuperation of significant absences of the cultural world of memory, vitality, and creative energy. The sign of the scarlet letter becomes an absent presence in the narrator's experience, which he translates into the central imaginative force of the novel. The modern text of the Scarlet Letter is revealed as a palimpsest in which the historical sequence is reversed, and in which the oldest layer is deliberately foregrounded and turned into the main story and symbolic texture of the novel.

This transformative relationship between absence and presence in the autobiographical Custom-House sketch provides a metafictional framing of the narrative itself, which follows its own dynamics of absence and presence.

As has been seen, from her first appearance, the protagonist Hester Prynne is associated with both cultural and natural creativity—the scarlet letter on the breast of her gown was sewed by herself in an "artistic" manner (Hawthorne 61, 80), and is in turn linked with the child in her arms and the wild rosebush growing at the door of the prison-house as "biosemiotic" (Wheeler) markers of natural creativity. After an absence of two years, her husband Chillingworth happens to return to Boston on the very day of Hester's public humiliation, and immediately decides to devote his whole life to the search for Hester's unknown lover. Chillingworth soon suspects the young pastor Arthur Dimmesdale to be Hester's secret lover and moves in with him, acting in the disguise of physician and therapist as his mephistophelian double who is out to destroy him. Dimmesdale is unaware of Chillingworth's identity as Hester's husband, whose presumed absence turns into a sinister presence in Dimmesdale's life that undermines his whole personality. On the other hand, Hester and Pearl suffer from the absence of the lover and father, even as they transform their outsiders' existence into an intellectually anarchic yet also, in Hester's case, an ethically responsible form of existence. The resolution of the tensions and conflicts in the novel is brought about by a process in which the various absences that structure the plot and the character relations are reconnected to the present and to a shared reality. That way, the culturally excluded is integrated into a revitalized ecology of individual and communal life. The public revelation of the scarlet letter, which has grown as a psychosomatic sign on Dimmesdale's breast, in the final climactic scene of the novel is thus only one moment in a textual process which turns the absent presences of the civilizational system into shaping agencies of the narrative process.

Differently from the postmodern paradigm and the notion of a primal absence, the signifier of the scarlet letter represents not only a negative energy of disruption and endless deferral of meaning but also a force of connectivity and intense, even magical interrelatedness. In a cultural-ecological view, the apparently self-referential play of cultural signifiers is embedded into living energy fields of ecosemiotic meanings, which connect heterogeneous domains of nature, culture, and the human mind. Absences are transformed into momentary presences, in which the reconnection of cultural to natural processes, of the cultural memory to the biocentric memory of the human

species takes place and is constantly reenacted as the source of literary creativity.

Another illuminating example is again Herman Melville's "Bartleby, the Scrivener," discussed above already in a different context. In a poststructuralist view, Bartleby is a figure of absence, who undermines any attempt at analysis, explanation, and communication, "based as they are on the fantasy of presence," as MacLure and others argue in their comments on a Derridean reading of the story (MacLure et al. 2010: 5). In this view, the strangely omnipotent powerlessness of Bartleby allegorizes the paradoxical power of literature and artworks "to voice secrets that philosophy and other disciplines cannot catch from within their own confines," and this power "to 'perturb' the conventional structures of Enlightenment reason" has made texts like "Bartleby" exemplary sites of poststructuralist theories (MacLure et al. 2010: 5).

As pointed out above, a cultural-ecological reading of "Bartleby" would go along with this view of the story and its main character as representing literature's critical power of subversion and perturbation of conventional structures of Enlightenment reason. But it would complement the notions of radical absence and absolute difference by a concept of connectivity, of fundamental interrelatedness and interaction as ecological conditions of all life and discourse. Cultural ecology views connectivity not in terms of conventional or otherwise enforced logocentric structures but as features of living processes and conflictual energy fields which, in literature and art, become sources of aesthetic creativity. Connectivity and relationality have been under suspicion by poststructuralism of falsely stabilizing and harmonizing discursive cultural practices. But connectivity and relationality, in an ecological sense, are not to be confused with closed structures and the conformist pressures of sociocultural power systems but, on the contrary, designate forces of interaction, tension, conflict, and complex feedback dynamics that are a fundamental feature of all life. As an ecological force within language and discourse that reconnects what is culturally separated, literature combines a critical-deconstructive with a connective-reconstructive dynamics of texts in their relation to the general culture.

In his bizarre withdrawal from the world and from life, Bartleby illustrates the absence of humanity from its self-created civilizational structures. But the absence of shared meaning and humanity is not absolute. There are moments of short, if inconclusive communication—such as when the narrator finds Bartleby in his office on a Sunday or when he proposes various possible jobs to him, offers which Bartleby does not unconditionally reject. And when Bartleby is already in the prison of the Tombs, he greets the lawyer with the words: "I know you," (42) indicating an almost uncanny knowledge of the narrator's deeper self, an existential affinity and kinship of human beings even in a world literally and symbolically dominated by walls. At the end of the story, when the narrator finds Bartleby's dead body in the prison yard, the cold meaninglessness of this human alien's fate seems to be confirmed. But in the narrator's final encounter with Bartleby, a moment of communication occurs within a larger biosemiotic connectivity of human with more-than-human life, which translates the absence of meaning into symbolic, momentary presence for the narrator and the reader.

Many more examples could be given from European and American literature of this dialectic of absence and presence as a generative signature of imaginative texts, which semiotically empowers the culturally excluded and reinscribes it into the ecology of cultural discourses. In German-speaking literature, Kafka would again be a prime example, exploring the search for identity in a labyrinthine world dominated by absent centers of power as in The Castle or The Trial, and especially in the parable "Vor dem Gesetz," "Before the Law," in which the man from the country never gets access to what he defines as the source and center of his life's meaning. In British literature, Samuel Beckett's Waiting for Godot is probably the most famous example of a central absence dominating the lives of literary characters, illustrating the fate of modern humans being exiled from their own constructions of meaning and presence. In American literature, this paradox of absent presences as narrative agencies is again exemplified, for example, in Toni Morrison's Beloved, where collective absences of the cultural system—the forgotten victims of slavery, the death of love, the obliterations of cultural memory—are turned into textual presences that break up paralyzed psychological states, personal relationships, and cultural realities. It is also at work in post-9/11 literature, in which the paradox of trauma narratives drawing on the relation of absence and presence are pointedly epitomized in the very title of Art Spiegelman's graphic narrative *In the Shadow of No Towers.* 

# Absence, presence, and the music of life: Richard Powers, *The Time of Our Singing*

I would, however, like to turn in the concluding part of this chapter to a novel which deals with absence and presence in a more general framework of history, trauma and art: Richard Powers' The Time of Our Singing (2003). The novel is unusual in its scope in that it interrelates history, music, and physics, more specifically the transatlantic history of racism, classical music, jazz, and the relativity theory of time in a complex interpretation of twentieth century civilization. In the novel, Powers translates into narrative structure not only historical formations and relativity physics but also the "music of life" which is also a conceptual metaphor employed in the systems-biological life sciences, to the extent that they emphasize a complex-relational rather than genetic-deterministic interpretation of life (Noble). The family of the Stroms is presented as a utopian enclave of a race-free cultural biotope in which music plays a central role in the relations of the family members to each other and to the sociocultural environment, Delia Strom, the African American mother, who was prevented from realizing her musical talent as a singer in racist America, David Strom, the physicist and Jewish refugee from Nazi Germany, and their three children Jonah, Joseph and Ruth, form an intimate community in mid-twentieth-century Manhattan, surrounded by a hostile society blaming them for ignoring the sacrosanct race divide. While Joseph Strom is the main narrator, Jonah is the main focalizer in a novel in which, however, other voices and other perspectives are also foregrounded to create an effect of polyphony and multiple interpretive frames.

Music becomes a central elixir of life and survival, and singing turns into a polyphonic form of human self-expression which unites body and mind, verbal and nonverbal meaning, time and timelessness. The novel's title designates this sphere of timeless time, in which the characters meet in real life, but which also connects them beyond their death in the time of their singing, which is conjured up in different historical and biographical layers of the novel's nonlinear narrative. This structure of musical memory crystallizes around the central trauma of the narrative, the death of the mother Delia in a fire, which may have been the result of racially motivated violence, and which causes a painful absence in the lives of all the surviving family

members. The family idyll breaks up, and the characters go their own different ways, the father withdrawing into his academic world of theoretical physics, the daughter Ruth developing into a political radical affiliating herself with the Black Panthers, and the brothers Jonah and Joseph starting a musical career in Europe as singer and accompanying pianist of classical *Lieder*. After some years abroad, Joseph splits up with Jonah and returns to the States to become a bar pianist and eventually a music teacher in a school for the socially underprivileged that his sister Ruth has opened in California. His brother Jonah, however, continues to live in Europe and to perform classical music, founding an ensemble of ancient music called Voces Antiquae. In his brother's eyes, he "plays the white culture game," (381) but on his visits to America he also repeatedly becomes a witness of violent race conflicts, as if drawn to them by his repressed other self. He finally finds his death in the Rodney King riots in 1992, in which he gets involved during a tour of his Voces Antiquae group in Los Angeles. Different styles of music are thereby confronted, contrasted, and yet also interwoven with each other and with the sociopolitical issues making up the composition of the novel. The spectrum ranges from jazz to classical music, from folk songs to spirituals, from African American to European traditions of music. All of these are combined in the family's game of "crazed quotations," in which the family members join in an improvisational performance that fuses elements from different musical cultures in experimental hybridity, expressing in the medium of song and music the transcultural, transracial heterotopia which the Stroms are trying to build, and which in fact pervades the musicalized texture of the novel itself as a counter-discursive metanarrative to the sociopolitical divides and traumatizing experiences related in the narrated world.

Much like Toni Morrison's notion of "rememory," of storied places and deep time, which go beyond the immediate perception of the here and now, music in Richard Powers is a trans-temporal force of memory, turning an absent past into an ever new imaginary presence. In the novel's retrospective narrative, Jonah's beautiful voice especially, his music, his person, and his life are still present as they are recalled in the memory of Joseph Strom. This memory, however, is not just a construct of Joseph's subjective mind but a strangely transpersonal form of memory that seems to be part of music itself. "In some empty hall, my brother is still singing" (3). This is the novel's opening

sentence, which indicates some kind of transcendental continuity of music, and indeed of the literary recollection of music, through and beyond the traumas of the characters' lives. The scene that Joseph recalls is a performance of Franz Schubert's musical setting of Goethe's Erlkönig and of John Dowland's Time Stands Still at America's Next Voice Competition at Duke University in December 1961, in which Jonah wins the first prize and which opens the door to his musical future. On the evening of the contest that takes place after their mother's death, Jonah in a way fulfills her unfulfilled dream of a musical career as a singer. But in his singing he also expresses the trauma of her loss. His mother is an absent presence in the performance, which is not only musically expressed in the motif of the Earl King, whose shadow haunts Jonah throughout the song with his seductive promise of a dark fairy underworld, in which "meine Mutter hat manch gülden Gewand" ("my mother has many a golden garment"), but also in the John Dowland song, which spellbinds the audience in its time-transcending beauty and in which Jonah clearly addresses his dead mother (Powers 1):

Time stands still with gazing on her face, Stand still and gaze for minutes, hours, and years to her give place. All other things shall change, but she remains the same, Till heavens changed have their course and time hath lost his name.

This concept of musical rememory, which is in manifold ways connected in the novel's structure to the nonlinear time concepts of David Strom's relativity physics, not only characterizes Joseph's retrospective narration from the early 1990s, but various levels within the reconstructed narrative.

A paradigmatic case is the day of the funeral of Delia Strom, when Jonah performs his mother's favorite song from Mahler's song cycle *Des Knaben Wunderhorn* (*The Youth's Magic Horn*) titled "Wer hat dies Liedlein erdacht?" ("Who thought up this little song?") The song is taken from a collection of German folk songs by the romantic poets Clemens Brentano and Achim von Arnim, who collected and edited folk songs in a similar way as the brothers Grimm collected fairy tales in the search for expressions of the imagination of common people rather than of the norms of high classical culture. The song is about a girl with dark brown eyes looking out of the window of a "hohes Haus," a "high house," but originally having her home elsewhere, in an open land in

nature, "auf grüner Heide," on the "green meadow" (Powers 145). In Brentano and Arnim's folk version, the second stanza relates that potential suitors must raise 1,000 Thalers to be admitted into the house, linking any possible romance with the girl to the social world of money and class. Mahler significantly changes this second stanza, reinterpreting the relation of the poetic self to the dark-eyed girl in terms of intense passion, in which the magical gaze of the girl's eyes causes a deep wound in the speaker's soul that can only be healed by her rosy lips, a metonymic symbol of erotic attraction but also of her voice, which, as Mahler's new version has it, can cure pain, heal wounds, and even make the dead come alive (Powers 145).

Your rosy mouth
Makes hearts healthy
Makes boys wise,
Makes the dead live.

In Jonah's performance of the song at Delia's burial, the dark-eyed maid of the folk song turns into the face of his mother, the face through whose gaze time stands still, bringing his dead mother alive again in the imaginary space of the song. As the narrator comments:

What did this darling girl in her mountain house have to do with the matter-of-fact, irreverent black woman from Philadelphia, burned alive at the age of forty? But the girl in the song was Mama. Who could declare how her sons saw her? Death mixes all the races. Now more than ever, she was that girl, looking out forever on the original green meadow. (Powers 145)

The song is the translation of a European folk song into the context of American racism. It is also the song of a Jewish intellectual and composer, who was always also an outsider of the German culture in which he participated so intensely, and which he creatively transformed in unique ways in his music. Music, like narrative, is a mode in which such interpersonal and cross-cultural translations can take shape, because in one important sense, forms of cultural creativity like music and, in different ways, poetry and narrative, are in themselves translations of a pre-cultural dimension of natural creativity. In this context, the third stanza of the song, which is identical in the Mahler version and the folk song, is particularly relevant (Powers 146).

Who, then, thought up this pretty little song? Three geese carried it over the water, Two grey and one white.

And for those who can't sing this little song, These geese will whistle it.

It is not at once evident to which song the definite article, "dies Liedlein," "this pretty little song," actually refers. The phrase is rather like a recursive commentary on the song itself as it emerges from the question about its own origins. These origins, in the fairy tale language of the song, are in a faraway and yet strangely familiar world of nonhuman nature, evoking some deeprooted knowledge about the shared evolutionary origins of life itself. The song is carried across the water by the three geese, whose honking translates the absent origins of life into the nonverbal code from which the verbalized song is a human translation. The song is a synechdoche for the novel's creative process, a self-reflexive embodiment of its multivoiced "time of our singing," which translates the absent origins of music from nature to culture, from sound to text, from one culture to another. It is a counterdiscourse which represents the "threat of all singing," (630) as Powers calls it at the end of the novel: "We do not fear difference. We fear most being lost in likeness. The thing no race can abide" (630). Music and its narrative staging in the text are a force that both articulates and transcends differences within a vibrant world of living interconnectedness, a counterforce to cultural divides and separation lines, which continuously displaces presence into absence, and translates absence into imaginary presence in a holistic conception of life that is the ecocultural domain of art.

### Local and Global

#### Cultural ecology and the ethics of texts

In this concluding chapter, I am looking more explicitly at the relationship between the local and the global that has implicitly been a frame of reference throughout this book. In one important sense, this question is tied up with the relationship between ecology and ethics in literature, which I am discussing in this subchapter, before I turn to the analysis of local/global relations in contemporary American and in postcolonial novels, and finally frame the relationship between local and global within the theory and literature of climate change and the Anthropocene. To be sure, environmental ethics has long been an integral part of ecocriticism and of the environmental humanities. It has shaped and informed the ecocritical discourse since its beginnings, highlighted by such landmark contributions as Aldo Leopold's land ethic, and further differentiated in various ways such as in the environmental justice debate, in postcolonial ethics, in a personal ethics of relinquishment, an ethics of alterity and answerability (Murphy), in the animal rights debate, and, in general, in a call for a fundamental ethical transformation of culture and consciousness from an egocentric to an ecocentric orientation. Many of these points have been discussed in different contexts in the course of this book, but it is worth examining this emergence of a multiform field of eco-ethical perspectives and orientations once more within a cultural-ecological framework and with a special view to the contribution of imaginative literature to such an ecological ethics of texts.

If one tried to point out some of the convergences and common tendencies within recent studies of ecology and ethics in literature, one could name the following: (1) Both of them presuppose not a merely *self-referential* but a *relational* form of thought and cultural agency (2) Both of them focus on the

relationship between *text and life* which had been reduced to only one pole in the pantextual and pansemiotic universe of radical postmodernism. (3) Both of them deal not only with existing discursive practices but with *values*, i.e., with a critical attitude to a given state of society and with the necessity to think beyond it and imagine possible alternatives. (4) For both of them, the relationship between *culture and nature*, and thus between the *natural sciences and the humanities* seems to have special significance, even if they approach this relationship from different angles. (5) Both of them share the assumption of an interconnection between *local and global* issues and are therefore profoundly transcultural and transnational in orientation.

Yet it may be helpful to approach any such conversation between ecology and ethics from an awareness not only of the affinities but also of the differences and indeed the tensions between the disciplines involved, which are not so easily subsumed under each other's premises as it may seem at first sight. After all, ethics has been that branch of traditional western philosophy in which the dichotomy between culture and nature, human and nonhuman life provided the foundational terms and concepts. Human consciousness and conscience, the freedom of the will, the autonomy of the subject, the moral sense of good and evil, the hierarchy of values between the spiritual, intellectual, psychological, and physical spheres have been characteristic axioms of the dominant forms of ethical thinking from Aristotle to Kant and into the twentieth century. In its traditional form, ethics appears therefore as an expression of precisely that logocentric and anthropocentric ideology which modern ecological thought tries to overcome.

On the other hand, ecological science, from its origin in biology, has long been an empirical-descriptive rather than a normative-philosophical form of knowledge, favoring a collective and objectifying rather than a decision- and subject-oriented approach and acting on an assumed priority of nature over culture, and by extension of the natural sciences over the humanities. Thus, the bringing together of scientific and humanist-cultural versions of ecological thought, which is a hallmark of recent ecocriticism and an integral part of cultural ecology, is not as unproblematic and self-evident as it may seem. In his influential book *Consilience. The Unity of Knowledge* (1998), Edward O. Wilson proposed to overcome the much-deplored division of modern knowledge into the "two cultures" (C. P. Snow) by arguing for a concept of knowledge that is fundamentally the same throughout the various fields of science. With regard

to the basis of the "great branches of learning" (9) that Wilson differentiates (biology, social science, environmental policy, and ethics) an example of such a form of "consilience" would be the following: on the basis of the laws of nature in biology, and of their role in the functioning of human societies in terms of "gene-culture-coevolution," the impact of human civilization on the earth under the conditions of a global free-market economy can be studied in the social sciences, from which an environmental policy can be derived which is based on an "ethics of sustainable development" (Wilson 1998: 289).

Yet there are unresolved problems in Wilson's approach, which cannot be solved by a merely causal-empirical concept of knowledge. Wilson is right, of course, when he argues for the necessity of sufficient and competent information about the findings of the natural sciences for any responsible environmental policy and contemporary ethics. Yet the principles of an environmental ethics that he postulates cannot really be based on and derived from "facts and fact-based theory" (8) alone, as he claims. The need to "think globally" (Wilson 1998: 10) requires not only information, but reflection and imagination, a capacity and readiness to think beyond oneself and one's own immediate interests and life-world. Even though the notion of "biophilia" that Wilson introduced, that is, of an instinctual emotional attachment of humans to other animals, suggests a biological basis for a species-transcending empathetic disposition of humans (Kellert and Wilson 1993), it provides no sufficient foundation for environmental ethics. Any ethical stance involves intellectual, moral, and emotional decisions by the individual subject as a culturally embedded agent. And such decisions are neither merely conditioned by objective natural laws, genetic dispositions, or cultural contexts nor do they take place in an ahistorical vacuum of free subjective self-determination. Instead, as this book argues, they are mediated and ultimately made possible by the communicative medium of language and of texts. This is where literature can contribute in important ways to the contemporary dialogue between ecology and ethics. Indeed, the function of literature as cultural ecology implicitly involves an ecological ethics as well, since it posits the interconnectedness of mind and body, text and life, human and nonhuman world as a necessary context of human responsibility, which in its fundamentally cooperative and dialogical rather than monological orientation is relevant in the spheres of the general culture and of science as well. In a way, this corresponds to significant changes that have been going on in both the fields of ecology and ethics in the past few decades.

On the one hand, as has been seen, ecology has branched out from a purely biological into a multidisciplinary project, with ramifications into psychological, social, and, more recently, into cultural ecology, a process in which former deterministic assumptions about the culture-nature-relationship have been superseded by more complex views of interdependence-yet-difference. On the other hand, there have been equally significant shifts within the field of recent ethical theory, which have brought it closer not only to ecological thought but to literature as well. In these recent debates within literary ethics, the following points have found special attention: (1) the ways in which the narrative mode is necessary to provide a medium for the concrete exemplification of ethical issues which cannot adequately be explored on a merely systematic-theoretical level; (2) the ways in which literature, as a form of knowledge which is always mediated through personal perspectives, reflects the indissoluble connection between ethics and the human subject, a subject, however, not understood as a mere cognitive ego but a concrete, bodily self implicated in multiple interrelationships; (3) the ways in which the imaginative staging of other lives in fictional texts provides a forum for the enactment of the dialogical interdependence between self and other, and beyond that of the irreducible difference and alterity of the other which is central to ethics, and (4) the ways in which literature and art are not merely illustrations of moral ideologies but symbolic representations of complex dynamical life processes, whose ethical force consists precisely in their resistance to easy interpretation and appropriation.

As theorists such as J. Hillis Miller, Paul Ricœur, or Martha Nussbaum have pointed out in their different ways, ethical issues seem to require the fictional mode of narrative, because the ethical is a category which resists abstract systematization and instead needs concrete exemplification of lived experience in the form of stories which allow for the imaginative transcendence of the individual self toward other selves (Miller 1987). Ethics in this sense is not the same as morality, on the contrary, it involves precisely a critique of moral systems as far as they imply fixed, conventionalized, and impersonal rules of thought and behavior. On the other hand, and for this very reason, an ethics of literature also involves a resistance to unbroken, linear, moralistic story-telling which would subsume the other under one's own categories, and instead requires a "new ethical sense" (J. Butler), an awareness of the potential violence of even well-intentioned acts of "understanding the other."

In his radical, deconstructive ethics of reading, as Hillis Miller has proposed it, the resistance of language to generalizing moral concepts would ultimately imply that the text is brought to the point of unreadability, the recognition of the impossibility of understanding the other, one's self, and, indeed, the meaning of the text. Nonetheless, ethics does seem to necessitate some kind of intersubjective perspective, a move beyond the self-referential aporias of language towards an involvement of texts in questions of "life"—even and especially in the depragmatized sphere of aesthetics and literary studies. In the German-speaking world, Edgar Platen or Mathias Mayer have worked in this direction of linking the narrative, fictionalizing, and metaphorical power of texts to their ethical potential (Mayer 2005). Mayer speaks of an "ethics of textual cultures," in which both the textual mediatedness and the plurality of ethical approaches to the contemporary world are expressed, and in which the aesthetic mode provides a means of communicating ethical issues in such a way that it simultaneously resists conventional moralizing (Mayer 2005). The awareness and recognition of the alterity of the other can be seen as an essential characteristic of the recent discourse of ethics, and narrative seems to be a form in which this discourse can find a specifically instructive, because complex, medium of (self-)exploration.

These tendencies within ethical theory have challenged and radically transformed the universalist, subject-centered, and exclusionary anthropocentric bias of traditional ethics. Instead of unified systems of knowledge and belief, plurality, diversity, and dialogicity have been foregrounded as new ethical orientations (Inglehart 1997: 27).1 In what has perhaps been the most influential version of recent ethics, Emmanuel Lévinas radicalized traditional ethics into an existential dialogical process in which the obligation toward the other becomes the highest possible value, which manifests itself only in moments of concrete face-to-face encounter. More than ever before, this ethical reorientation includes ecological issues. This fusion of ethics, ecology, and literature as transdisciplinary frames of the humanities has found increasing attention in contemporary contributions to the debate.

See, e.g., Ronald Inglehart, who interprets the shift from modernism to postmodernism, somewhat schematically, as a shift from materialist to postmaterialist values, "[w]hich emphasize human autonomy and diversity instead of the hierarchy and conformity that are central to modernity." *Modernization and Postmodernization*, 1997: 27.

Thomas Claviez, taking up Lévinas's ideas, has demonstrated how Lévinas's ethics of radical otherness can be extended to include the nonhuman world and thereby contribute to an ecologically inspired ethics. Claviez points out the special power of literature and the aesthetic in representing this ecological ethics. Combining ideas from Lyotard and Lévinas, Claviez sees the aesthetic mode in which this ethics of the unrepresentable other can be realized in literary texts in a particular mode of the sublime, an "undomesticated sublime [...] in which the traces of obligation, irreciprocity, and the disintegration of the self are kept alive" (Claviez 448-449). In a more positive, dialogic vein, Patrick Murphy persuasively applies concepts from Bakhtinian critical theory to ecological ethics by focusing on the notions of answerability and transgredience. "Answerability" implies the obligation of ecocritics and writers to represent the mutually entwined inter-human and human-nature relationship, which must be thought together in order to evolve into a sufficiently complex, open, and multiperspectival ethics. "Transgredience" designates their readiness and capability "to see themselves through another's perspective: those of the rest of the natural world at the general level, and of specific ecosystems, plants, or animals at the particular level" (Murphy 2009: 156). The "aesthetic empathizing" (159) which enables such acts of imaginative adoption of other perspectives in the act of reading creates a shared eco-ethical space where different cultural and personal worldviews can meet, while the semantic openness of the text at the same time maintains the sense of uniqueness both of the imaginatively embodied phenomena of nonhuman nature and of the reader's activity. The latter, however, is always embedded in a multi-layered communicational process with the author, the language, the generic codes, and the cultural conditions within which such eco-ethical communication can occur in the first place. The human-nature relationship is always entwined with an inter-human dimension, both of which must be thought together in order to enable a sufficiently complex, open, and multiperspectival ethics.

This inextricable entanglement and multidimensional aesthetic negotiation of human and nonhuman ecologies in literary texts is emphasized in Roman Bartosch's concept of *EnvironMentality*, which fuses the material domain of the environment with the mental domain of an ecological ethics and aesthetics into one interrelated assemblage, combining an ethics of alterity with an awareness of culture-nature-coexistence as a shared material/mental space

of distinct singularities. Characteristic procedures of literary texts such as defamiliarization, emplotment, narrative focalization, or dialogic process are specifically suited to articulate and communicate this precarious alignment of alterity and singularity in the multivoiced staging of cultural and natural diversity. This is why the formal aspect of literature is not sufficiently described as a mere embellishment or didactic illustration of ecological truths which remain the same and are accessible across different media but that it is an intrinsic part of the cognitive, creative, and ethical potential of texts. Form in this view is not opposed to content and meaning but is the very medium through which the ecocultural communication of literature becomes possible. "EnvironMentality depends on a stance towards literature that understands fiction as an aesthetic discourse, and we need to realise that, for example, a text's polysemantic nature is neither a coincidence nor something that distracts us from the 'real world'. Instead, it is a thoroughly cultural way of dealing with what we want to know and feel about the natural world, or the world-as-text" (Bartosch 157). It is in such contributions that the intersections between the recent discourses of ethics and of ecology become especially apparent. And as I am arguing in this book, the rich potential of "aesthetic empathizing" with "anotherness" (Murphy) without discursive appropriation, which characterizes works of imaginative literature, makes textual and literary culture a specifically important medium and connecting frame for the dialogue between these discourses.

Within this debate, certain key issues have emerged which have been dealt with in various ways in the preceding chapters. They center around characteristic eco-ethical questions such as mind and body, self and other, human and nonhuman nature, which have been the recurring focus of theoretical comments and textual analyses in this book. One issue that deserves particular attention in this concluding chapter is the relationship between the local and the global as a much-disputed and highly complex issue of contemporary ecology and ethics, which provides one of the central foci and generative frames of aesthetic productivity in literary texts. In earlier versions of ecocritical thought, the focus of literary ecology was very much on the concept of place, that is, on concrete local and bioregional conditions as the real material basis of the interaction between humans and their environment as it is reflected in the text. With this emphasis on place, ecocriticism tried to counteract anthropocentric abstractions and the alienating forces of a purely economic form of globalization that was indifferent

to the concrete ecosystems of particular places and regions. With the shift from such a regional-realist to a cultural-ecological concept of the text and of the literary imagination, however, and particularly in the context of the dialogue of ecocriticism with recent ethics, the relationship between the local and the global in texts appears in a new light. Arguments from global sociological risk theory, as in Ursula Heise's plea for extending ecocriticism's narrow focus on place into an "environmental imagination of the global" (Heise 2008), as well as arguments from transnational and postcolonial ecocritical theories, have meanwhile met with such an overwhelming international response, that they have helped to transform the whole field of ecocriticism in terms of acknowledging the multiple and inevitable, if often troubled, interconnections between local and global dimensions of ecological thought and practice. This relationship between the local and the global can be explored in many different genres and media in nonfictional reports, documentary films, or TV series on environmental disasters such as the Bhopal accident, Chernobyl, or Hurricane Katrina, which are investigated as exemplary cases of interaction between local, political, national, transnational, and global forces (Schliephake). All of these are important and indispensable, but again, I would like to emphasize once more the particular contribution that literary aesthetics and narrative can make to representing and exploring that crucial eco-ethical interconnection between the local and the global. Literary aesthetics and storytelling live from the double impulse and the productive tension between regionalization and universalization, from the exploration of concrete life in the local here and now on the one hand, and the transgression of all internal and external boundaries toward a potentially worldwide significance and audience on the other. In literary texts, attention to phenomena of local nature and their eco-ethical potential implicitly includes and metonymically extends to all forms of life on earth.

### The local and global in American novels: Silko, *Ceremony*, Don DeLillo, *Underworld*, Marc Estrin, *Insect Dreams*

In the following, I will examine this interdependence of the local and the global as an eco-ethical focus of contemporary literature within the historically unprecedented transformations of a world risk society in three novels from

recent US literature.<sup>2</sup> All three of these novels deal with the worldwide impact of military technology in its most destructive form, the nuclear bomb, and with its implications for and effect on local natures and personal life-worlds. As Catrin Gersdorf rightly points out in reference to an interview with Elaine Scarry in the volume *Environmental Criticism for the Twenty-First Century*, "the greatest environmental risk of all [is] the existence of an arsenal of nuclear weapons on this planet that by far surpasses the power of any other environmental hazard" (Gersdorf 2013: 457).

As a first text, I come back to Silko's *Ceremony* (1977), which is an especially rich example of various aspects of a cultural ecology of literature. Set in the historical context of the Second World War, the novel blends traditional and modern polyphonic narration in forms which are unique and yet also characteristic of much of postcolonial writing within and beyond North America. Its protagonist Tayo, who has been traumatized by the war, feels responsible for a drought that has haunted his tribal homeland since he killed a Japanese enemy who looked exactly like his uncle. In this Native American version of magical realism, the opposition between Americans and their Japanese enemies is dissolved from a transcultural perspective, and the exploitation of local nature in the uranium mines of New Mexico is connected with the destructive power of modern technology in the shape of the atomic bomb. This monstrous aberration of modern civilization can only be symbolically healed, in the mythopoetic logic of the text, by the reappropriation of ancient Native American rituals, among them, first and foremost, the ritual and ceremony of storytelling itself. Tayo can heal himself, his land, and his community only by enacting a regenerative ceremony which leads him to the place where the ethical and ecological catastrophe of his experiences began:

He walked to the mine shaft slowly, and the feeling became overwhelming: the pattern of the ceremony was completed there. He knelt and found an ore rock. The gray stone was streaked with powdery yellow uranium, bright and alive as pollen; veins of sooty black formed lines with the yellow, making mountain ranges and rivers across the stone. But they had taken

The subsequent analyses are taken, in part, from my essay "Literary Ecology and the Ethics of Texts." New Literary History, 39.4 (2008): 847–868.

these beautiful rocks from deep within the earth and they had laid them in a monstrous design, realizing destruction on a scale only they could have dreamed. (Silko 246)

What is emphasized in the rich and conflictory imagery of this description is the "liveliness" of this apparently dead piece of rock excavated from deep within the desert earth. There are contrasts embodied in this rock between light and dark colors, regular and irregular forms, a microworld corresponding to the forms of mountains, rivers, and veins, and of living organisms in the larger ecosystem. Local nature and global responsibility are clearly connected here, since the lack of respect for the one, as the novel shows, ultimately leads to unforeseeable consequences for the planetary ecosystem as a whole. This notion of ecological and ethical interconnectedness across cultural differences is presented here within a magical-ritual worldview and a deliberately non-modern, shamanistic form of story-telling in which Silko's second self, spider woman, fabricates and weaves the world of the text and the text of the world from her own imagination. Yet it is simultaneously presented with reference to the historical conditions and catastrophes of the modern world and therefore has a potentially global contemporary significance.

A different, postmodern example is Don DeLillo's Underworld (1998), which examines the global implications of nuclear power in an age of computer and information technology, and particularly of nuclear and other civilizatory waste. "Everything is connected" is the fundamental thematic and aesthetic principle of the novel, while at the same time the mixture of many different textual genres and the nonlinear, radically fragmented form of narration highlight the infinite multiplicity of life which is threatened by worldwide forces of uniformity, depersonalization, and ecological exploitation. Again the myriad interconnections of the global with local places and personal life-worlds are explored, and the text becomes at once a critical reflection of and an imaginative counterforce to those life-threatening tendencies. This is highlighted in the land art/waste art project of Klara Sax, the central artist figure in the novel, who paints nuclear warplanes which had been circling the globe during the years of the Cold War and are now deposited as waste in the Arizona desert, emphasizing in her aesthetic project the tension and interaction of this technological war machinery with the local natural environment. To Nick Shay, the narrator, who is watching the artwork from the bird's eye view of a plane, the project conveys a rare intensity of aesthetic experience:

The painted aircraft took on sunlight and pulse.... The air was color-scrubbed, coppers and ochers burning off the metal skin of the aircraft to exchange with the framing desert. But these colors did not simply draw down power from the sky of lift it from the landforms around us. They pushed and pulled. They were in conflict with each other, to be read emotionally, skin pigments and industrial grays and a rampant red appearing repeatedly through the piece—the red of something released, a burst sac, all bloodpus thickness and runny underyellow. And the other planes, decolored, still wearing spooky fabric over the windscreen panels and engines, dead-souled, waiting to be primed. (DeLillo 1997: 83)

Art here becomes a force of returning life to a death-culture symbolized by the planes and their Cold War past. The apparently dead material is transformed into a living energy field in which the exchange between technological civilization and environment, culture and nature becomes the primary focus of aesthetic production and reception. As Christina Ljungberg has argued from an ecosemiotic perspective, "wildness" marks not just a transgression from the human to the nonhuman but a space of possibility, a productive imaginative boundary sphere between these domains (Ljungberg 2001). Such boundaries are especially fertile not only in an ecological sense (Finke) but in a semiotic sense. According to Jurij Lotman, boundaries are "the hottest spots for semiotizing processes" (Lotman quoted in Ljungberg 2001: 180). DeLillo demonstrates this in his novel, which is a literary form of postmodern waste art that is ekphrastically performed in Klara Sax' land art project. Like the novel as a whole, this project presents the artistic transformation of the waste products of a life-threatening civilization as a monstrous form of birth. An excessive imagery of wildness, color, conflict, sickness, and the grotesque explores aesthetic possibilities here which are not restricted to nonhuman nature but focus on the liminal, intensely charged boundary zone of its interaction with the artifacts of human civilization.

Jewish-American writer Marc Estrin's *Insect Dreams: The Half-Life of Gregor Samsa* (2002) is a political novel in which Gregor Samsa from Franz Kafka's "The Metamorphosis," who has turned into a human-sized cockroach,

does not die as in Kafka's story but survives and, separated from his family, lives on as a half human, half animal being. By this double identity, he has intimate knowledge of both cultural and natural phenomena and is therefore an exemplary narrrative medium for a cultural-ecological diagnosis of modern civilization. After some years as an exhibit in a freak show in Vienna, Gregor escapes the rising threat of anti-Semitism and emigrates to the United States in the 1920s where from humble beginnings as a liftboy he rapidly moves up the social ladder, and in the 1930s becomes a member of F. D. Roosevelt's kitchen cabinet and advisor of the president. Because of his scientific competence as a physicist, he is engaged to collaborate as a risk manager in the Manhattan Project, that is, the project to develop the atomic bomb started off by Einstein's warning about Nazi Germany working toward this goal. Gregor moves to Los Alamos and initially participates in the project but distances himself from it when it is continued even though the Germans are no longer pursuing their nuclear plans. In his double perspective as outsider and insider, in his exceptional intellectual talents and in his equally exceptional eco-ethical sensibility symbolized by his never-healing wound, this human-animal hybrid comes to represent an unsuccessful but eloquent and highly moving oppositional voice to the preparations for the bomb. For his views, he enlists the support of the major cultural achievements in world history in the fields of philosophy, literature, music, and science, which are interspersed with a wealth of historical material and with detailed descriptions of social milieus and natural environments, turning his narrative into a powerful counter-discourse to the actual military and political developments of the era.

In its fusion of history and fiction, serious philosophical reflection and playful bricolage, political satire and deeply felt sympathy with all living beings, the novel assumes a consciously unstable shifting tone from which the contradictory developments of western civilization in the first half of the twentieth century between the forces of democratization and dehumanization are traced. In a truly eco-cosmopolitan manner, the novel incorporates all sorts of different sources, modes, and genres. It not only fuses scientific and literary culture but makes reference to texts and artifacts from western and non-western cultures alike, particularly to Japanese culture as the culture of the enemies against whom the bombs are to be used. At the end of the novel, the plot escalates in a grotesque fantastic climax when a nuclear test is conducted

in Alamogordo, New Mexico, on July 16, 1945, a few days before the dropping of the bombs on Hiroshima and Nagasaki. Gregor, who feels helpless against the inexorable course of events, performs a final, self-sacrificing act of protest by hiding at the explosion site and letting himself be blown up with the bomb. The concrete locality of the test site in the Jornada del Muerto desert becomes the focal point of a global message of protest, and the destructive technological use of the powers of nature is symbolically staged as an act of human selfdestruction. This "most expensive assisted suicide in history" (458), however, represents not a purely fatalistic conclusion to the novel. As a symptom of the death culture in which Gregor has become imprisoned, it simultaneously marks the final stage and culmination point of his ongoing "metamorphosis" and thus maintains, against all odds, the life-affirming, counterdiscursive energy flow of the text. "Tief und tausendfach zu leben" ("To live a thousandfold profoundly") is the line from Hermann Hesse's death poem "Beim Schlafengehen" ("Upon Going to Sleep") with which Gregor's friend Dr. Bernard, many decades later at the beginning of the new millennium and confronted with his own approaching death, interprets the secret meaning of Gregor's subversive use of the Manhattan Project. It is an imaginative fullness of life that is envisioned here as a counter-fantasy to the human-made catastrophes of the twentieth century and which is opened up by the novel itself for the reader, who can share Gregor's story as a testament of unrealized alternatives to the actual course of history that are still relevant for us today.

The examples just discussed show that the relation between the local and the global is explored in literary texts in special complexity and imaginative intensity, bringing together spatially distant worlds, historically separate times, and heterogeneous cultures in the aesthetic medium of concretely staged scenarios of life which can, potentially, be shared by readers across cultural differences and national boundaries.

# Postcoloniality, transculturality, and literary ecoglobalism: Amitav Ghosh, *The Hungry Tide*

Let me briefly return once more in this context to the question of the place of postcolonial literature in this field of cultural ecology. Radical postmodernism

insisted on the absoluteness of difference, on the ultimate unbridgeability of the rift between signs, texts, and cultural identities. With the transition to postcolonial and cross-cultural paradigms, this doctrine of absolute difference became questionable (see also Banerjee). Even though in earlier versions, postcolonialism tended to simply reverse former binaries and claim radical incompatibility not only of cultures but of fundamental verities and values, its main impact on literary and cultural studies has been to call attention to various forms of cultural and textual hybridity, liminality, and ambiguity as productive features of postcolonial literature and art, without of course advocating any leveling of differences, conflicts, and asymmetries of power in favor of superficial harmonizations. This is where postcolonialism and cultural ecology converge in important ways. In ecological thought, there are no absolute but only relative, or relational, differences. Binary semiotics is opened up to the ecosemiotic diversity of historically, culturally, and personally distinct manifestations of human life within its irreducible connectivity with all other life on the planet. This is not to claim an ahistorical universal validity of the model of a cultural ecology but to assume a transcultural potential of texts that, by the very logic of ecological thought, provides the basis for such a cross-cultural interpretation and dialogue, while at the same time always also offering resistance to easy appropriation and generalization.

I would like to illustrate this here in a final example of a postcolonial text which has been widely discussed in recent ecocriticism, Amitav Ghosh's *The Hungry Tide* (2004), a novel which helps to demonstrate the enormous complexities in the relationship between the local and the global as both a challenge and a source of creative possibilities for imaginative literature in an age of ecoglobalism. In the novel, the huge mangrove wetlands of the Sundarbans, a cluster of low-lying islands in the Bay of Bengal off the easternmost part of India, form the narrative site of multiple interactions between nature, culture, politics, and personal lives against the background of violent ethnic strife and displacement, but also of conflicting models of culture-nature relations between myth and modernity. The radically unstable boundary between water and land in the Sundarbans is omnipresent in the novel as a both destructive and life-enabling environment of human culture. Piyali Roy, or Piya, a US marine biologist of Indian descent, comes to the Sundarbans to pursue a scientific research project on a rare river dolphin species, the *Orcaella brevirostris*, a project which leads

her into a journey of rediscovering her cultural roots in her family ancestors' battles for social and environmental justice. Politics, ecology, kinship, and love are interwoven in a richly textured network of interacting plots and narrative voices. "Western" ecological science as represented by Piya at first sharply contrasts with the "indigenous" knowledge of nature represented by Fokir, a native fisherman, whose perspective is associated with the deep-time story-world of legends and songs that alternates with the postmodern time-shifts of the narrative. Significantly, however, the novel's process consists in bringing Piya and Fokir ever closer together. In the course of the novel, their apparently incompatible approaches to nature are presented as mutually enriching and complementary rather than as merely contradictory and mutually exclusionary forms of ecocultural knowledge.

A third major character, who illustrates this interplay between local and global epistemologies and narrative frames is Kanai Dutt, a worldwide connected businessman, who returns from his upper-class urban milieu in Delhi to his native Sundarbans to retrieve the diaries of his dead uncle Nirmal. The diaries record the personal role of Kanai's relatives in the Bengali resistance against their forced resettlement in the historical Morichjhanpi massacre of 1978-1979, when thousands of Bengali refugees were forcibly evicted on the alleged grounds of environmental protection of the Mangrove forests and Bengal tigers. In these conflicts, humanist and environmentalist issues clash in sometimes unsettling and ethically incommensurable ways, while the traumas of the past are still present as deep-time scars in contemporary social and political life. This continued presence of the past is inscribed into the novel's narrative structure in multiple time shifts, mainly between the politicopersonal stories of conflict and resistance recorded in Nirmal's diaries and the narrative present that is revolving around the triangle of interactions between Kanai, Piya, and Fokir.

In their narrative functions, these three characters can be loosely associated with the triadic model of cultural ecology. Kanai's behavior and mentality display features of a culture-critical metadiscourse in that he approaches the complex entanglements of history and human-nonhuman relations from a posture of superior intellectual knowledge, relying on the unquestionable authority of social status, learning, and literate culture. From this mindset, he looks down on the illiterate native Fokir as incarnating naïve pre-modern

ignorance, whereas for Piya and the implied reader, in contrast, Fokir gains considerable counterdiscursive stature precisely because of his intimate, experiential knowledge of nature's ways that he has acquired in his day-to-day-life as a fisher in the mangrove waters.

On a textual level, this knowledge is woven into the narrative in the traditional mythic stories, songs, and poems of the Bengals about the tide and the tigers as natural forces shaping humans' lives and options of survival. The novel's title condenses the hunger of humans, tigers, and the tide into one complex signifier for all those forces that both drive and limit human life and culture under the conditions of this vast liminal region between land and water, rivers and sea, plant and animal, solid and fluid forms of existence. And it is the deeper intuitive knowledge of these complex interconnections which Fokir personifies. Piya stands between Kanai and Fokir in this triangle of characters, in which Fokir, somewhat like the whale caller in Mda's novel, is associated with a biosemiotic life knowledge linked to water, eros, the body, and the kinship to nonhuman life, while Kanai, in contrast, represents civilizational reason and organized knowledge. Even though she cannot communicate with Fokir through language, Piya is irresistibly drawn to him while establishing a kind of working relation with Kanai. She thus embodies a reintegrative force in the narration, bringing together modern and premodern, scientific and experiential, global and local forms of life and ecological knowledge. This mutual eco-epistemic enrichment is underlined in the final turn of the novel's plot: the hidden habitats and movements of the dolphin, which Fokir knows from personal experience and to which he has initiated Piya, are saved on the data files of Piya's GPS after Fokir dies in a typhoon during their common exploration of the dolphin's life patterns. They are becoming one symbiotic being in this climactic storm at the end, in which Fokir meets his death in saving Piya's life, who in turn commits her survival to preserving his legacy ("... it was as if the storm had given them what life could not: it had fused them together and had made them one." 390). Fokir's data provide the "empirical" basis for Piya's future scientific research, in which she will possibly be supported by the cosmopolitan intellectual Kanai, who has himself profoundly changed in the encounter with Fokir and his indigenous ecological knowledge of the Sundarbans (Bartosch, Heise).

Again, of course, this interdiscursive dimension of the novel implies no superficial harmonization of conflicts or erasing of existing differences.

On the contrary, it acts out a "logic of complexity" (Nicolescu) that relates contradictory positions to each other in multilayered ways while at the same time maintaining their irreducible distinctness and difference. In interweaving otherwise separate cognitive and experiential domains, the reintegrative function reveals incompatibilities and internal contradictions that can, however, enrich ecological knowledge in a narrative that resists easy solutions but instead opens up "clefts and gaps that have to be filled with meaning in the interpretive process" (Bartosch 179). In its alternations between multiperspectival modernist narrative techniques and indigenous forms of storytelling, *The Hungry Tide* exemplifies the entanglements of individual characters' lives between the deterritorializing pull of modernization and the reterritorializing pull of local living conditions, which are framed in turn by an all-pervading ebb and flow of the narrative process that follows the tidal rhythm of the novel's setting and shapes the characters' lives as a condition of both threat and survival.

On a poetological level, the mutual connection between the local and the global, between East and West is additionally underlined by the novel's undercurrent of ecoglobal awareness that is marked by the presence of Rainer Maria Rilke's *Duinese Elegies* not just in the preceding motto, but throughout the novel as an intertextual reference to another poetic culture and another coastal landscape—that of Duino's Mediterranean coast with its steep cliffs and stormy winds—as the source of an entirely heterotopic yet also transculturally relevant ecopoetic imagination. The novel is thus a paradigmatic example of the necessary fusion of a "sense of place" with a "sense of planet" in what Ursula Heise calls "eco-cosmopolitanism" (Heise 2008).

Amitav Ghosh's *The Hungry Tide*, but also other examples of postcolonial writing discussed above, such as Leslie Silko's *Ceremony*, Toni Morrison's *Beloved*, or Zakes Mda's *Whale Caller*, demonstrate two things: On the one hand, the postcolonial context of their various, distinct forms of cultural self-positioning between global forces and indigenous traditions constitutes a characteristic matrix of their textual uniqueness and aesthetic productivity. On the other hand, they are shaped by a multi-layered transcultural dimension which is due to both an intratextual and an intertextual quality—to the polysemic indeterminacies of their texture, which invite the reader actively to participate in the production of the texts' meaning and significance; and

to the manifold references to other literary texts from within and outside their own literary traditions, which situate the texts within a larger archive of imaginative literature and art that transcends the boundaries of self, nation, and cultures. Silko's adaptation of literary modernism and postmodernism into her reactivation of Native American rituals and trickster myths; Morrison's integration of modernist stream-of-consciousness techniques into communal African American storytelling traditions; Mda's conversation between contemporary South African society and archaic myths of art; or Ghosh's framing of his postcolonial eco-narrative within an intertextual dialogue with the German poet Rilke—all of these gestures indicate that literary texts react not only to their own sociocultural worlds but to each other across the boundaries of nations and the separations of cultures.

# Literary ecoglobalism in the age of climate change and the Anthropocene

Beyond questions of inter- and transculturality, however, the inherent ecoglobal dimension of literature as always already world literature (Arac, Dimock) seems to gain an unexpected new urgency within the context of climate change and the Anthropocene. I am coming back here to a topic already addressed in Chapter 3 but deserving some more general comments at the end of this book, since it has turned into one of the most widely discussed issues of current ecocritical theory and practice. It has been argued that in view of the new global environmental, economic, techno-scientific, intellectual, and ethical challenges posed by climate change and the Anthropocene, not only political agendas and sociocultural practices need to be drastically changed but inherited categories of literature need to be adjusted to a post-human condition, which limits the range of human agency and entangles the lives of individuals in hyper-real interdependencies that exceed their cognitive and emotional grasp. The multiplicity of causes for climate change as a slow, mostly invisible but nevertheless uncannily real phenomenon of global threat makes it hard for individuals to comprehend or effectively intervene in processes "whose scale, complexity and incalculability is such as to resist representation or being conceptualized" (Clark 2010: 132). As Timothy Clark and others have

argued, climate change has led to a derangement of scale in terms of inherited frameworks of human knowledge and agency, because actions and life styles of individuals on the local scale can no longer sufficiently be interpreted within the frame of personal decisions and responsibilities but have become part of a huge cumulative effect of unintended and unpredictable consequences of everyday activities. "Numerous acts of individual unimportance and insignificance mutate into an impersonal geological force" (Clark 2010: 135). Trivial practices characterizing a supposedly self-determined modern life style (such as driving cars, traveling in airplanes, buying clothes, or consuming food) can in their sum contribute to catastrophic consequences for the planetary ecosystem. It is not alone the individualistic ideology of a capitalist consumer society but also the liberatory values of an oppositional ecocritical discourse that find their limits or their "closure" as Clark calls it in the language of Derridean deconstruction, in these uncontrollable long-term consequences of human activities. In an age of late modernity, the promise of unlimited economic or personal development finds its ecological nemesis in the "material finitude of the planet" (Clark 2010: 134). Ecocriticism must become aware of this selfcontradictoriness of even the best-intentioned individual and intellectual agendas of political-social and environmental change or it is itself in danger of becoming "the covert legitimation of consumer society" (Clark 2010: 147).

Environmental thought and literature can only respond adequately to this trap of self-contradictoriness by confronting these multiple quandaries in ecocritical theory but also in a literary aesthetics that does not "turn on acts of individual decision or heroism that reinforce a culture of narcissistic individualism already implicated in consumer democracy and environmental danger" (Clark 2010: 144). Such pseudo-solutions are all too often presented in the highly conventionalized plots of apocalyptic end-of-the-world science fiction novels or films such as *The Day After Tomorrow* or, more subtly, in Kim Stanley Robinson's trilogy of climate change novels. Instead, as Clark argues, climate change can itself be seen as a "deconstructive force," which seems "more germane to modes of representation that involve unfamiliar non-human agencies, multiple and perhaps elliptical plots. The situation invites a writing that might be a form of secularized magic realism, in which seemingly rational procedures and modes of thought and representation interact with bizarre and counter-intuitive non-human agencies, kinds of action-at-a-distance,

with plural conventions of characterization, symbolization and plotting" (Clark 2010: 144). Following Heise, Clark mentions David Brin's speculative science fiction novel *Earth* (1990) as an example of such a form of literary representation "that might be adequate to global environmental dangers and quandaries" (Clark 2010: 144).

The reasons Clark gives for this are worthy of closer attention within the framework of a cultural ecology of literature and the concomitant redefinition of ecocriticism as proposed in this book. The adequacy of Brin's novel as a literary response to the challenge of climate change consists not in its explicit thematization of climate change but its multilayered staging of a global disaster "conveyed through a multiplication of fragmented narrative viewpoints and through various generic modes-myth, epic, allegory-techniques that is, previously associated with the urban novel of literary modernism (James Joyce, John Dos Passos)" (Clark 2010: 144). What this implies is four different points that are also relevant to a cultural ecology of literature. The first is that texts need not directly confront environmental topics and agendas on the level of theme and content, in order to become ecologically relevant contributions to a more fundamental ecocultural self-reflection and self-exploration of human civilization. The second point is that in appropriately complex forms of literary response to new historical-geological phenomena such as climate change and the Anthropocene, human agency is to be situated in transindividual contexts of collective and nonhuman material agencies, which deconstruct literary conventions of linear plot, consistent characterization, individual agency, and anthropocentric framing in favor of nonlinear, multi-scalar, and pluralized complexities that refuse any monosystemic closure. The third implied point in Clark's adequacy argument is that the response of literature to a global crisis like climate change is not to be conflated into an all-pervading, epistemologically prior environmental or political agenda, but consists in its own distinctive imaginative and aesthetic procedures, through which it creatively transforms rather than mimetically reproduces existing regimes of cultural knowledge and reality. And the fourth point implied in this argument is that such procedures are not necessarily different in kind but only in degree from procedures of imaginative literature that evolved in earlier literary history, in this case the multiperspectival and multigeneric narrative techniques of literary modernism as represented by the novels of Joyce and Dos Passos.

261

In fact, all of these points have been part of the argument of a cultural ecology of literature as expounded in this book, even though the emphasis has been somewhat different here than in a substantial part of the current ecocritical discourse on climate change and the Anthropocene. I would like to illustrate this difference in taking up these points and relating them to the more general theoretical and aesthetic assumptions underlying this book. One important difference concerns the relation between theme and form, text and *context.* In spite of the increased theoretical sophistication of certain branches of ecocriticism discussed above, a considerable part of ecocritical work still adheres to a rather derivative conception of this relation between a given theme and its textual/literary representation, between an anterior environmental or sociohistorical content and its expected "reflection" in the text. Such a mimeticdeductive view of form-content and text-context relations, which influenced ecocriticism especially in its earlier phase, no longer seems tenable in the light of the functional, non-deterministic thinking in complexity that characterizes a cultural-ecological concept of literature. Such a mimetic determinism moreover assumes the singular relevance of one overarching topic, in this case of climate change, as a mega-signifier and normative hyper-issue in the ecological debate, at the expense of the multiplicity of other relevant topics in contemporary ecology as well as in politics, society, and culture. It likewise remains blind to the long history of the ways in which imaginative literature has been dealing with crisis and disaster. Large-scale natural and civilizational catastrophes have been topics of literary narratives involving floods and earthquakes, pandemics and the Plague, poverty and starving, slavery and exploitation, the mass wars of modern times, the fears of nuclear annihilation, or the hypertrophies of global waste. And the aesthetic responses of texts to these disasters have challenged, in ever new ways, any conventional forms of textual representation and narrative control. As Heise and Clark rightly point out, experimental strategies of climate change literature have been anticipated in multiperspectival modern and postmodern writing such as in Joyce, Woolf, Dos Passos, Faulkner, or DeLillo (Clark 2010; Heise Afterword 2010). More specifically, the criteria of a "secular magic realism," in which "rational procedures" interact with "bizarre and counter-intuitive nonhuman agencies," that Clark associates with climate change writing (Clark 2010: 144), can mutatis mutandis be applied to postcolonial ecoglobalist novels such as

Ceremony, Monkey Beach, The Hungry Tide and other core texts discussed in this book.

Another difference concerns the relation between human and nonhuman agency, between anthropocentric and non-anthropocentric factors in the diagnosis and representation of an extreme political, economic, scientific, and ecocultural challenge such as climate change. As has become clear in the analyses of texts from different historical periods, any convenient dichotomy between former, supposedly anthropocentric, and contemporary, supposedly non-anthropocentric forms of thinking and writing is basically misleading, even though more explicit emphasis has been placed on the latter in recent ecocritical thought and environmental writing. It is helpful again to consider that nonanthropocentric factors and nonhuman agencies have been part of the literary negotiation of the culture-nature-relationship from the beginnings of literary history. This concerns nonhuman animals and forces of material nature, as has been demonstrated in the deep-rooted motif of the "humananimal dance" (Westling) and the manifold forms of symbiogenetic coevolution of human and nonhuman life pervading literary history both in terms of conflict and of ecosemiotic communication and metamorphosis (Wheeler). But this also concerns the structures of human civilization itself, which have been depicted as alienating biophobic "hyper-objects" (Morton) already before the explicit literary thematization of climate change, such as the inescapable prison-house of walls in Melville's "Bartleby," the bureaucratic labyrinths of Kafka's Das Schloß (The Castle), the urban monstrosities of Alfred Döblin's Berlin, Alexanderplatz, the Babylonian semiotic mazes of Paul Auster's New York Trilogy, or the global nuclear waste scenarios of DeLillo's Underworld. In all of them, nonhuman material agencies represent not only thematic issues but structural forces shaping, limiting, and indeed obstructing the subjective intentions of human actors. When describing emergent features of environmental and climate change literature, it seems therefore helpful to remain aware of this rich repertoire of literary representations of individual non-autonomy and of the co-agency of the nonhuman in the ecocultural scenarios of imaginative texts.

In fact, in view of climate change literature, the question of the relationship between anthropocentric and non-anthropocentric factors in literary explorations of human agency and identity is posed in particularly urgent but by no means unequivocal ways. On the one hand, literary responses to climate change appear as new, globally expanded forms of a sensibility to the unpredictable consequences of unlimited human self-empowerment, which is already inscribed into archetypal literary figures and narrative models of modernity such as *Faust* or *Frankenstein* that have influenced numerous texts up to the various forms of eco-dystopian fantasy and science fiction novels. On the other hand, the revaluation of the non-anthropocentric has its limits in the condition of all writing and discourse, namely that literary representation remains, even in its most radical acts of transgression, deconstruction, and fragmentation, inescapably dependent on an anthropocentric perspective in a broad sense. The linguistic categories, acts of selection, sensory perceptions, figural orientations, empathetic imaginations, narrative focalizations, compositional arrangements, and ethical evaluations that constitute the medium and form of texts are inevitably shaped by the specific biosemiotic place of the human species and of human culture in the overall process of culture-nature co-evolution.<sup>3</sup>

This paradox also applies to the literature of climate change and the Anthropocene, which can, even in its increased emphasis on nonanthropocentric agencies, never completely eliminate this residual anthropocentric framing from its modes of characterization, plot construction, and narrative conception. Let me just briefly consider such diverse examples as Max Frisch's Der Mensch erscheint im Holozän (Man in the Holocene), T.C. Boyle's A Friend of the Earth, Frank Schätzing's Der Schwarm (The Swarm), Margaret Atwood's Oryx and Crake, Cormac McCarthy's The Road, and Ilja Trojanow's EisTau (Melting Ice). It is true that nonhuman agencies assume an important role in the plot conception of these novels-massive rainfall and threatening landslide in Frisch's Holocene; multiple ecological disasters in T.C. Boyle's A Friend of the Earth; mutated sea creatures in Schätzing's The Swarm; chimeras and genetically transformed humans in Atwood's Oryx and Crake; lurid environmental wastelands in McCarthy's The Road; rapidly melting glaciers and global climate disruptions in Trojanow's Melting Ice. It is likewise true that the

<sup>&</sup>lt;sup>3</sup> This paradox makes strategies of imaginative anthropomorphization in literature appear useful as a means of acknowledging both the recognition of eco-ontological affinity with the nonhuman other, and of the necessarily species-bound human constructivism involved in all acts of literary and discursive representation of the culture-nature and the human-nonhuman interaction (cf. Barad; Iovino and Oppermann).

formal-aesthetic processes of these novels are significantly shaped by those agencies. The disintegration of the narrator's consciousness and his mental metamorphosis into a fire salamander in Frisch's *Holocene*; the swarm intelligence of the Yrr as subliminal form of transspecies communication in Schätzing's *The Swarm*; the diffractions of time, space, and narrative in the monstrous posthuman dystopias of Atwood's *Oryx and Crake*; the vicious circles of endless repetition in language and plot in McCarthy's *The Road*; the fracturing of the personal story line through collage-like interstices with streams of impersonal newsbits in Trojanow—all of these are formal traces of more-than-human forces infiltrating and transfusing the narrative process.

Nevertheless, in all of these novels, the perspective of interpreting and interacting human beings, who try to organize their survival within these radically altered circumstances, remains present throughout: in Frisch's Holocene, Herr Geiser, an old man with growing dementia, reacts to the loss of external and internal control with desperate, improvisational creativity; in Boyle's A Friend of the Earth, the failed environmental activist Ty Tierwater, who has withdrawn from society into a fragile biophilic heterotopia, identifies himself to a young girl appearing in his post-pastoral retreat with the novel's concluding words: "And I'm a human being" (271); in Schätzing's The Swarm, the environmental scientists, who try to come to terms with the revolt of nature against a destructively anthropocentric civilization, act from an ecological perspective of transspecies respect to ensure the survival of both humanity and the planet's ecosystem; in Atwood's Oryx and Crake, the "Snow-man" Jimmy is faced at the novel's end with the very personal ethical decision of how to react to three human beings left over from the genetically programed species transmutation; in McCarthy's The Road, the father protects his child unconditionally and enables his survival in the midst of a posthuman death culture; in Trojanow's *Melting Ice*, the disillusioned glaciologist Zeno deplores the lack of public concern about climate change but withdraws into the role of ecotourist guide to the Antarctic, before he takes possession of the cruise ship and makes off with it in a suicidal act of desperate revolt at the end. In these and other novels, an uneasy relation between alienation and identification, irritation and precarious empathy is established in the communication between text and reader, whose ethical indeterminacy corresponds to the complexity but also the urgency of the challenges posed by climate change and the Anthropocene. In their intensified focus on material processes and more-than-human agencies, and in their radical confrontation of the dangers brought about by a blindly anthropocentric worldview for the survival of humanity and the global ecosystem, these texts simultaneously cannot but retain an underlying anthropocentric perspective as a necessary condition of their constructions of plot, character, and narrative, and above all, of their interaction with their readers. In this, they follow a paradoxical ecological ethics and aesthetics which can be described, in Serenella Iovino's felicitous formula, as a "non-anthropocentric humanism" (Iovino 2010). It is this very paradox which seems to be a particularly productive point of crystallization for ecocritical research as well as for the literary imagination in an age of climate change and the Anthropocene.

Yet as has been seen, this paradox has also been a more general underlying feature of imaginative literature in its evolutionary function as a medium of cultural ecology. This approach therefore differs from other ecocritical theories of literature not only because it focuses on the unique contribution of imaginative texts to ecological knowledge and communication but also because it does not endorse an all too gloomy or alarmist tendency prevailing in some strands of the ecocritical discourse, which threatens to reduce ecological thought to a grand fatalistic disaster narrative. Cultural ecology recognizes the challenges posed by the crisis that the development of human civilization has brought about. But it also emphasizes the critical and creative potential that literature and art, as core media of cultural evolution, can activate in terms of the complex representation, transformation, and communication of these challenges. If Timothy Clark considers climate change as a "deconstructive force, intellectually inspiring despite its horror," a force working "to resist and open up the deep assumptions, pious enclosures and disciplinary parochialisms of current intellectual life" (Clark 2010: 147), then I would agree that even such monstrous challenges as climate change can become a source of critical energy and creative inspiration. But I would insist on the perhaps obvious but not always explicitly recognized point that it is not the phenomenon of climate change as such but its textual and literary representations which can mobilize this critical and creative energy. Climate change and other phenomena in the more-than-human ecosphere can only become a deconstructive force in its cultural transformation in texts.

#### Concluding remarks

The triadic functional model of a cultural ecology of literature and its various transdisciplinary contexts that I have discussed in this book indicate the multidimensional ways in which literature acts as an ecological force within the larger system of cultural discourses. Even though these contexts are actualized in various degrees in individual texts, they indicate elements of a shared generative code which enables literature to critically reflect and aesthetically explore a given state of civilizational development from a set of relational complexities that are indispensable in maintaining the vitality of cultural ecosystems. This continued vitality is dependent on the reflexive reconnection of cultural to natural ecosystems that is continually performed in literary texts. In this ecosemiotic recursivity to precultural processes of emergence and creativity, literature realigns culture and nature, mind and matter in complex forms of interactivity, without leveling their vital differences in either anthropocentric or ecocentric grand narratives. The transformative interplay between critical, counterdiscursive, and reintegrative functions, which the triadic model describes as a basic feature of imaginative texts, represents not merely an abstract set of discursive operations but is intrinsically linked to the multiple tensions and force-fields at the interface between culture and nature that those transdisciplinary contexts of cultural ecology circumscribe. These transdisciplinary force-fields are, in some way or other, present in different variations in all of the texts discussed in this book. And they do not only designate thematic polarities but actively shape the formal aesthetic processes through which the texts perform their culturalecological functions.

As ecological metanarratives of their culture, literary texts follow an underlying dynamics of transgression and polysemic excess which opens up a potential of revitalization and symbolic regeneration—even if this potential is almost never fully achieved on the level of mimesis and plot but only in an aesthetic reflexivity of discourse that is to be realized in the cognitive-emotional participation of the reader. As has been seen above, the "life" to which literary texts relate includes but also goes beyond individual life. "Life" as a precarious process of constant semiosis, interpretation, and adaptation between self and other, autopoiesis and ecopoiesis, is therefore also a crucial

dimension of the ways in which imaginative texts, as texts, are acting as an ecological force within culture. In their performative and communicative dimensions, they are primary examples of what has been distinguished as "in vivo knowledge" from the "in vitro knowledge" of the objectifying natural sciences (Nicolescu 2008: 3). The force-fields between the poles of chaos and order, connecting patterns and creative energies, matter and mind, solid and fluid, wound and voice, absence and presence, local and global that have been discussed in this book are all contributing to and interacting in these explorative processes of texts. From the microstructure of tropes to the macrostructure of narratives, the imaginative processes of texts are made up by such tensions and connecting patterns, which transgress the separations of hegemonic discourses and release creative energies that can be activated for the self-criticism and self-renewal of the cultural ecosystem.

Long before contemporary debates about local vs. global issues in society and ecology, literary texts have at least implicitly included this transcultural and (eco)global dimension in their aesthetic processes. Wai Chee Dimock has called this transnational and potentially global dimension the "deep time" encoded in literature, a time beneath the actual narrative that reflects and refracts in multiple ways the mutual influences and dialogic connections of national literatures to transnational literatures, connections which are not just supplying an additional frame but constitute the very substance of literary texts (Dimock). With regard to American literature, for example, Dimock points out the degree to which transnational mutual influences of European, African, Indian, Chinese, and other literatures, provide formative intertexts of classical and modern American texts. I fully agree here with Dimock and others in their conviction that literature, and not only American literature, has always already been coded in such a transnational way, that literature is always, in principle, world literature (Arac). Today, obviously, this process has intensified and has tended to include regions and cultures that have become more accessible to each other due to globalized economic, political, and cultural networks as well as to modern travel and information technologies, which also have helped bringing formerly remote traditions of art and writing closer together. This transculturality of literature opens up the "dialogue between all cultures" while at the same time preventing "their homogenization" (Nicolescu 2002: 108). But this global or planetary dimension has been part of literature even before

this latest phase of globalization, and this is one of the points which a theory of literature as cultural ecology is arguing.

The deep time implied in the rich intertextual fabric of literature that results from its innovative recycling of previous models of genre, style, and aesthetics is however not just the signature of a cultural memory of transnational interactivity and interdependence that is part of the very ways in which literary texts become what they are. It is also the signature of the deep time of culture-nature co-evolution, which is inscribed into the generative code of texts as a biocentric or biosemiotic memory that must always again return to the beginnings and archaic-elemental conditions of cultural evolution, in order to find new ways of continuing and renewing cultural and literary creativity. This creativity, as has been seen, consists not primarily in the ecodidactic transmission of thematic issues, ideological beliefs, or ecologically revised moral systems. It rather emerges from the complex staging of semantic tensions, ideological conflicts, and discursive indeterminacies, which are inevitably bound up with issues and problems of the changing evolutionary relationship between culture and nature, human and nonhuman world that is a central generative matrix of literary texts. The various relational complexities that have been discussed above indicate these explorative spaces between and beyond discursive and disciplinary boundaries, which make up the creative material and formal procedures of literary texts. In this in-between status, literature is, both by its deep evolutionary signature and by its evolved modern cultural function, a multiply coded and highly indeterminate form of discourse, which invites and is dependent on the creative activity of its readers to actualize its rich semantic potential under always changing historical and cultural conditions. The sustainability of literary texts consists in their potency to represent renewable sources of creative energy across time and space for ever new generations of readers, not only for its culture of origin but for other cultures. In this transcultural dimension as well, literary texts provide a sustainable matrix for an ongoing process of ecocultural communication, criticism, and self-renewal, which can potentially be shared by a worldwide literary community and can thereby help to promote the awareness of a global ecological citizenship.

### Bibliography

- Abram, David. *The Spell of the Sensuous: Perception and Language in a More-than-Human World.* New York: Vintage Books, 1997.
- Abram, David. Becoming Animal: An Earthly Cosmology. New York: Pantheon, 2010.
- Adams, Hazard, ed. *Critical Theory since Plato*. New York: Harcourt Brace Jovanovich, 1970.
- Adamson, Joni. *American Indian Literature, Environmental Justice, and Ecocriticism: The Middle Place.* Tucson: University of Arizona Press, 2001.
- Adamson, Joni. "Indigenous Literatures, Multinaturalism, and Avatar: The Emergence of Indigenous Cosmopolitics." *American Literary History* 24.1 (2012): 143–162.
- Adamson, Joni, Mei Mei Evans, and Rachel Stein, eds. *The Environmental Justice Reader: Politics, Poetcs and Pedagogy.* Tucson: University of Arizona Press, 2002.
- Adamson, Joni and Scott Slovic. "The Shoulders We Stand On: An Introduction to Ethnicity and Ecocriticism." *MELUS* 34.2 (Summer 2008): 5–24.
- Adorno, Theodor. *Aesthetic Theory*. Translated and edited by Robert Hullot-Kentor. London: Athnlone Press, 1997.
- Agamben, Giorgio. "Bartleby or Contingency." Potentialities. Collected Essays in Philosophy. Ed. and trans., with introd. by Daniel Heller-Roazen. Stanford: Stanford University Press, 1999.
- Alaimo, Stacy. "Feminism, Nature, and Discursive Ecologies." *Electronic Book Review* 9.1 (1997).
- Alaimo, Stacy. *Bodily Natures: Science, Environment, and the Material Self.* Bloomington: Indiana University Press, 2010.
- Alaimo, Stacy. "Sustainable This, Sustainable That: New Materialisms, Posthumanism, and Unknown Futures." *PMLA* 127.3 (2012): 558–564.
- Alexander, J. C., R. Eyerman, et al., eds. *Cultural Trauma and Collective Identity*. Berkeley: University of California Press, 2004.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing, 2013: 271–280.
- Ammons, A. R. "Reflective." *The Selected Poems. Expanded Edition.* New York and London: Norton, 1986: 53.

- Antor, Heinz. "The Ethics of Criticism in the Age After Value." *Why Literature Matters: Theories and Functions of Literature*. Eds. Rüdiger Ahrens and Laurenz Volkmann. Heidelberg: Winter, 1996: 65–85.
- Arac, Jonathan. "Global and Babel: Language and Planet in American Literature." *Shades of the Planet. American Literature as World Literature*. Eds. Dimock and Buell. Princeton, NJ: Princeton University Press, 2007: 19–36.
- Aristotle. *Poetics*. Trans. Anthony Kenny. Oxford World Classics: Oxford University Press, 2013.
- Armbruster, Karla. "The Novels of Toni Morrison: 'Wild Wilderness Where There Was None." *Beyond Nature Writing: Expanding the Boundaries of Ecocriticism*. Eds. Armbruster and Wallace. Charlottesville: University of Virginia Press, 2001: 211–230.
- Armbruster, Karla and Kathleen R. Wallace, eds. *Beyond Nature Writing: Expanding the Boundaries of Ecocriticism*. Charlottesville: University of Virginia Press, 2001.
- Attridge, Derek. *The Singularity of Literature*. London and New York: Routledge, 2004.
- Atwood, Margaret. Oryx and Crake. New York: Doubleday, 2003.
- Bakhtin, Mikhail M. *The Dialogic Imagination*. Ed. Michael Holquist. Trans. Caryl Emerson and Michael Holquist. Austin: University of Texas Press, 1981.
- Banerjee, Mita. "Ecocriticism and Postcolonial Studies." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, (2016, forthcoming).
- Barad, Karen. Meeting the Universe Half-Way: Quantum Physics and the Entanglement of Matter and Meaning. Durham, NC: Duke University Press, 2007.
- Bartosch, Roman. "Literary Quality and the Ethics of Reading: Some Thoughts on Literary Evolution and the Fiction of Margaret Atwood, Ilija Trojanow, and Ian McEwan." *Literature, Ecology, Ethics. Recent Trends in Ecocriticism.* Eds. Müller and Sauter. Heidelberg: Winter, 2012: 113–128.
- Bartosch, Roman. *EnvironMentality. Ecocriticism and the Event of Postcolonial Fiction*. Amsterdam: Rodopi, 2013.
- Bate, Jonathan. The Song of the Earth. London: Picador, 2000.
- Bateson, Gregory. Steps to an Ecology of Mind. London: Paladin, 1973.
- Bateson, Gregory. *A Sacred Unity: Further Steps to an Ecology of Mind.* New York: HarperCollins, 1991.
- Bateson, Gregory. *Mind and Nature: A Necessary Unity*. Creskill: Hampton Press, 2002.
- Baumbach, Sibylle. "Medusa's Gaze and the Aesthetics of Fascination." *Anglia* 128.2 (2010): 225–245.
- Baumgarten, Alexander Gottlieb. Aesthetica. II vols. Frankfurt/Oder, 1750–1758.

- BDEW Bundesverband der Energie- und Wasserwirtschaft e.V. 31.1.2013. "Erneuerbare Energien und das EEG: Zahlen, Fakten, Grafiken (2014)." 13 May 2014. www.bdew.de
- Beck, Ulrich. World Risk Society. Cambridge and Malden: Blackwell, 1999.
- Beck, Ulrich. "Germany Is Right to Opt Out of Nuclear Power." *Papers of the Heinrich Böll Stiftung. The Green Political Foundation*, 2013.
- Benjamin, Walter. Illuminations. New York: Knopf, 1969.
- Bennet, Jane. *Vibrant Matter: A Political Ecology of Things*. Durham, NC: Duke University Press, 2010.
- Bennett, John W. *The Ecological Transition: Cultural Anthropology and Human Adaptation*. New York: Pergamon, 1976.
- Bergthaller, Hannes. "Trees Are What Everyone Needs': *The Lorax*, Anthropocentrism, and the Problem of Mimesis." *Nature in Literary and Cultural Studies*. Eds. Catrin Gersdorf and Sylvia Mayer. Amsterdam: Rodopi, 2006: 155–176.
- Bergthaller, Hannes. "Housebreaking the Human Animal: Humanism and the Problem of Sustainability in Margaret Atwood's *Oryx and Crake* and *The Year of the Flood.*" English Studies 91.7 (2010): 728–743.
- Berressem, Hanjo. "Structural Couplings: Radical Constructivism and a Deleuzian Ecologics." *Deleuze*|*Guattari & Ecology*. Ed. Bernd Herzogenrath. Houndmills: Palgrave Macmillan, 2008: 57–101.
- Berressem, Hanjo. "Response to Hubert Zapf. 'Start at the End': Reading Hubert Zapf's Paper Backwards." *American Studies Today. New Research Agendas*. Eds. Winfried Fluck, Erik Redling, Sabine Sielke, and Hubert Zapf. Heidelberg: Universitaetsverlag Winter, 2014: 243–251.
- Berressem, Hanjo. "Ecology and Immanence." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Bloch, Ernst. The Principle of Hope. vol. I. Cambridge, MA: MIT Press, 1995.
- Bohm, David. On Creativity. Ed. Lee Nichol. London: Routledge, 1998.
- Böhme, Gernot. Für eine ökologische Naturästhetik. Frankfurt: Suhrkamp, 1989.
- Böhme, Gernot. *Die Natur vor uns. Naturphilosophie in pragmatischer Hinsicht.* Husterdingen: Die Graue Edition, 2002.
- Böhme, Gernot. "Ecological Aesthetics of Nature." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Böhme, Gernot and Hartmut Böhme. Feuer, Wasser, Erde, Luft: Eine Kulturgeschichte der Elemente. München: Beck, 1996.
- Bonnet, Michele. "To Take the Sin out of Slicing Trees...' The Law of the Tree in Beloved." *African-American Review*. 31. 1997: 41–53.
- Bouvet, Rachel and Stéphanie Posthumus. "Eco- and Geo-Approaches in French and Francophone Literary Studies: *Géopoétique, géocritique, écopoétique, écocritique*."

- *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Boyle, T. C. A Friend of the Earth. New York: Viking Books, 2000.
- Brady, Emily. *Aesthetics of the Natural Environment*. Edinburgh: University of Edinburgh Press, 2003.
- Braidotti, Rosi. Transpositions. Malden: Polity, 2006.
- Brandt, Stefan, Winfried Fluck, and Frank Mehring, eds. "Transcultural Spaces: Challenges of Urbanity, Ecology, and the Environment in the New Millenium. Special issue of REAL." *Yearbook of Research in English and American Literature* 26 (2010).
- Braungart, Michael and William McDonough. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point Press, 2002.
- Brocchi, Davide. "The Cultural Dimension of Sustainability." Sustainability: A New Frontier for the Arts and Cultures. Eds. Sacha Kagan and Volker Kirchberg. Waldkirchen: VAS, 2008: 26–58.
- Brown, Lester. *Building a Sustainable Society*. Washington: World Watch Institute, 1981.
- Brundtland Report. Report of the United Nations World Commission on Environment and Development. August 4, 1987. http://www.un-documents.net/ wced-ocf.htm
- Budd, Malcolm. *The Aesthetic Appreciation of Nature*. Oxford and New York: Oxford University Press, 2002.
- Buell, Lawrence. *The Environmental Imagination: Thoreau, Nature Writing, and the Formation of American Culture.* Cambridge: Harvard University Press, 1995.
- Buell, Lawrence. *The Future of Environmental Criticism: Environmental Crisis and the Literary Imagination*. Malden: Blackwell 2005.
- Buell, Lawrence. "Ecocriticism: Some Emergent Trends." *Qui Parle* 19.2 (2011): 87–115.
- Butler, Judith. *Giving an Account of Oneself*. New York: Fordham University Press, 2005
- Capra, Fritjof. The Web of Life. New York: Doubleday, 1996.
- Capra, Fritjof. *The Hidden Connections. A Science for Sustainable Living.* New York: Random House, 2002.
- Carneiro, Robert L. "A Theory of the Origin of the State." *Science* 169 (1970): 733–738.
- Carneiro, Robert L. *Evolutionism in Cultural Anthropology: A Critical History*. Boulder, CO: Westview Press, 2003.
- Carroll, Joseph. *Evolution and Literary Theory*. Columbia and London: University of Missouri Press, 1995.

- Carson, Rachel. Silent Spring. Boston: Houghton Mifflin, 2002.
- Caruth, Cathy. *Unclaimed Experience: Trauma, Narrative and History*. Baltimore: Johns Hopkins University Press, 1996.
- Caruth, Cathy. *Literature in the Ashes of History*. Baltimore: Johns Hopkins University Press, 2013.
- Charlton, Noel G. *Understanding Gregory Bateson. Mind, Beauty and the Sacred Earth.* Albany: SUNY Press, 2008.
- Cheng, Xiangzhan. "Ecosophy and Ecoaesthetics: A Chinese Perspective." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Chopin, Kate. *The Awakening: Complete, Authoritative Text with Biographical and Historical Contexts, Critical History, and Essays from Five Contemporary Critical Perspectives.* Ed. Nancy A. Walker. Boston: St. Martin's, 1993.
- Cilano, Cara and Elizabeth DeLoughry, eds. Special Cluster on Postcolonial Ecocriticism. *ISLE* 14.1 (2007).
- Civelekoglu, Funda. "Cultural Ecology, Critical Theory and Gothic Literature." Kulturökologie und Literatur: Beiträge zu einem transdisziplinären Paradigma der Literaturwissenschaft. Ed. Hubert Zapf. Heidelberg: Winter, 2008: 75–88.
- Clark, Timothy. "Some Climate Change Ironies; Deconstruction, Environmental Politics, and the Closure of Ecocriticism." *Oxford Literary Review* 32.1 (2010): 131–149.
- Clark, Timothy. *The Cambridge Introduction to Literature and the Environment*. Cambridge: Cambridge University Press, 2011.
- Clark, Timothy. *Ecocriticism on the Edge: The Anthropocene as a Threshold Concept.* London: Bloombury, 2015.
- Claviez, Thomas. "Ecology as Moral Stand(s): Environmental Ethics, Western Moral Philosophy, and the Problem of the Other." *Nature in Literary and Cultural Studies*. Eds. Catrin Gersdorf and Sylvia Mayer. Amsterdam: Rodopi, 2006: 435–454.
- Claviez, Thomas. "Jamming What Exactly? Some Notes on the 'Anthropological Machine' and Ethics in Derrida, Agamben, Calarco, and Latour." *Literature, Ecology, Ethics*. Eds. Timo Müller and Michael Sauter. Heidelberg: Winter, 2012: 69–80.
- Climate Change 2014. Mitigation of Climate Change. Fifth Assessment Report of the IPCC Working Group III. Summary for Policymakers. Mitigation 2014.org 1–33.
- Coleridge, Samuel Taylor. *Biographia Litteraria*. 1817. *Critical Theory since Plato*. Ed. Hazard Adams. New York: Harcourt Brace Jovanovich, 1970: 468–471.
- Commoner, Barry. *The Closing Circle: Nature, Man, and Technology.* New York: Knopf, 1971.
- Conley, Verena. *Ecopolitics: The Environment in Poststructuralist Thought*. London and New York: Routledge, 1997.

- Coupe, Laurence, ed. *The Green Studies Reader: From Romanticism to Ecocriticism*. London: Routledge, 2000.
- Crutzen, Paul and Eugene Stoermer. "The 'Anthropocene." *Global Change Newsletter* 41 (2000): 17–18.
- Danto, Arthur C. "Kalliphobia in Contemporary Art." *The Abuse of Beauty: Aesthetics and the Concept of Art.* Chapter 2. Chicago and Lasalle, IL: Open Court, 2003.
- Dark Mountain Project. *Uncivilisation: The Dark Mountain Manifesto*. 2009. http://dark-mountain.net/about/manifesto/ February 11, 2014.
- DeLillo, Don. Underworld. New York: Simon & Schuster, 1997.
- DeLillo, Don. Falling Man. New York: Scribner's, 2007.
- DeLoughrey, Elizabeth, Renée K. Gosson and George B. Handley, eds. *Caribbean Literature and the Environment: Between Nature and Culture*. Charlottesville: University of Virginia Press, 2005.
- DeLoughrey, Elizabeth and George B. Handley, eds. *Postcolonial Ecologies: Literatures of the Environment*. New York: Oxford University Press, 2011.
- De Man, Paul. *Allegories of Reading: Figural Language in Rousseau, Nietzsche, Rilke, and Proust.* New Haven: Yale University Press, 1979.
- Den Tandt, Christophe. "Oceanic Discourse, Empowerment and Social Accommodation in Kate Chopin's *The Awakening* and Henrik Ibsen's *The Lady from the Sea.*" *Union in Partition: Essays in Honour of Jeanne Delbaere*. Eds. Gilbert Debusscher and Marc Maufort. Liege: Ls 3 Liege Language and Literature, 1997: 71–79.
- Derrida, Jacques. Specters of Marx, the State of the Debt, the Work of Mourning, & the New International. Transl. by Peggy Kamuf, London: Routledge, 1994.
- Derrida, Jacques. "The Animal That Therefore I Am (More to Follow)." *Critical Inquiry* 28.2 (2002): 369–418.
- Dickinson, Emily. *The Poems of Emily Dickinson*. Ed. Thomas H. Johnson. Cambridge: Harvard University Press, 1979.
- DiMarco, Danette. "Paradice Lost, Paradise Regained: Homo Faber and the Makings of a New Beginning in Oryx and Crake." *Papers on Language and Literature* 41 (2005): 170–195.
- Dimock, Wai-Chee. *Through Other Continents: American Literature Across Deep Time*. Princeton, NJ: Princeton University Press, 2009.
- Dimock, Wai-Chee and Lawrence Buell, eds. *Shades of the Planet. American Literature as World Literature*. Princeton, NJ: Princeton University Press, 2007.
- DiPrete, Laura. "Foreign Bodies." Trauma, Corporeality, and Textuality in Contemporary American Culture. London and New York: Routledge, 2006.
- Donn, Katharina. *Emergent Wounds: Poetics of Trauma after 9/11*. (Doctoral dissertation University of Augsburg.) London: Routledge, 2016.

- Donn, Katharina. "Beyond the Wasteland: An Ecocritical Reading of Modernist Trauma Literature." *Handbook of Ecocriticism and Cultural Ecology.* Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Drosdowski, Günter, ed. *Duden. Das große Wörterbuch der deutschen Sprache*. Vol. 5. Mannheim/Wien/Zürich: Dudenverlag, 1980: 1948.
- Dürr, Hans-Peter. *Die Zukunft ist ein unbetretener Pfad: Bedeutung und Gestaltung eines ökologischen Lebensstils.* Freiburg: Herder, 1994. Esp. Chap. "Naturwissenschaft und Poesie:" 96–119.
- Easterlin, Nancy. *A Biocultural Approach to Literary Theory and Interpretation*. Baltimore: Johns Hopkins University Press, 2012.
- Ecocriticism. Special Issue of New Literary History 30.3 (1999).
- Ecopsychology. Journal. New Rochelle, NY: Mary Anne Liebert Publishers.
- *Ecozon@. European Journal of Literature, Culture, and Environment.* (Online Journal of the European Association for the Study of Literature, Culture, and Environment.)
- Emmeche, Claus. "A Semiotical Reflection on Biology, Living Signs and Artificial Life." *Biology and Philosophy* 6 (1991): 325–340.
- English Studies. Special Issue: Ecocriticism and English Studies 91, 7, 2010.
- Erikson, Kai. "Notes on Trauma and Community." *Trauma. Explorations in Memory*. Ed. Cathy Caruth. Baltimore and London: Johns Hopkins University Press, 1995: 183–199.
- Estrin, Marc. *Insect Dreams: The Half Life of Gregor Samsa*. New York: BlueHen, 2002.
- Ette, Ottmar. ÜberLebenswissen: Die Aufgabe der Philologie. Berlin: Kadmos, 2004.
- Ette, Ottmar. "ÜberLebensWissen und ZusammenLebensWissen. Von Schiffbrüchen mit Überlebenden in Zeiten beschleunigter Globalisierung." *Theorien der Literatur. Grundlagen und Perspektiven.* Vol. IV. Eds. Günter Butzer and Hubert Zapf. Tübingen and Basel: Francke, 2009: 7–36.
- Evernden, Neil. *The Social Creation of Nature*. Boltimore: John Hopkins University Press, 1992.
- Faggen, Robert. *Robert Frost and the Challenge of Darwin*. Ann Arbor: University of Michigan Press, 2001.
- Faulkner, William. *The Sound and the Fury*. Harmondsworth: Penguin, 1971 [1929].
- Faulkner, William. As I Lay Dying. New York: Random House, 1957 [1930].
- Finke, Peter. "Die äußere und innere Landschaft. Über psychische Energie und kulturelle Kreativität." *Piet Trantel auf dem E 1 von Hameln bis Freiburg*. Ed. M.-P. Schiltsky, Hameln: Selbstverlag der Künstlergruppe Arche, 1998: 107–131, 130.

- Finke, Peter. "Kulturökologie." *Konzepte der Kulturwissenschaften*. Eds. Ansgar and Vera Nünning. Stuttgart: Metzler, 2003: 248–279.
- Finke, Peter. Die Ökologie des Wissens: Exkursionen in eine gefährdete Landschaft. Freiburg: Alber, 2005.
- Finke, Peter. "Die Evolutionäre Kulturökologie: Hintergründe, Prinzipien und Perspektiven einer neuen Theorie der Kultur." *Anglia* 124.1 (2006): 175–217.
- Fischer, Herrmann. Stoff-Wechsel: Auf dem Weg zu einer solaren Chemie für das 21. Jahrhundert. (Metabolism of Substances: On the Way to a Solar Chemistry fort he Twenty-First Century.) Munich: Verlag Antje Kunstmann, 2012.
- Fiske, John. "Surfalism and Sandiotics: The Beach in OZ Culture." *Australian Journal of Cultural Studies* 1.2 (1983): 121–148.
- Fitzgerald, F. Scott. The Great Gatsby. Penguin: Harmondsworth, 1974 [1924].
- Fletcher, Kristopher F. B. *Boios' Ornithogonia as Hesiodic Didactic*. Louisiana State University, https://camws.org/meeting/2009/program/abstracts/10F3.Fletcher.pdf
- Fluck, Winfried. *Das kulturelle Imaginäre: Eine Funktionsgeschichte des amerikanischen Romans 1790–1900*. Frankfurt: Suhrkamp, 1997.
- Fluck, Winfried, Erik Redling, Sabine Sielke, and Hubert Zapf, eds. *American Studies Today. New Research Agendas*. Heidelberg: Universitaetsverlag Winter, 2014.
- Fowkes, Maya and Reuben Rowkes. "Principles of Sustainability in Contemporary Art." *Praesens: Central European Art Review* 1 (2006): 5–12.
- Freud, Sigmund. *Beyond the Pleasure Principle*. Trans. C. J. M. Hubback. London and Vienna: International Psycho-Analytical, 1922.
- Freud, Sigmund. *Erinnern, Wiederholen und Durcharbeiten*. Ed. A. Freud. *Sigmund Freud, Gesammelte Werke*, vol. X. Frankfurt: Fischer, 1969 [1914]: 126–136.
- Frisch, Max. Der Mensch erscheint im Holozän. (Man in the Holocene). Frankfurt: Suhrkamp, 1979.
- Frost, Robert. "Etherializing." *Collected Poems, Prose & Plays.* Eds. Richard Poirier and Mark Richardson. New York: Library of America, 1995a: 358–359.
- Frost, Robert. "The Tuft of Flowers." *Collected Poems, Prose & Plays.* Eds. Richard Poirier and Mark Richardson. New York: Library of America, 1995b: 30–32.
- Frost, Robert. "The Death of the Hired Man." *Collected Poems, Prose & Plays.* Eds. Richard Poirier and Mark Richardson. New York: Library of America, 1995c: 40–45.
- Frost, Robert. "West-Running Brook." *Collected Poems, Prose & Plays*. Eds. Richard Poirier and Mark Richardson. New York: Library of America, 1995d: 236–238.
- Frost, Robert. "Education by Poetry." *Collected Poems, Prose & Plays.* Eds. Richard Poirier and Mark Richardson. New York: Library of America, 1995e: 723–725.

- Frost, Robert. "The Figure a Poem Makes." *Norton Anthology of American Literature:* 1914–1945 (7th ed.). Ed. Mary Loeffelholz. New York and London: Norton, 2007: 1409–1410.
- Gaard, Greta. "Global Warming Narratives: A Femionist Ecocriticial Perspective." *The Future of Ecocriticism: New Horizons*. Eds. Serpil Oppermann, Ufuk Özdağ, Nevin Özkan and Scott Slovic. Newcastle upon Tyne: Cambridge Scholars Press, 2011: 43–44.
- Gadotti, Moacir. *Education for Sustainability: A Contribution to the Decade of Education for Sustainable Development*. Sao Paulo: Editoria e Livraria Instituto Paulo Freire, 2009.
- Garrard, Greg. Ecocriticism. London: Routledge, 2004.
- Garrard, Greg. "Heidegger Nazism Ecocriticism." *ISLE: Interdisciplinary Studies in Literature and Environment* 17.2 (2010): 251–271.
- Garrard, Greg, ed. *Teaching Ecocriticism and Green Cultural Studies*. London and New York: Palgrave Macmillan, 2012.
- Garrard, Greg, ed. *The Oxford Handbook of Ecocriticism*. New York: Oxford University Press, 2014.
- Garrard, Greg. "Nature Cures? Narratives of Personal and Ecological Health." *Ecology and Life Writing*. Eds. Alfred Hornung, and Zhao Baisheng. Heidelberg: Universitaetsverlag Winter, 2013: 309–320.
- Garrard, Greg. "Conciliation and Consilience: Climate Change in Barbara Kingsolver's *Flight Behaviour*." http://www.academia.edu/13455906/Conciliation\_and\_Consilience\_Climate\_Change\_in\_Barbara\_Kingsolver\_s\_Flight\_Behaviour retr. August 13, 2015.
- Garrard, Greg. "Conciliation and Consilience: Climate Change in Barbara Kingsolver's *Flight Behaviour*." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Gersdorf, Catrin. Review of *Environmental Criticism for the Twenty-First Century*. Eds. Stephanie LeMenager, Teresa Shewry, and Ken Hültner. *Anglia* 131.2–3, 2013, 454–457.
- Gersdorf, Catrin and Sylvia Mayer, eds. *Natur Kultur Text: Beiträge zu Ökologie und Literaturwissenschaft.* Heidelberg: Winter, 2005.
- Gersdorf, Catrin and Sylvia Mayer, eds. *Nature in Literary and Cultural Studies: Transatlantic Conversations on Ecocriticism.* Amsterdam: Rodopi, 2006.
- Ghosh, Amitav. The Hungry Tide. New York: Harper Collins, 2005.
- Ginsberg, Allen. "Sunflower Sutra." *Selected Poems: 1947–1995.* New York: Harper Collins, 1996: 60–61.
- Glotfelty, Cherryl and Harold Fromm, eds. *The Ecocriticism Reader: Landmarks in Literary Ecology*. Athens, GA and London: University of Georgia Press, 1996: 105–111.

- Goeminne, Gert. "Once upon a Time I Was a Nuclear Physicist: What the Politics of Sustainability Can Learn from the Nuclear Laboratory." *Perspectives on Science* 19.1 (2011): 1–20.
- Goodbody, Axel. Nature, Technology and Cultural Change in Twentieth Century German Literature: The Challenge of Ecocriticism. Basingstoke: Palgrave Macmillan, 2007.
- Goodbody, Axel and Berbeli Wanning, eds. Wasser Kultur Ökologie. Beiträge zum Wandel im Umgang mit dem Wasser und zu seiner literarischen Imagination. München: Beck, 2008.
- Goodbody, Axel and Kate Rigby, eds. *Ecocritical Theory: New European Approaches*. Charlottesville: University of Virginia Press, 2011.
- Gould, Stephen Jay. *The Hedgehog, the Fox and the Magister's Pox.* New York: Harmony Books, 2003.
- Grabe, Lisa. *Das "Projekt Nachhaltigkeit." Zu den Grenzen des Nachhaltigkeitskonzepts aus kultureller Perspektive*. Cultura21 eBooks series on Culture and Sustainability. 1, 2010. http://magazin.cultura21.de/piazza/texte.
- Grabes, Herbert, ed. *Literary History/Cultural History: Force-Fields and Tensions*. REAL. Vol. 17. Tübingen: Narr, 2001.
- Gras, Vernon W. "Why the Humanities Need a New Paradigm which Ecology Can Provide." *Anglistik: Mitteilungen des Deutschen Anglistenverbandes* 14.2 (2003): 45–61.
- Grewe-Volpp, Christa. Natural Spaces Mapped by Human Minds: Ökokritische und ökofeministische Analysen zeitgenössischer amerikanischer Romane. Tübingen: Narr, 2004.
- Grewe-Volpp, Christa. "Ecofeminism, the Toxic Body, and Linda Hogan's Power." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Grimm, Sieglinde and Berbeli Wanning, eds. *Kulturökologie und Literaturdidaktik*. Göttingen: V & R unipress, 2015.
- Grimm, Sieglinde and Berbeli Wanning. "Cultural Ecology and the Teaching of Literature." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Grober, Ulrich. "Modewort mit tiefen Wurzeln Kleine Begriffsgeschichte von 'sustainability' und 'Nachhaltigkeit." *Jahrbuch Ökologie 2003*. München: Beck, 2002, 167–175.
- Grober, Ulrich. *Sustainability: A Cultural History*. Cambridge: Green Books, 2012.
- Guattari, Felix. *Three Ecologies*. Translated by Ian Pindar and Paul Sutton. New Brunswick, NJ: Athlone, 2000.

- Gymnich, Marion and Ansgar Nünning, eds. Funktionen von Literatur. Theoretische Grundlagen und Modellinterpretationen. Trier: WVT, 2005.
- H. D. "Oread." *The Penguin Book of American Verse*. Ed. Geoffrey Moore. London: Penguin, 1989: 297.
- Hayles, N. Katherine. *The Cosmic Web: Scientific Field Models and Literary Strategies in the Twentieth Century*. Ithaca: Cornell University Press, 1984.
- Hayles, N. Katherine, ed. *Chaos and Order. Complex Dynamics in Literature and Science*. Chicago: University of Chicago Press, 1991.
- Hawthorne, Nathaniel. *The Scarlet Letter and Selected Tales*. Harmondsworth: Penguin, 1986 [1850].
- Hayward, Tim. Ecological Thought: An Introduction. Cambridge: Polity Press, 1994.
- Heaney, Seamus. "The Salmon Fisher to the Salmon." *Door into the Dark*. London: Faber and Faber, 1969: 18.
- Hegel, Georg and Wilhelm Friedrich. System der Wissenschaft. Erster Teil die Phänomenologie des Geistes. 1807. Engl. trans. Phenomenology of Mind. Transl. by J.B. Baillie. London: Harper & Row, 1967.
- Hegel, Georg and Wilhelm Friedrich. *Vorlesungen über Ästhetik*. 1835. Engl.trans. *Aesthetics.Lectures on Fine Art*, trans. T.M. Knox, 2 vols. Oxford: Clarendon Press, 1975.
- Heise, Ursula. Sense of Place and Sense of Planet: The Environmental Imagination of the Global. Oxford: Oxford University Press, 2008.
- Heise, Ursula. Nach der Natur: Das Artensterben und die moderne Kultur (After Nature: Species Extinction and Modern Culture). Frankfurt: Suhrkamp, 2010a.
- Heise, Ursula. "Afterword: Postcolonial Ecocriticism and the Question of Literature." *Postcolonial Green. Environmental Politics and World Narratives.* Eds. Bonnie Roos and Alex Hunt. Under the Sign of Nature. Charlottesville: University of Virginia Press, 2010b: 251–258.
- Herzogenrath, Bernd. *Deleuze, Guattari & Ecology*. Basingstoke: Palgrave Macmillan, 2009.
- Hesse, Hermann. "Beim Schlafengehen." "Upon Going to Sleep." Translated by David Paley. http://www.poemswithoutfrontiers.com/Beim\_Schlafengehen.html retr. August 12, 2015.
- Hillman, James. The Force of Character. New York: Ballantine, 1999.
- Hoffmeyer, Jesper, ed. *A Legacy for Living Systems: Gregory Bateson as Precursor to Biosemiotics.* Heidelberg: Springer 2008.
- Hogan, Linda. "To Light." *Harper's Anthology of Twentieth Century Native American Poetry*. Ed. Duane Niatum. San Francisco: Harper & Row, 1988: 197.
- Hölldobler, Bert and Edward O. Wilson. *The Superorganism. The Beauty, Elegance, and Strangeness of Insect Societies*. New York: Norton, 2008.

- Hornung, Alfred. "Chinese Garden Culture and Ecological Life Writing." *Ecology and Life Writing*. Eds. Alfred Hornung and Zhao Baisheng. Heidelberg: Winter, 2013: 299–307.
- Hornung, Alfred. "Response to Hubert Zapf." *American Studies Today. New Research Agendas*. Eds. Winfried Fluck, Erik Redling, Sabine Sielke, and Hubert Zapf. Heidelberg: Universitaetsverlag Winter, 2014: 254–259.
- Hornung, Alfred and Zhao Baisheng, eds. *Ecology and Life Writing*. Heidelberg: Universitaetsverlag Winter, 2013.
- Horstmann, Ulrich. *Ansätze zu einer technomorphen Theorie der Dichtung bei Edgar Allan Poe.* Frankfurt: Peter Lang, 1976.
- Huggan, Graham and Helen Tiffin, eds. *Postcolonial Eccocriticism: Literature, Animals, Environment.* London: Routledge, 2010.
- Hulme, Mike. Why We Disagree About Climate Change. Understanding Controversy, Inaction and Opportunity. Cambridge: Cambridge University Press, 2009.
- Hustvedt, Siri. What I Loved. New York: Holt, 2003.
- Hutcheon, Linda. "Eruptions of the Postmodern: The Postcolonial and the Ecological." *Essays on Canadian Writing*. Vol. 51/52. Toronto: ECW Press, 1993–1994: 146–163.
- Inglehart, Ronald. *Modernization and Postmodernization*. Princeton, NJ: Princeton University Press, 1997.
- Ingram, Anie Merrill, Ian Marshall, Daniel J. Philippon, and Adam W. Sweeting, eds. *Coming into Contact: Explorations in Ecocritical Theory and Practice*. Athens: University of Georgia Press, 2007.
- Iovino, Serenella. "Ecocriticism and Non-Anthropocentric Humanism: Reflections on Local Natures and Global Responsibilities." Local Natures, Global Responsibilities: Ecocritical Perspectives on the New English Literatures. Eds. Laurenz Volkmann et al. Amsterdam: Rodopi, 2010: 29–53.
- Iovino, Serenella. "Material Ecocriticism. Matter, Text, and Posthuman Ethics." Literature, Ecology, Ethics. Recent Trends in Ecocriticism. Eds. Timo Müller and Michael Sauter. Heidelberg: Winter, 2012: 51–68.
- Iovino, Serenella and Serpil Oppermann, eds. *Material Ecocriticism*. Bloomington: Indiana University Press, 2014.
- Iser, Wolfgang. *The Fictive and the Imaginary: Charting Literary Anthropology.*Baltimore: John Hopkins University Press, 1993.
- Iser, Wolfgang. "Von der Gegenwärtigkeit des Ästhetischen." *Theorien der Literatur. Grundlagen und Perspektiven*. Eds. Hans Vilmar Geppert and Hubert Zapf. Tübingen: Francke, 2003: 9–28.
- *ISLE: Interdisciplinary Studies in Literature and Environment.* Quarterly Journal of the Association for the Study of Literature and Environment. Ed. Scott Slovic. Oxford University Press.

- James, Jennifer C. "Buried in Guano: Race, Labor, and Sustainability." American Literary History 24.21 (2012): 115–142.
- Jameson, Frederic. *The Political Unconscious. Narrative as a Socially Symbolic Act.* Ithaca, NY: Cornell University Press, 1981.
- Jarzombek, Mark. "Sustainability Architecture: Between Fuzzy Systems and Wicked Problems." Blueprints 21.1 (March 21, 2014): 6–9. http://web.mit.edu/mmj4/www/downloads/blueprints21\_1.pdf Retr
- Joyce, James. *A Portrait of the Artist as a Young Man*. Harmondsworth: Penguin, 1971. Kafka, Franz. *Kritische Ausgabe in 15 Bänden*. Frankfurt: Fischer, 2002.
- Kagan, Sascha. *Art and Sustainability. Connecting Patterns for a Culture of Complexity.* Bielefeld: transcript, 2011.
- Kangas, Steve. "The Origins of the Overclass." October 30, 2015 http://www.american-Ruddha.com/fahren-ray.paradicelosthomofaber.htm, 1–27.
- Kant, Immanuel. Kritik der Urteilskraft. Engl. Trans. Kant's Critique of Judgement. Transl. with Intr. and notes by J. H. Bernard. 2nd and revised ed. London: Macmillan 1914. Retr. July 31, 2015. http://oll.libertyfund.org/titles/1217
- Kaufman, Wallace. "Discuss: Dark Ecology." Response to Paul Kingsnorth. "Dark Ecology." *Orion Magazine*. June 20, 2013: 41.
- Keats, John. "Letter to George and Thomas Keats." *Critical Theory since Plato*. Ed. Hazard Adams. New York: Harcourt Brace Jovanovich, 1971: 474.
- Kellert, Stephen and Edward O. Wilson, eds. *The Biophilia Hypothesis*. Washington, DC: Shearwater, 1993.
- Kerridge, Richard. Cold Blood. London: Chatto and Windus, 2014.
- Kerridge, Richard and Neil Sammells. *Writing the Environment*. London: Zed Books, 1998.
- Kis, Danilo. *Homo Poeticus. Essays and Interviews*. Trans. Ralph Manheim and Francis Jones. New York: Farrar, Straus and Giroux, 2003.
- Kroeber, Karl. *Ecological Literary Criticism: Romantic Imagining and the Biology of Mind*. New York: Columbia University Press, 1994.
- Kurt, Hildegard and Bernd Wagner, eds. *Kultur Kunst Nachhaltigkeit: Die Bedeutung von Kultur für das Leitbild Nachhaltige Entwicklung.* Bonn: Klartext Verlag, 2002.
- LaCapra, Dominick. *Writing History, Writing Trauma*. Baltimore: Johns Hopkins University Press, 2001.
- LaCapra, Dominick. "Interview with Dominick LaCapra." By Amos Goldberg. Shoah Resource Center. International School for Holocaust Studies. www.yadvashem. org. Retr. April 23, 2014: 1–8.
- Latour, Bruno. *Politics of Nature: How to Bring the Sciences into Democracy*. Cambridge, MA: Harvard University Press, 2004.

- Lawrence, Elizabeth Atwood. "The Sacred Bee, the Filthy Pig, and the Bat out of Hell: Animal Symbolism as Cognitive Biophilia." *The Biophilia Hypothesis*. Eds. Stephen Kellert and Edward O. Wilson. Washington, DC and Covelo, CA: Island Press, 1993: 301–341.
- Leopold, Aldo. *A Sand County Almanac and Sketches Here and There*. New York: Oxford University Press, 1989.
- Link, Jürgen. "Interdiskurs." *Metzler Lexikon Literatur und Kulturtheorie: Ansätze Personen Grundbegriffe*. Ed. Ansgar Nünning. Stuttgart: Metzler, 2001: 236–37.
- *Literature and Ecology.* Special Issue of *Anglia. Journal of English Philology.* Ed. Hubert Zapf. 124, 1 (2006).
- *Literature and Science.* Special Issue of *Anglia. Journal of English Philology.* Ed. Hubert Zapf. 133, 1 (2015).
- Ljungberg, Christina. "Wilderness from an Ecosemiotic Perspective." *Semeiotike: Sign Systems Studies* 29.1 (2001): 169–186.
- Lockwood, Alex. "The Affective Legacy of *Silent Spring*." *Environmental Humanities* 1 (2012): 123–140.
- Lousley, Cheryl. "Ecocriticism and the Politics of Representation." *The Oxford Handbook of Ecocriticism*. Ed. Greg Garrard. New York: Oxford University Press, 2014: 155–171.
- Love, Glen A. "Ecocriticism and Science: Toward Consilience?" *New Literary History* 30.3 (1999): 561–576.
- Lovelock, James. "Nuclear Power Is the Only Green Solution." *The Independent* 24 May 2004.
- Lovelock, James. "What Is Gaia?" James Lovelock homepage. Retr. July 30, 2015. http://ecolo.org/lovelock/what\_is\_Gaia.html
- Lubbers, Klaus. "Understanding Edgar Allan Poe's 'The Masque of the Red Death.'" *Fremde Texte Verstehen. Festschrift für Lothar Bredella zum 60. Geburtstag.* Eds. Herbert Christ and Michael Legutke. Tübingen: Narr, 1996: 231–245.
- Luckhurst, Roger. The Trauma Question. London: Routledge 2008.
- Luhmann, Niklas. *The Differentiation of Society*. New York: Columbia Uniersity Pess, 1982.
- Luhmann, Niklas. Ecological Communication. Cambridge: Polity Press, 1989.
- Lussier, Mark. "Blake, Deleuze, and the Emergence of Ecological Consciousness." *Ecocritical Theory: New European Approaches.* Eds. Axekl Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 256–270.
- Lynch, Tom, Cheryll Glotfelty, and Karla Armbruster, eds. *The Bioregional Imagination: Literature, Ecology, and Place*. Athens: University of Georgia Press. 2012.

- Lyotard, Jean-Francois. "Ecology as Discourse of the Secluded." *The Green Studies Reader: From Romanticism to Ecocriticism*. Ed. Laurence Coupe. London: Routledge, 2000: 135–138.
- Macauley, David. *Elemental Philosophy: Earth, Air, Fire, and Water as Environmental Ideas*. Albany: SUNY Press, 2010.
- MacEwan, Ian. On Chesil Beach. New York: Random House, 2007.
- MacLure, Maggie, Rachel Holmes, Liz Jones, and Christina MacRae. "Silence as Resistance to Analysis: Or, on Not Opening One's Mouth Properly." *Qualitative Inquiry* July 2010: 492–500. https://preferringbartleby.wordpress.com/2012/12/02/modern-bartleby/
- Mahler, Gustav. *Des Knaben Wunderhorn*. Lieder und Gesänge 2, 3, 1892. English translation, *The Youth's Magic Horn*. http://hampsongfoundation.org/all-texts-and-translations-for-des-knaben-wunderhorn/
- Manghi, Sergio. "Foreword in Wider Perspective." *Mind and Nature.*A Necessary Unity. Ed. Gregory Bateson. Cresskill, NJ: Hampton Press, 2002: ix–xiii.
- Maran, Timo. "Biosemiotic Criticism." *Oxford Handbook of Ecocriticism*. Ed. Greg Garrard. Oxford: Oxford University Press, 260–275.
- Marcuse, Herbert. *Eros and Civilization: A Philosophical Inquiry into Freud.* 2nd ed. Boston: Beacon Press, 1987.
- Margulis, Lynn. *Symbiotic Planet: A New View of Evolution*. New York: Basic Books, 1998.
- Marquette, Catherine. "Cultural Ecology." *Sociocultural Theory in Anthropology*. Indiana University, May 1998. January 14, 2014. http://www.indiana.edu/~wanthro/eco.htm.
- Mauch, Christof and Sylvia Mayer, eds. American Environments. Climate Cultures
   Catastrophe. Publications of the Bavarian American Academy 12. Heidelberg:
   Universitätsverlag Winter, 2012.
- Mayer, Mathias. "Literaturwissenschaft und Ethik." *Theorien der Literatur: Grundlagen und Perspektiven.* Eds. Hans Vilmar Geppert and Hubert Zapf. Vol. 2. Tübingen: Francke, 2005: 5–20.
- Mayer, Sylvia. "Literature in the Anthropocene: World Risk Society and Ecoglobalism." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Mayer, Sylvia, ed. Restoring the Connection to the Natural World: Essays on the African American Environmental Imagination. Münster: LitVerlag, 2003.
- Mda, Zakes. The Whale Caller. New York: Farrar, Straus and Giroux, 2006.
- Melville, Herman. *Moby-Dick, or, The Whale*. Ed. Alfred Kazin. Boston: Riverside, 1956 [1851].

- Melville, Herman. "Bartleby, the Scrivener: A Story of Wall-Street." *The Piazza Tales and Other Prose Pieces 1839–1860*. Ed. Harrison Hayford et al. Evanston: Northwestern University Press; Chicago: Newberry Library, 1987 [1853]: 13–45.
- Merchant, Carolyne. *The Death of Nature. Women, Ecology, and the Scientific Revolution*. San Francisco: HarperOne, 2008.
- Merleau-Ponty, Maurice. *The Visible and the Invisible*. Ed. Claude Lefort. Trans. Alphonso Lingis. Evanston: Northwestern University Press, 1968.
- Miller, Hillis. The Ethics of Reading. New York: Columbia University Press, 1987.
- Miller, John F., ed. *A Handbook to the Reception of Ovid*. Hoboken, NJ: Wiley-Blackwell, 2014.
- Montero, Mayra. In the Palm of Darkness. New York: Harper Perennial, 1998.
- Morin, Edgar. *Method. Towards a Study of Humankind. Vol. I: The Nature of Nature.* Frankfurt and New York: Peter Lang, 1992.
- Morrison, Toni. Beloved. Harmondsworth: Penguin/Signet, 1991 [1987].
- Morrison, Susan Signe. *The Literature of Waste. Material Ecopoetics and Ethical Matter.* London: Palgrave MacMillan, 2015.
- Mortimer-Sandilands, Catriona and Bruce Erikson, eds. *Queer Ecologies: Sex. Nature, Politics, Desire.* Bloomington: Indiana University Press, 2010.
- Morton, Timothy. *Ecology Without Nature*. *Rethinking Environmental Aesthetics*. Cambridge, MA: Harvard University Press, 2007.
- Morton, Timothy. *The Ecological Thought*. Cambridge, MA: Harvard University Press, 2010.
- Mukherjee, Upamanyu Pablo. *Postcolonial Environments. Nature, Culture and the Contemporary Indian Novel in English.* Basingstoke and New York: Palgrave Macmillan, 2010.
- Müller, Timo. "Between Poststructuralism and the Natural Sciences: Models and Strategies of Recent Cultural Ecology." *Anglistik: International Journal of English Studies* 21.1 (2010a): 175–191.
- Müller, Timo. "Notes Toward an Ecological Conception of Bakhtin's 'Chronotope." *Ecozon@* 1.1 (2010b): 98–102.
- Müller, Timo. "From Literary Anthropology to Cultural Ecology: German Ecocritical Theory since Wolfgang Iser." *Ecocritical Theory: New European Approaches*. Eds. Axel Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 71–83.
- Müller, Timo. "The Ecology of Literary Chronotopes." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Müller, Timo and Michael Sauter, eds. *Literature, Ecology, Ethics. Recent Trends in Ecocriticism.* Heidelberg: Winter, 2012.

- Murphy, Patrick D. "Grounding Anotherness and Answerability Through Allonational Ecoliterature Formations." *Nature in Literary and Cultural Studies*. Eds. Catrin Gersdorf and Sylvia Mayer. Amsterdam: Rodopi, 2006: 417–434.
- Murphy, Patrick. *Ecocritical Explorations in Literary and Cultural Studies: Fences, Boundaries, and Fields.* Lanham: Lexington Books, 2009.
- Murphy, Patrick. Transversal Ecocritical Praxis: Theoretical Arguments, Literary Analysis, and Cultural Critique. Lanham: Lexington Books, 2013
- Naveh, Zev. "The Total Human Ecosystem: Integrating Ecology and Economics." *BioScience* 50. 4 (2000): 357–361.
- Nemeth, Darlyne Gaynor, Robert B. Hamilton, and Judith Kuriansky, eds. *Living in an Environmentally Traumatized World: Healing Ourselves and Our Planet*. Santa Barbara, CA: Praeger, 2012.
- Nennen, Heinz-Ulrich. Ökologie im Diskurs: Zu Grundfragen der Anthropologie und Ökologie und zur Ethik der Wissenschaften. Opladen: Westdeutscher Verlag, 1991.
- Nentwig, Wolfgang, Sven Bacher, and Roland Brandl. Ökologie Kompakt. Heidelberg: Springer, 2007.
- Newbury, Michael. "Fast Zombie/Slow Zombie: Food Writing, Horror Movies, and Agribusiness Apocalypse." *American Literary History* 24.1 (2012): 87–114.
- Newman, Lance. Our Common Dwelling. London: Palgrave MacMillan, 2005.
- Nicolescu, Basarab. *Manifesto of Transdisciplinarity*. Albany: State University of New York Press, 2002.
- Nicolescu, Basarab, ed. *Transdisciplinarity: Theory and Practice*. Cresskill: Hampton Press, 2008.
- Nietzsche, Friedrich. "Ecce Homo." Der Fall Wagner, Götzen-Dämmerung, Der Antichrist, Ecce Homo, Dionysos-Dithyramben, Nietzsche contra Wagner. Eds. Giorgio Colli and Mazzino Montinari. Berlin: De Gruyter, 1994: 255–374.
- Nietzsche, Friedrich. "Ecce Homo," English translation Corngold, Stanley. "Nietzsche: Nihilism and Neo-Gnosticism." *Nietzsche, Nihilism and the Philosophy of the Future.* Eds. Jeffrey Metzger. London: Continuum, 2009: 37–54, 53.
- Nixon, Rob. *Slow Violence and the Environmentalism of the Poor*. Cambridge: Harvard University Press, 2011.
- Noble, Denis. *The Music of Life. Biology Beyond Genes*. Oxford: Oxford University Press, 2006.
- Novalis. "Traktat vom Licht." 1802. Projekt Gutenberg. Retr. August 1, 2015. http://gutenberg.spiegel.de/buch/neue-fragmente-5231/3
- Nussbaum, Martha C. "Perceptive Equilibrium: Literary Theory and Ethical Theory." The Future of Literary Theory. Ed. Ralph Cohen. New York: Routledge, 1989: 58–85.
- Nussbaum, Martha. *Love's Knowledge: Essays on Philosophy and Literature*. New York: Oxford University Press, 1992.

- O'Grady, John P. "How Sustainable Is the Idea of Sustainability?" *ISLE: Interdisciplinary Studies in Literature and the Environment* 10.1 (Winter 2003): 1–10.
- Okuyade, Ogaga. "Ecocultures and the African Literary Tradition." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Oppermann, Serpil. "Theorizing Ecocriticism: Toward a Postmodern Ecocritical Practice." *ISLE: Interdisciplinary Studies in Literature and the Environment* 13.2 (2006): 103–128.
- Oppermann, Serpil. "The Rhizomatic Trajectory of Ecocriticism." *Ecozon@: European Journal of Literature, Culture and Environment* 1.1 (2010):17–21.
- Oppermann, Serpil. "Transnationalization of Ecocriticism." *Anglia* 130.3 (2012): 401–419.
- Orr, David W. Ecological Literacy: Education and the Transition to a Postmodern World, Albany: SUNY Press, 1992.
- Ortiz, J. Simon. "Spreading Wings on Wind." *Harper's Anthology of Twentieth Century Native American Poetry*. Ed. Duane Niatum. San Francisco: Harper & Row, 1988: 141.
- Ortiz, J. Simon. "Wind and Glacier Voices." *Woven Stone*. Tucson: University of Arizona Press, 1991: 114.
- Ovid. *Metamorphoses*. Translated by A.D. Melville. Oxford: Oxford University Press, 1986.
- Parrish, Susan Scott. "Faulkner and the Outer Weather of 1927." *American Literary History* 24.1 (2012): 34–58.
- Peirce, Charles Sanders. The Essential Peirce. Selected Philosophical Writings.
  Vol. I. Ed. Peirce Edition Project. Bloomington and Indianapolis: Bloomington University Press, 1998.
- Phillipon, Daniel J. "Sustainability and the Humanities: An Extensive Pleasure." *American Literary History* 24.1 (2012): 163–179.
- Phillips, Dana. *The Truth of Ecology: Nature, Culture, and Literature in America*. Oxford: Oxford University Press, 2003.
- Platen, Edgar. Perspektiven literarischer Ethik: Erinnern und Erfinden in der Literatur der Bundesrepublik. Tübingen: Francke, 2001.
- Plato. "Ion." *Dialogues of Plato*. Trans. Benjamin Jowett. Cambridge Library Collections, 2010.
- Plato: The Republic. Trans. Tom Griffith. Cambridge: Cambridge University Press, 2000.
- Plumwood, Val. Feminism and the Mastery of Nature. New York: Routledge, 1993.
- Poe, Edgar Allan. "The Poetic Principle." Edgar Allan Poe. Selected Prose, Poetry, and Eureka. Ed. and intr. W. H. Auden. New York etc.: Holt, Rinehart and Winston, 1950: 415–420.

- Poe, Edgar Allan. "The Masque of the Red Death." *Selected Prose, Poetry, and Eureka*. Ed. W.H. Auden. New York etc.: Holt, Reinhardt and Winston, 1950: 124–130 [1842].
- Poe, Edgar Allan. "The Poetic Principle." *Selected Prose, Poetry, and Eureka*. Ed. W.H. Auden. New York etc.: Holt, Reinhardt and Winston, 1950: 415–420.
- Poe, Edgar Allan. "Review of Hawthorne's Twice-Told Tales." *Selected Prose, Poetry, and Eureka*, Hrsg. W.H. Auden. New York etc.: Holt, Reinhardt and Winston, 1950: 447–456 [1847].
- Poe, Edgar Allan. "Eureka." *The Poems*. Ed. Floyd Stovall. Charlottesville: University of Virginia Press, 1965 [1848].
- Poe, Edgar Allan. "Annabel Lee." *The Complete Works of Edgar Allan Poe*. Ed. James A. Harrison. Vol. VII. New York: AMS Press, 1965: 117–118 [1849].
- Powers, Richard. The Time of Our Singing. London: Vintage, 2004.
- Pütz, Manfred, ed. *Nietzsche in American Literature and Thought*. Columbia, SC: Camden House, 1995.
- Raglon, Rebecca and Marian Scholtmejer. "Heading off the Trail: Language, Literature, and Nature's Resistance to Narrative." *Beyond Nature Writing*. Eds. Karla Armbruster and Kathleen R. Wallace. Charlottesville: University of Virginia Press, 2001: 248–262.
- Rangarajan, Swarnalatha. "Women Writing Nature in the Global South: New Forest Texts from Fractured Indian Forests." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Redling, Erik. "Mikhail Bakhtin and the Boundaries of Postmodernism: From Polyphony to Polygraphy." *Redefining Modernism and Postmodernism*. Eds. Sebnem Toplu and Hubert Zapf. Newcastle upon Tyne: Cambridge Scholars Press, 2010: 192–198.
- Reinfandt, Christoph. Der Sinn der sozialen Wirklichkeit. Ein systemtheoretischer Entwurf zur Ausdifferenzierung des englischen Romans vom 18. Jahrhundert bis zur Gegenwart. Anglistische Forschungen. Heidelberg: Universitätsverlag Winter, 1997.
- RIBA Royal Institute of British Architects. *Sustainability and Climate Change*. http://www.architecture.com/RIBA/Campaigns%20and%20issues/PublicAffairs/ConsultationandLegislation/Sustainability.aspx
- Ricoeur, Paul. *Oneself as Another*. Trans. Kathleen Blamey. Chicago: University of Chicago Press, 1992.
- Rigby, Kate. "Earth, World, Text: On the (Im-)Possibility of Ecopoiesis." *New Literary History* 35.3 (2004): 427–442.
- Rigby, Kate. "Prometheus Redeemed? From Autoconstruction to Ecopoetics." *Ecospirit: Religions and Philosophies for the Earth.* Eds. Laurel Kearns and Catherine Keller. New York: Fordham University Press, 2007: 270–294.

- Rigby, Kate. "Gernot Böhme's Ecological Aesthetics of Atmosphere." *Ecocritical Theory: New European Approaches*. Eds. Axel Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 139–167.
- Rigby, Kate. "Romanticism and Ecocriticism." *Oxford Handbook of Ecocriticism*. Ed. Greg Garrard. New York: Oxford University Press, 2014: 60–79.
- Rigby, Kate. *Dancing with Disaster: Environmental Histories, Narratives, and Ethics for Perilous Times.* Charlottesville: University of Virginia Press, 2015.
- Rilke, Rainer Maria. "Birth of Venus." English translation by Christopher Middleton. "Christopher Middleton and Rainer Maria Rilke: Rilke's Birth of Venus." *Arion: A Journal of Humanities and the Classics* 7.3 (1968): 372–391. Boston: Boston University Press.
- Rilke, Rainer Maria. "Geburt der Venus." Werke: Gedichte 1895 bis 1910. Eds. Manfred Engel and Ulrich Fülleborn. Frankfurt a.M.: Wissenschaftliche Buchgesellschaft, 1996: 506–508.
- Rohr, Susanne. Über die Schönheit des Findens. Die Binnenstruktur menschlichen Verstehens nach Charles S. Peirce: Abduktionslogik und Kreativität. Stuttgart: Metzler, 1993.
- Rohr, Susanne and Andrew S. Gross. *Comedy Avant-Garde Scandal: Remembering the Holocaust after the End of History*. Heidelberg: Winter, 2010.
- Rolston, Holmes III. "Biophilia, Selfish Genes, Shared Values." *The Biophilia Hypothesis*. Eds. Stephen R. Kellert and Edward O. Wilson. Washington, DC: Island Press, 1993: 381–414.
- Roos, Bonnie and Alex Hunt, eds. *Postcolonial Green. Environmental Politics and World Narratives*. Charlottesville: University of Virginia Press, 2010.
- Rothberg, Michael. *Multidirectional Memory. Remembering the Holocaust in the Age of Decolonization*. Stanford: Stanford University Press, 2009.
- Royal Institute of British Architects. *Sustainability and Climate Change*. March 21, 2014. http://www.architecture.com/FindOutAbout/Sustainabilityandclimatechange/Sustainabilityandclimatechange.aspx#. UzFZuc49V41.
- Rueckert, William. "Literature and Ecology: An Experiment in Ecocriticism." *The Ecocriticism Reader: Landmarks in Literary Ecology.* Eds. Cherryl Glotfelty and Harold Fromm. Athens: University of Georgia Press, 1996: 105–111.
- Ruether, Rosemary Radford. *Gaia & God: An Ecofeminist Theology of Earth Healing*. San Francisco: HarperCollins, 1992.
- Sandilands, Catriona. *The Good-Natured Feminist. Ecofeminism and the Quest for Democracy*. Minneapolis: University of Minnesota Press, 1999.
- Sandilands, Catriona. "Green Things in the Garbage: Ecocritical Gleaning in Walter Benjamin's Arcades." *Ecocritical Theory: New European Approaches*. Eds. Axel

- Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 30–42.
- Sarkowsky, Katja. "Leslie Marmon Silko *Ceremony*. Konflikt, Kultur und die Macht des Erzählens." *Grosse Werke der Literatur*. Vol. XII. Eds. Guenter Butzer and Hubert Zapf. Tübingen: Francke, 2012: 169–185.
- Schäfer, Roland, and Birgit Metzger. "Was macht eigentlich das Waldsterben?" *Umweltgeschichte und Umweltzukunft: Zur gesellschaftlichen Relevanz einer jungen Disziplin*. Eds. Patrick Masius, Ole Sparenberg, and Jana Sprenger. Göttingen:

  Universitätsverlag Göttingen, 2009: 201–227.
- Schätzing, Frank. Der Schwarm (The Swarm). Kiepenheuer & Witsch: Cologne, 2004. Schelling, Friedrich Wilhelm. Ideas for a Philosophy of Nature: As Introduction to the

*Study of this Science.* Trans. E.E. Harris and P. Heath with an introduction R. Stern, Cambridge: Cambridge University Press, 1988 [1797].

- Schelling, Friedrich Wilhelm. *System of Transcendental Idealism*. Trans. P. Heath with an introduction by M. Vater, Charlottesville: University Press of Virginia, 1978 [1800].
- Schelling, Friedrich Wilhelm. *The Philosophy of Art*. Minnesota: Minnesota University Press, 1989 [1802–1803].
- Schelling, Friedrich Wilhelm. *On the Relation of the Plastic Arts to Nature*. Trans. J.E. Cabot. *Critical Theory since Plato*. Ed. Hazard Adams. New York etc.: Harcourt Brace Jovanovich, 1970 [1807]: 446–458.
- Schliephake, Christopher. *Urban Ecologies. City Space, Material Agency, and Environmental Politics in Contemporary Culture.* Lanham etc.: Lexington Books, 2014.
- Schliephake, Christopher. "Literary Place and Cultural Memory." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Schmidt, Christopher. *The Poetics of Waste*: Queer Excess in Stein, Ashbery, Schuyler, and Goldsmith. London: Palgrave McMillan, 2014.
- Schwartzman, David. *Life, Temperature, and the Earth: The Self-Organizing Biosphere.* Columbia University Press, 2002.
- Seefried, Elke. "Rethinking Progress. On the Origin of the Modern Sustainability Discourse, 1970–2000." *Journal of Modern European History* 13, 3 (2015): 377–400.
- Shakespeare, William. *Twelfth Night or What You Will*. Ed. Elizabeth Story Donno. Cambridge: Cambridge University Press, 2004.
- Shakespeare, William. *The Tempest*. Ed. David Lindley. Cambridge: Cambridge University Press, 2013.
- Shapiro, Gary. "Peirce's Critique of Hegel's Phenomenology and Dialectic." *Transactions of the Charles S. Peirce Society* 17.3 (1981): 269–275.
- Shelley, Percy Bysshe. "Ode to the West Wind." *The Poems of Shelley*. Eds. Jack Donovan et al., Vol. 3. Harlow: Pearson, 2011: 204–212.

- Silko, Leslie Marmon. Ceremony. New York: Penguin, 1977.
- Simmons, Charles. Salt Water. San Francisco: Chronicle Books, 1998.
- Sklovskij, Victor. "Art as Technique." *Russian Formalist Criticism: Four Essays*. Trans. and eds. Lee T. Lemon and Marion J. Reis. Lincoln: University of Nebraska Press, 1965: 5–22.
- Sloterdijk, Peter. "Rules for the Human Zoo: A Response to the Letter on Humanism." 1999. Trans. Mary Varney Rorty. *Environment and Planning D: Society and Space* 27 (2009): 12–28.
- Slovic, Scott. *Going Away to Think: Engagement, Retreat, and Ecocritical Responsibility.* Reno: University of Nevada Press, 2008.
- Slovic, Scott. "Commentary." American Literary History 24.1 (2012): 180–188.
- Slovic, Scott. "Narrative Scholarship as an American Contribution to Global Ecocriticism." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- Slovic, Scott, James E. Bishop, and Kyhl Lyndgaard, eds. *Currents of the Universal Being: Explorations in the Literature of Energy*. Lubbock: Texas Tech University, 2015.
- Smith, Stephanie, ed. *Beyond Green. Toward a Sustainable Art.* Chicago: Smart Museum of Art, 2005.
- Snyder, Gary. Regarding Wave. New York: New Directions, 1970.
- Soentgen, Jens and Helena Bilandzic. "Die Struktur klimaskeptischer Argumente. Verschwörungstheorie als Wissenschaftskritik." ("The Structure of Climate Skeptical Arguments. Conspiracy Theory as a Critique of Science.") *GAIA. Ecological Perspectives for Science and Society/ Ökologische Perspektiven für Wissenschaft und Gesellschaft.* 1 (2014): 40–47.
- Sontag, Susan. Regarding the Pain of Others. London: Hamish Hamilton, 2003.
- Soper, Kate. What Is Nature? Culture, Politics and the Non-Human. Oxford: Blackwell, 1995.
- Soper, Kate. "Passing Glories and Romantic Retrievals: Avant-garde Nostalgia and Hedonist Renewal." *Ecocritical Theory: New European Approaches*. Eds Axel Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 17–29.
- Spinner, Kaspar H. "Atmosphäre als ästhetischer Begriff." *Theorien der Literatur. Grundlagen und Perspektiven.* Vol. V. Eds. Günter Butzer and Hubert Zapf. Tübingen: Francke, 2011: 201–216.
- Stivers, Robert L. *The Sustainable Society: Ethics and Economic Growth.* Philadelphia: Westminster Press, 1976.
- Stone, Michael K. and Zenobia Barlow, eds. *Ecological Literacy: Educating Our Children for a Sustainable World*, San Francisco, CA: Sierra Club Books, 2005.

- Suzuki, David and Amanda McConnell. *The Sacred Balance: Recovering Our Place in Nature*. 1997. Vancouver: Greystone, 1999.
- Taylor, Matthew A. "The Nature of Fear: Edgar Allan Poe and Posthuman Ecology." *American Literature* 84.2 (2012): 353–379.
- Thompson, Evan. *Mind in Life. Biology, Phenomenology, and the Sciences of Mind.* Cambridge and London: Harvard University Press, 2007.
- Thoreau, Henry David. *Walden, or Life in the Woods*. The Writings of Henry D. Thoreau. Ed. James London Shanley. Princeton, NJ: Princeton University Press, 1971 [1854].
- Trojanow, Iljia. EisTau. (Melting Ice.) München: Hanser, 2011.
- Turner, Mark, ed. *The Artful Mind. Cognitive Science and the Riddle of Human Creativity.* New York: Oxford University, 2006.
- TUTZINGER MANIFESTO for the strengthening of the cultural-aesthetic dimension of sustainable development 2001–2002. http://www.kupoge.de/ifk/tutzinger-manifest/pdf/tuma-gb.pdf
- Uexküll, Jakob von. *Umwelt und Innenwelt der Tiere*. Eds. Florian Mildenberger and Bernd Herrmann. Heidelberg: Springer, 2014.
- Ullmann, Viktor. *Der Kaiser von Atlantis oder die Todverweigerung.* (*The Emperor of Atlantis or the Disobedience of Death*, Score.) Eds. Henning Brauel and Andreas Krause. Mainz: Schott Music, 1992.
- Umweltbundesamt, "Kohlendioxid-Emissionen." September 3, 2013. May 13, 2014. http://www.umweltbundesamt.de/daten/klimawandel/treibhausgas-emissionen-in-deutschland/kohlendioxid-emissionen.
- Wagner, Richard. *Tristan und Isolde*. Engl. Transl. *Tristan and Isolde*. http://www.rwagner.net/e-toolbar.html retr. August 12, 2015.
- Wanning, Berbeli. Forschungsstelle Kulturökologie und Literaturdidaktik. University of Siegen. http://www.uni-siegen.de/phil/kulturoekologie/
- Wardi, Anissa Janine. *Water and African American Memory: An Ecocritical Perspective*. Gainesville: University of Florida Press, 2011.
- Webster's Universal New International Dictionary of the English Language Unabridged. Ed. Philip Babkock Grove. Springfield, MA: Merriam Webster, 1986.
- Weik von Mossner, Alexa. Cosmopolitan Minds: Literature, Emotion, and the Transnational Imagination. Austin: University of Texas Press, 2014.
- Weik von Mossner, Alexa. "Environmental Narrative, Embodiment, and Emotion." *Handbook of Ecocriticism and Cultural Ecology*. Ed. Hubert Zapf. Berlin and Boston: De Gruyter, 2016.
- West, Rinda. *Out of the Shadow: Ecopsychology, Story, and Encounters with the Land.* Charlottesville: University of Virginia Press, 2007.
- Westling, Louise. "Darwin in Arcadia. Brute Being and the Human Animal Dance from Gilgamesh to Virginia Woolf." *Anglia* 124 (Winter 2006): 11–43.

- Westling, Louise. "Merleau-Ponty's Ecophenomenology." *European Ecocritical Theory*, Eds. Axel Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 126–138.
- Westling, Louise. "Literature and Ecology." *Teaching Ecocriticism and Green Studies*. Ed. Greg Garrard. London: Palgrave McMillan, 2012: 75–89.
- Westling, Louise. *The Logos of the Living World: Merleau-Ponty, Animals, and Language.* New York: Fordham University Press, 2013.
- Westling, Louise. *The Cambridge Companion to Literature and the Environment*. Cambridge: Cambridge University Press, 2014.
- Wheeler, Wendy. *The Whole Creature: Complexity, Biosemiotics and the Evolution of Culture.* London: Lawrence & Wishart, 2006.
- Wheeler, Wendy. "The Biosemiotic Turn: Abduction, or, the Nature of Creative Reason in Nature and Culture." *Ecocritical Theory. New European Approaches*. Eds. Axel Goodbody and Kate Rigby. Charlottesville: University of Virginia Press, 2011: 270–282.
- Whitman, Walt. "Out of the Cradle Endlessly Rocking." Leaves of Grass and Other Writings: Authoritative Texts, Other Poetry and Prose, Criticism. Ed. Michael Moon. New York: Norton, 2002a: 206–212.
- Whitman, Walt. "Song of Myself." Leaves of Grass and Other Writings: Authoritative Texts, Other Poetry and Prose, Criticism. Ed. Michael Moon. New York: Norton, 2002b: 26–78.
- Wilke, Sabine. "From 'Natura Naturata' to 'Natura Naturans': 'Naturphilosophie' and the Concept of a Performing Nature." *Interculture* 4 (2008): 1–23.
- Wilke, Sabine. "The Sound of a Robin After a Rain Shower: Aesthetic Experiences of Nature in Dialectical Conceptions of Nature." *ISLE* 16 (2009): 91–117.
- Wilke, Sabine. *German Culture and the Modern Environmental Imagination*. Leiden and Boston: Brill, 2015.
- Williams, Raymond. Culture and Society: 1780–1950. London: Chatto & Windus, 1958.
- Williams, Raymond. The Long Revolution. London: Chatto & Windus, 1962.
- Williams, Raymond. "The Green Language." Excerpt from *The Country and the City, The Green Studies Reader. From Romanticism to Ecocriticism.* Ed. Laurence Coupe. London and New York: Routledge, 2000: 50–58.
- Wilson, Edward O. *Sociobiology: The New Synthesis*. New York: Belknap Press of Harvard University Press, 1975.
- Wilson, Edward O. Biophilia. Cambridge: Harvard University Press, 1984.
- Wilson, Edward O. *Consilience: The Unity of Knowledge*. New York: Random House, 1998.
- Wilson, Shari L. "Moving People, Produce, and Policy: Environmental Actions at the State and Local Levels Are Going Green!" Kansas Association for Conservation

- and Environmental Education (KACEE). Paper given at the Rachel Carson Center for Environment and Society, Munich. October 25, 2013.
- *Wirtschaftswoche*, July 13, 2003. "Waldsterben in Deutschland gestoppt." May 12, 2014. http://www.wiwo.de/unternehmen/waldsterben-in-deutschlandgestoppt/4788852.html.
- Wood, Gillen D'Arcy. "What Is Sustainability Studies?" *American Literary History* 24.1 (2012): 1–15.
- Wordsworth, William. "Ode: Intimations of Immortality." *Oxford Book of English Verse*. New York: Oxford University Press, 1919: 510–515.
- Wu, Jianuo and Orie L. Loucko. "From Balance of Nature to Hierarchical Patch Dynamics: A Paradigm Shift in Ecology." *Quarterly Review of Biology* 70.4 (1995): 439–460.
- Yad Vashem. *Virtues of Memory. Six Decades of Holocaust Survivors' Creativity.* 2015. http://www.yadvashem.org/yv/en/exhibitions/virtues\_of\_memory/overview.asp
- Zalasiewicz, Jan, Mark Williams, Alan Haywood, and Michael Ellis. "The Anthropocene: A New Epoch of Geological Time?" *Philosophical Transactions* of the Royal Society A: Mathematical, Physical and Engineering Sciences 369.1938 (March 13, 2011): 835–841.
- Zapf, Hubert. "The Discourse of Radical Alterity: Reading Process and Cultural Meaning in William Faulkner's *The Sound and the Fury*." *Intercultural Encounters Studies in English Literatures. Essays Presented to Rüdiger Ahrens*. Eds. Heinz Antor and Kevin Cope. Heidelberg: Winter, 1999: 335–349.
- Zapf, Hubert. Literatur als kulturelle Ökologie: Zur kulturellen Funktion imaginativer Texte an Beispielen des amerikanischen Romans. Tübingen: Niemeyer, 2002.
- Zapf, Hubert. "Literary Ecology and the Ethics of Texts." *New Literary History* 39.4 (2008a): 847–868.
- Zapf, Hubert, ed. Kulturökologie und Literatur: Beiträge zu einem transdisziplinären Paradigma der Literaturwissenschaft. Heidelberg: Winter, 2008b.
- Zapf, Hubert. "Ecocriticism, Cultural Ecology, and Literary Studies." *Ecozon@*. Online Journal of the European Association for the Study of Literature, Culture, and Environment. 1.1 (2010): 136–147.
- Zapf, Hubert. "Creative Matter and Creative Mind. Cultural Ecology and Literary Creativity." *Material Ecocriticism*. Eds. Serenella Iovino and Serpil Oppermann. Bloomington: Indiana University Press, 2014: 51–66.
- Zapf, Hubert, ed. Handbook of Ecocriticism and Cultural Ecology. Berlin and Boston: De Gruyter, 2016.
- Zimmerman, Michael E. "Nietzsche and Ecology: A Critical Inquiry." Unpublished essay. Retr. May 26, 2014.

Ziolkowski, Theodore. *Minos and the Moderns. Cretan Myth in Twentieth-Century Literature and Art.* Oxford and New York: Oxford University Press, 2008. Žižek, Slavoj. *Looking Awry: An Introduction to Jacques Lacan through Popular Culture.* Cambridge: MIT Press, 1992.

| Abbey, Edward, Desert Solitaire 41, 42        | Attridge, David 5                               |
|---|---|
| Abram, David 64, 82                           | Atwood, Margaret 23-5, 54                       |
| Adams, Hazard 96                              | <i>Oryx and Crake</i> 23–5, 54, 263–5           |
| Adamson, Joni 21, 34, 84                      | Auster, Paul 262                                |
| Adorno, Theodor W. 66, 67, 71, 91, 101,       | Austin, Mary, The Land of Little Rain 41        |
| 140, 168                                      | autopoetic 12, 98, 126, 131, 144, 156, 158,     |
| aesthetic theory 27, 66, 91-3, 139            | 190, 192, 216, 231                              |
| aesthetics 7, 9, 20–2, 29, 41, 61–2, 62–3,    | autopoiesis 70, 80, 98, 129-30, 130, 266        |
| 66, 91, 100–1, 125, 128–9, 139–58,            |   |
| 159, 165, 169, 179, 189, 211, 245-6,          | Bachelard, Gaston 179                           |
| 248, 259, 265, 268                            | Bakhtin, Mikhail M. 101, 195, 246               |
| aesthetic experience 129, 152                 | Banerjee, Mita 48, 254                          |
| aesthetic function 3, 4, 8, 11, 12, 20, 21,   | Barad, Karen 46, 72, 111, 214, 263              |
| 26, 59, 68, 135, 178, 227, 260                | Bartosch, Roman 13, 246-7, 256-7                |
| and postcolonialism 49, 50                    | Bate, Jonathan 64                               |
| African American literature 8, 108, 113,      | Bateson, Gregory 5, 7, 20, 35, 45, 78, 79,      |
| 119-20, 166, 186, 235-9, 258, 267             | 89, 92, 161–3, 165–8, 178                       |
| Agamben, Georgio 136, 137                     | Baumgarten, Alexander Gottlieb,                 |
| Alaimo, Stacy 18-19, 46, 48, 72, 82, 129,     | Aesthetica 91                                   |
| 214   | beach 7, 17-24, 106, 187, 189-205               |
| American Dream 157, 220, 222-5                | Beck, Ulrich 52–5                               |
| Ammons, A. R. 8, 29, 34-5, 169                | Beckett, Samuel 230, 234                        |
| animal 59, 64, 68-9, 86, 217, 256             | Benjamin, Walter 67, 100                        |
| Anthropocene 8, 52, 83, 86, 145, 241,         | Bennet, Jane 72, 85                             |
| 258-65  | Bennett, John W. 77                             |
| anthropocentric 3, 19, 29, 35, 40-2, 48,      | Bergthaller, Hannes 23, 24, 46                  |
| 63, 82, 87, 91, 105, 110–11, 118,             | Berressem, Hanjo 46, 70, 71, 81                 |
| 121, 135, 147–8, 156, 190, 194, 201,          | Berry, Wendell                                  |
| 204-5, 217-18, 242, 245, 247, 260,            | "A Meeting in a Part" 22                        |
| 262-6   | The Unsettling of America 41, 42                |
| anthropotechnology 23, 24, 26                 | Bilandzic, Helena 53                            |
| Arac, Jonathan 14, 258, 267                   | biocentric 29, 35, 60, 91, 121, 135, 216,       |
| Aristotle 146, 148–9, 177, 242                | 232, 268  |
| Arnim, Achim von 237–8                        | biocultural approach 48, 125-8                  |
| art 9, 13, 17, 18, 23, 126–7                  | biophilia 60, 91, 105, 109, 112, 121, 131, 133, |
| artistic 4, 8, 11–13, 20, 25, 28–9, 62–3, 96, | 161, 172, 174, 181, 185, 189, 214, 243          |
| 103, 133, 139–42, 148, 156–7, 167,            | biophobia 91, 104, 107-8, 110, 131, 133,        |
| 185, 210–11, 227, 251                         | 136, 199, 219, 262                              |
| atmosphere 129, 131, 144, 231                 | bioregional 170, 247                            |
|   |   |

biosemiotics/biosemiotic 63, 91, 97-9, Commoner, Barry 11 102, 118-19, 136, 160-1, 166, complexity 4, 20, 32, 46, 59, 80, 93, 103, 180-1, 203, 232, 234, 256, 263, 268 123-4, 126, 146, 153, 156, 160, 178, Bishop, Elizabeth 166 253, 257-8, 261, 264 Bloch, Ernst 101 Conley, Vera 67 Blumenberg, Hans 190, 193 connecting patterns 7, 35, 148, 159-76 body as Leib or Körper 64, 128 consilience 78, 89, 115, 242-3 Bohm, David 142-3, 160 Cradle to Cradle design 16 Böhme, Gernot 47, 57, 91, 125, 126, creative energy 13, 14, 32, 72, 121, 147-8, 128-9, 131, 169, 179 159-76, 182, 231, 265, 268 Böhme, Hartmut 87, 179 creativity 12, 13, 25, 28, 29, 108, 142, Boyle, T. C., A Friend of the Earth 54, 263-5 159-76, 180, 181, 183, 190-205, Brandt, Stefan 46 233, 268 Braungart, Michael 16 critical theory 7, 47, 61-73, 101, 123, 126, Brentano, Clemens 237-8 140, 246 Brin, David 260 Crutzen, Paul 52 cultural constructivism 41, 61, 72 Brundtland Report 15 Buddhism 177, 186 cultural criticism 7, 13, 24, 26, 65, 153, 186 Buell, Lawrence 41, 47 cultural ecology as a general theory 3-11, Butler, Judith 244 77 - 80cultural ecosystem 4, 26, 29, 79–80, 91, 159,266-7canon 13, 41, 132-3 capitalism 15, 23, 24, 59, 65, 133, 136, 165 cultural evolution 4, 25, 27, 35, 57–8, 60, Capra, Fritjof 17 79-80, 86, 89, 95, 98, 126-8, 160, 164, 192, 216, 230, 265, 268 Carneiro, Robert L. 77 Carson, Rachel, Silent Spring 43-4, 140-1 cultural sustainability 17-26 Caruth, Cathy 209, 212-13 culture-critical metadiscourse 95, 102-8, Celan, Paul 210-11 115, 136, 157, 255 chaos (and order) 139-46 Charlton, Noel G. 165, 166, 178 Danto, Arthur C. 140, 142 Chernobyl 51-2, 55, 248 dark ecology 69, 149-58 Chinese tradition 145-6, 178, 267 Dark Mountain Project 56, 58, 82 Chopin, Kate, The Awakening 8, 103, 105-6, Darwin, Charles 170 D'blin, Alfred 262 111-12, 117-18, 158, 165, 198-9 Civelekoglu, Funda 66, 101 deep ecology 56 defamiliarization 12, 35, 100, 139, 159, 247 Clare, John 65 Clark, Timothy 47, 52, 55, 258-61, 265 Defoe, Daniel Robinson Crusoe 195-6 class 13, 46, 48, 51, 82, 107, 154, 226, 238, 255 Deleuze 19, 70, 71, 143 classicism 13, 148, 157 DeLillo, Don 261 Claviez, Thomas 69, 246 Falling Man 227 climate change 8, 18, 39, 51, 53-5, 57, 83, *Underworld* 250-1, 262 144, 145, 241, 258-65 DeLoughrey, Elizabeth 49 climate fiction 53, 54, 259, 263 de Man, Paul 82 depragmatized text 27, 30, 58, 159, 230, Club of Rome 15 coevolution 12, 25, 80, 91, 121, 181, 202, 216 cognitive biophilia 161, 172, 181 Derrida, Jacques 68-9, 211, 233, 259 Coleridge, Samuel Taylor 62, 96, 185, 218 Desmond, William 178, 179 colonialism 48-9, 186, 194-6 determinism 77, 79, 163, 261

deterministic 86, 100, 235, 244, 261 energy field 28, 33, 71, 180, 182, 232, 233, Dickinson, Emily 8, 29, 161, 181 251 "A narrow fellow in the Grass" 30-2, enlightenment 101 dialectic of 66-7 difference 11, 12, 18, 28, 31, 78, 82, 83, environmental agendas 21, 41, 59, 260 86-9, 96-9, 104, 109, 135, 144, 182, environmental crisis 39, 40, 52-60, 145, 239, 244, 254 Dillard, Annie, Pilgrim at Tinker Creek environmental disaster 48, 51, 52-60, 86, 41, 42 248, 263 Dimock, Wai Chee 258, 267, 270 environmental humanities 5, 47, 50, 52, 241 DiPrete, Laura 213-14 environmental justice 18-19, 21, 34, 48, discursive heterotopia 27 51, 241, 255 environmental policies 15, 59 Donn, Katharina 211 Dos Passos, John 260, 261 environmental writing 12, 41, 44-6, 65, Dowland, John 237 92, 140, 262 Dürr, Hans-Peter 25 equilibrium 4, 83, 140, 143, 144 Estrin, Marc, Insect Dreams 251–3 Eaglestone, Robert 211 ethics of texts 8, 21, 25, 69, 241-8 Easterlin, Nancy 11, 46, 125-8, 131 Ette, Ottmar 7, 125, 131, 190, 193 ecocentric 42, 48, 128, 133, 205, 217, 241, evaluation 13, 263 Evernden, Neil 48, 169 266 exploitation (economic) 23, 42, 119, 185, ecocentrism 3, 48, 63-4, 64, 82, 87, 132, 205 224, 249-50, 261 ecocosmopolitics 84 ecofeminism 46-8, 64, 175-6 Faggen, Robert 170-1 ecoglobal 8, 253-68 Falling Man 227 ecological force 4, 13, 27-35, 90, 95, 102, Faulkner, William As I Lay Dying 167 121, 147, 149, 176, 233, 266-7 The Bear 181 ecological knowledge 5, 6, 17, 21, 35, 42, 44, 79, 242-3, 256-7, 257 The Sound and the Fury 8, 21, 103, ecological unconscious 169, 181 106-7, 112-13, 118-19, 158, 185, ecology of mind 5, 20, 78-9, 95-6, 133 219 - 20economic exploitation 15, 51, 83 film 9, 21, 39, 85, 164, 210, 248, 259 ecopoetic 30, 118, 163, 174, 182, 257 Finke, Peter 27, 28, 79-80, 89, 159, 163-4, ecopoiesis 59, 92, 130, 144, 180, 266 168, 251 ecopsychology 46, 64 Fischer, Herrmann 16, 17 ecosemiotic/ecosemiotics 4, 8, 28, 64, 108, Fiske, John 189 111, 113-15, 143, 161, 178, 184, Fitzgerald, F. Scott 219 186, 190, 195, 198-9, 201, 204-5, Foer, Jonathan Safran 227 224, 232, 251, 254, 262, 266 formalism 100–1, 128, 139, 169 elements 7, 84, 128, 143, 145, 151, 177-87, Frankfurt School 66, 100-1, 128 191, 196 Freud, Sigmund 68, 209, 212-13, 214 embodied dynamicism 126 Frisch, Max Der Mensch erscheint im Emerson, Ralph Waldo 62 Holozän 263-5 Emmeche, Claus 97 Fromm, Harold 40 empathy 28, 82, 112, 130, 176, 214, 220, Frost, Robert 8, 165, 169-76, 180, 185 The Death of the Hired Man 174-6 Etherializing 173–4 energy 13, 14, 16, 18, 28, 35, 54, 55, 58, 71, 79–80, 139, 163–9, 180, 182, 183 *The Tuft of Flowers* 171–4

Gaia hypothesis 48, 54, 143, 144 Hustvedt, Siri, What I Loved 211-12, 217 Garrard, Greg 45, 46, 63, 64, 115 Hutcheon, Linda 67 gender 5, 13, 46, 48, 51, 82, 104-5, 176, 193 German literature 8, 16, 52, 62, 129, Ihimaera, Witi, The Whale Rider 202-3 179-80, 234, 258 imaginative counter-discourse 12, 95, 102, Gersdorf, Catrin 67, 78, 249 108-14, 115, 119, 136 Ghosh, Amitav, The Hungry Tide 59, included middle 124 253-8, 262 indeterminacy 14, 32, 60, 66, 71, 92, 124, Ginsberg, Allen 8, 165, 169, 180-1 135, 137, 149, 178, 227, 229, 257, global 14, 40, 44, 46, 48, 49, 51, 241-68 264, 268 Glotfelty, Cherryll 40 Indian literature 8, 224, 267 Goethe, Johann Wolfgang von 62, 142, 237 indigenous cosmopolitics 21, 34 Goodbody, Axel 3, 46, 63, 87, 169, 185, indigenous literatures 34, 49, 220 2.29 Inglehart, Ronald 245 Gould, Stephen J. 89 Innenwelt 79, 160 Grass, Günter 57 Iovino, Serenella 29, 46, 47, 72, 85, 87, Grewe-Volpp, Christa 47 263, 265 Grober, Ulrich 17, 25 IPCC 53-5 Guattari, Felix 70 Iser, Wolfgang 27, 101-2, 130, 159, 168, H.D. "Oread" 215-16 Jameson, Fredric 169 Haeckel, Ernst 40 Jeffers, Robinson 181 Handley, George B. 49 Harjo, Joy 166, 181 Jewett, Sarah Orne 166, 181 Hawthorne, Nathaniel 8, 151 Joyce, James 167, 260, 261 The Scarlet Letter 8, 103-5, 109-10, 115-16, 148, 158, 183, 219, 230-2 Kafka, Franz 218-19, 234, 262 Hayles, Katherine N. 72, 142, 150 "The Metamorphosis" 218–19, 251–3 Kagan, Sascha 15, 18, 20, 21, 143, 149, Heaney, Seamus 168 Hegel, Georg Wilhelm Friedrich 91, 95-7, 156, 158 100, 168 Kangas, Steve 24 Heidegger, Martin 63, 64 Kant, Immanuel 62, 70, 91, 96, 168, 242 Heise, Ursula 46, 49-50, 55, 59, 60, 63, Keats, John 66, 71, 165, 181 248, 256, 257, 260, 261 Kis, Danilo 211 knowledge of life 7, 125-32, 131-7, 207, Hemingway, Ernest 181, 185, 219 Herzogenrath, Bernd 70, 72, 141 255-6, 266-7 Hesse, Hermann 253 LaCapra, Dominick 209, 220 Hindu 177 historical factors 27, 86, 121, 141 language Hoffmann, E. T. A 179 as missing link 80 Hoffmeyer, Jesper 160 as sensory communication 128-9 Larsen, Hans-Erik 179, 185 Hogan, Linda 8, 29, 32-5, 185, 186 Hölderlin, Friedrich 63, 179 Latour, Bruno 69, 85 holistic 16-17, 35, 62, 95, 135, 145-6, 157, Lawrence, Elizabeth A. 161, 181 207, 214, 239 Leopold, Aldo, A Sand County Almanac Hölldobler, Bert 78 41-3, 140, 241 Hornung, Alfred 132, 145 Lévinas, Emmanuel 69, 70, 245, 246 Huggan, Graham 48 life sciences 4, 7, 30–1, 125–8, 160, 235 Hulme, Mike 53 liminal space 7, 191

| Link, Jürgen 99                                 | metaphor 25, 28, 29, 31, 45, 92, 161-3, 172-4 |
|---|---|
| literary knowledge 6, 30, 44, 68, 89, 91-2,     | 180, 181, 184, 190, 200, 213, 235             |
| 125–32, 175–6, 228, 255–6                       | Miller, Hillis J. 215, 244-5                  |
| literary studies 5, 6, 17, 19, 26, 40, 72, 125, | Minotaur 216–18                               |
| 160, 163, 245                                   | modernization 28, 35, 44, 56, 80, 91, 99,     |
| literary theory, order and chaos in             | 147, 164, 245, 257                            |
| 146-9   | Montero, Mayra 59, 60                         |
| Ljungberg, Christina 251                        | Moore, Marianne 166, 181                      |
| local and global 49, 51, 241-68                 | Morrison, Toni, Beloved 8, 103, 108,          |
| Lopez, Barry, Arctic Dreams 41, 42, 184         | 113-14, 119-20, 158, 186, 234, 236,           |
| Lotman, Jurij 251                               | 257, 258                                      |
| Lousley, Cheryl 44                              | Morton, Timothy 12, 31, 47, 67, 69-70, 73     |
| Lovelock, James 48, 54, 55, 58, 143,            | 81-3, 149, 262                                |
| 144   | Mossner, Weik von 46                          |
| Lubbers, Klaus 153                              | Müller, Timo 101, 229                         |
| Luhmann, Niklas 27, 90, 98, 142                 | multidisciplinary 6, 56, 244                  |
| Lussier, Mark 70, 71                            | Murphy, Patrick 241, 246, 247                 |
| Lyotard, Jean-Francois 67–8, 246                | music 9, 111–12, 116, 145, 158, 164, 183,     |
| , , ,   | 194–5, 199, 235–9, 252                        |
| Macauley, David 84, 150, 177-9, 185             | mythology 147, 177, 191–2, 215–18, 226        |
| mad scientist 23                                | 7   |
| Mahler, Gustav, The Youth's Magic Horn          | Nachhaltigkeit 15                             |
| 237–9   | Native American 8, 34, 49, 133, 143, 166,     |
| Manghi, Sergio 79                               | 184-5, 249-50, 258                            |
| Maori 202                                       | natural ecosystem 16, 25-6, 29, 40, 42, 80,   |
| Marcuse, Herbert 100                            | 189, 266                                      |
| Margulis, Lynn 48, 143–4                        | nature 23, 35, 39–73, 83                      |
| Marquette, Catherine 77                         | as construct 3, 48, 61, 65, 69–70, 82–4,      |
| Marxism 46, 100, 101                            | 94, 104, 169                                  |
| material ecocriticism 29, 72, 81-7              | and postcolonialism 48-50, 253-68             |
| Mauch, Christoph 55                             | and women 47–8                                |
| Mayer, Mathias 245                              | Naturphilosophie 62–3                         |
| Mayer, Sylvia 55, 79                            | Naveh, Zev 143                                |
| McCarthy, Cormac, <i>The Road</i> 263–5         | Nicolescu, Basarab 124, 257, 267              |
| McDonough, William 16                           | Nietzsche 14, 63, 70, 139, 179, 182           |
| McEwan, Ian, On Chesil Beach 199–200            | Nixon, Rob 48, 51                             |
| Mda, Zakes, The Whale Caller 203-5,             | Noble, Denis 235                              |
| 256–8   | non-anthropocentric humanism 87, 265          |
| Medusa 216, 217                                 | nonhuman nature 20, 21, 23, 43, 51, 60,       |
| Melville, Herman                                | 62, 64, 69, 87, 90, 104–5, 128–9,             |
| "Bartleby" 8, 132-7, 158, 233-4, 262            | 132, 134, 135, 144, 148, 173, 197,            |
| Moby-Dick 8, 103, 105, 110–11,                  | 205, 239, 246–7, 251                          |
| 116–17, 158, 181, 219                           | Novalis 16, 17, 179, 180                      |
| Merchant, Carolyne 47                           | nuclear 51–5, 58, 86, 249–53, 261–2,          |
| Merleau-Ponty, Maurice 64, 119                  | 278   |
| metabolism 16, 144                              | Nussbaum, Martha 244                          |
| metamorphosis 79, 90, 113, 118, 148,            | •   |
| 163–4, 168, 172, 191, 213, 215–18,              | O'Grady, John 22-4                            |
| 253, 262, 264                                   | opera 9, 210                                  |

Oppermann, Serpil 29, 47, 49, 72, 85, 263 Robinson, Kim Stanley 54, 259 order (and chaos) 7, 139-59, 177, 190 Rohr, Susanne 99, 211 Orr, David 17 romanticism 13, 62-3, 66-7, 71, 84, 90, 96, Ortiz, Simon 8, 181 139, 157, 165, 180, 192, 196 Spreading Wings on Wind 184-5 Roth, Philip, The Human Stain 226 Ovid, Metamorphoses 90, 215, 216 Rueckert, William 14, 28, 121, 163 Ozick, Cynthia 211, 220 Sandilands, Catriona 46, 48, 67 Peirce, Charles Sanders 6, 97–100, 102, Sarkowsky, Katja 224 Sauter, Michael 229 Philippon, Dan 21 Schätzing, Frank, The Swarm 263-5 Plato 146-8 Schelling, Friedrich Wilhelm 62, 96 Plumwood, Val 82, 189 Schliephake, Christopher 248 Poe, Edgar Allan 8, 141, 142, 181 Schubert, Franz 237 "Annabel Lee" 196-7 sciences 4, 7, 15, 17, 19, 21, 40, 46, 55, 60, Eureka 150-1 72, 78–81, 85, 125–6, 130–1, 141–3, "Masque of the Red Death" 8, 149, 150, 159, 160, 235, 242-4, 267 Shakespeare, William 112, 153 polysemic 14, 29, 92, 116, 126, 179, 257, The Tempest 183, 193-5 Twelfth Night 193 Shapiro, Gary 97 postcolonialism 5, 8, 13, 201-5, 241, 249, Shelley, Percy Bysshe 165, 183-4 253-68, 254 "Ode to the West Wind" 183-4 posthuman 25, 63, 87, 156, 264, 269 Shoah 140, 210-13 postmodern 8, 40, 56, 61, 72, 86, 101, 113, Silko, Leslie Marmon Ceremony 8, 41, 166, 142, 157, 211, 218, 225, 232, 251, 202, 221-5, 248-50, 257, 258, 262 255, 261 postmodernism 13, 67, 72-3, 84, 229, 242, Simmons, Charles, Salt Water 200-1 245, 253, 258 singularity of literature 5 Sklovskij, Victor 100, 139 poststructuralism 67, 98, 233 Powers, Richard, The Time of Our Singing Sloterdijk, Peter 23, 24 Slovic, Scott 21, 22, 40-2, 46, 163 235, 236, 238-9 Pütz, Manfred 14 Snow, C. P. 242 Pynchon, Thomas 217 Snyder, Gary 143, 166, 185 socialist realism 13 Redling, Erik 101 Soentgen, Jens 53 Reed, Ishmael 166 solar energy 16, 144 reflexive interactivity 29, 34, 131, 161, 180 Soper, Kate 47, 48, 66, 67, 71 Reinfandt, Christoph 99, 142 South African literature 8, 258 reintegrative interdiscourse 12, 60, 95, 99, Spiegelman, Art 227, 234 102, 114–21, 137, 204 Spinner, Kaspar 129 rhizome 70 Steward, Julian 77, 78 Rhys, Jean, Wide Sargasso Sea 127 Stoermer, Eugene 52 Ricoeur, Paul 244 strangeness 12, 31, 142, 217 Rigby, Kate 3, 57, 63, 64, 96, 128-9, 229 surrealism 13 Rilke, Rainer Maria 192 survival 15, 20, 23, 25, 26, 39, 43, 57, 63, "The Birth of Venus" 192 65, 79, 83, 84, 87, 103, 117–18, 126, Duinese Elegies 257, 258 129, 161, 189, 194, 209-12, 226, Robinson, Eden Monkey Beach 202-3, 235, 256-7, 264-5 262 sustainability 4, 15-26, 58, 103, 268

sustainable 4, 7, 14, 15–26, 28, 58, 59, 121, 144, 146, 243 textuality 4, 7, 25, 26, 28, 268 Suzuki, David 145 syllogism in grass 162–3, 168 systems theory 4–5, 20, 46, 79, 98–100, 142–3

Tasso, Torquato, Jerusalem Liberated 212-14, 215 theater 9 therapeutic function 128 Thompson, Evan 48, 92, 126, 130-1, 143, Thoreau, Henry David, Walden 8, 41, 132-4, 136-7 Tiffin, Helen 48 trans-corporeal 129, 214, 215, 217–18 transcultural 6, 8, 46, 50, 83-4, 145, 178, 184, 187, 225, 236, 242, 249, 253–68 transdisciplinarity 8, 123–268 transdisciplinary 3-5, 7, 71, 78, 123-37, 159, 207, 245, 266 transgression 7, 66, 104, 190, 216, 248, 251, 263, 266 transhistorical 13, 27, 121, 191 transnational 6, 8, 48-50, 145, 242, 248, 267 trauma 8, 34, 46, 113-14, 120, 185-7, 199-201, 207-37, 235 triadic functional model 7, 95-121, 136,

Uexküll, Jakob von 79, 160 Ullmann, Viktor, *Der Kaiser von Atlantis* 210

157, 255–7, 266 Trojanow, Ilija, *Melting Ice* 54, 263–5 Umwelt 79, 160 underworld 250–1, 262 urban ecology 46, 67, 137

visual arts 9, 21

Wagner, Richard, Tristan and Isolde 198 - 9Waldsterben 56-7 Wanning, Berbeli 17, 185 Wardi, Anissa Janine 186 waste art 18, 219, 250-1 Westling, Louise 46, 64, 90, 119, 160, 181, 215, 262 Wheeler, Wendy 6, 63, 65, 85, 91, 92, 97-8, 160-1, 215, 232, 262Whitman, Walt 8 Out of the Cradle Endlessly Rocking 197 - 8"Song of Myself" 163-5, 180, 181 wild 35, 49, 106, 112, 143, 182, 195, 205, 251 Wilke, Sabine 62-3, 66 Williams, Raymond 65 Williams, William Carlos 166, 180 Wilson, Edward 32, 46, 78, 89, 115, 242–3 Woolf, Virginia 90, 166–7, 261 Wordsworth, William 65, 127, 180, 196 world literature 14, 258, 267 world risk society 52, 55, 248

Zapf, Hubert 89, 95, 112 Zimmerman, Michael C. 63 Ziolkowski, Theodore 217 Žižek, Slavoj 141, 146