Reading the Book of the World: 
Epic Representation in the Age of Our Geophysical Agency

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In Praise of Astrology

The foundational text of all modern novel theory begins with a paean to astrology. “Happy are those ages when the starry sky is the map of all possible paths—ages whose paths are illuminated by the light of the stars,” Georg Lukács declares in the opening lines of his Theory of the Novel. In such ages, “the world is wide and yet it is like a home, for the fire that burns in the soul is of the same essential nature as the stars.” Consequently, these ages do not need novels, for “each action of the soul” is “complete in meaning and complete for the senses” (29). Only with the arrival of modernity do “meaning” (Sinn) and “senses” (Sinne) become separated from one another. As evidence of this, Lukács invokes Immanuel Kant’s famous declaration that there are two different things that fill the mind with wonder: the starry sky above and the moral law within. Transcendental philosophy, as this quote reminds us, draws an insurmountable trench between the world of external sensation and the world of ideas. The novel is forever condemned to restore a lost totality to what Lukács fittingly calls a world of “transcendental homelessness” (41). In its struggles, it pines for the lost certainties of an earlier age of heavenly prognostication.

A century after the publication of Theory of the Novel, Lukács’s adherence to the tenets of transcendental idealism seems more than a little quaint. The success of the Bolshevik Revolution in Russia had already given a major institutional boost to the competing doctrine of dialectical materialism, and Lukács himself would soon convert to this worldview. Most contemporary editions of his early masterpiece are prefaced by the bone-chilling recantation of it that he wrote in 1962, a few years after the Soviet army put a swift end to the Hungarian revolution. Martin Heidegger’s project of fundamental ontology, another attack on transcendental idealism, was on the horizon as well. As inspired and internally differentiated as these philosophical projects may be, however, they nevertheless preserve the fundamental conception of modernity as a period in which human subjects find themselves at odds with a natural world that can be observed, manipulated, and mastered but never truly assimilated.¹ Twentieth-century novel criticism consequently still hews close to Lukács’s definition of the novel as a secular epic, an attempt to make sense of a world that seems inherently senseless, governed only by convention and circumstance.

¹ Indeed, it was Lukács himself who moved this conviction to the heart of modern dialectical materialism, through his reworking of the Marxist concept of alienation into a comprehensive philosophical theory of “reification.”

Over the course of the last decade or so, however, a new set of even more radical philosophical critiques has sprung up, whose tenor is perhaps best summed up by Bruno Latour’s programmatic declaration that “we have never been modern.” New materialism, speculative realism, object-oriented ontology, and actor-network theory, to list just the most important (and mutually overlapping) names given to these contemporary currents, all insist to varying degrees that subjects and objects, the sensible and the intelligible world, have never existed independently of one another, and that there consequently exists no firm distinction between the starry skies without and the moral law within. And much as the major philosophical movements of the early twentieth century can be seen as reactions to the rapid process of industrialization that characterized the early twentieth century, so these new movements derive their historical grounding from what we are beginning to understand as an even more important change in the human condition: the dawn of the Anthropocene.

The term *Anthropocene*, coined by the biologist Eugene F. Stoermer in the 1980s and popularized by the atmospheric chemist Paul Crutzen in the early years of the new millennium, refers to a new epoch in which human activities begin to leave a permanent trace in the geologic, biologic, and climatological records that together tell the story of the earth’s history. While ecological historians have proposed a broad range of starting dates for the new period—from the first widespread forest clearings during the agricultural revolution roughly twelve thousand years ago to the nuclear-dust-scattering Trinity test of July 16, 1945—most date the Anthropocene to the invention of the steam engine by James Watt in 1765, an event that set into motion today’s unsustainable consumption of fossil fuels, with its attendant consequences of landscape-altering strip mining, environmental contamination, and global climate change.

On first sight, our ongoing rapacious destruction of the environment seems only to confirm Lukács’s pessimistic assessment of modernity. Never before has our remove from the natural world seemed greater, and on most nights, we find it utterly impossible to even see the starry skies above us, due to the ubiquitous smog and light pollution that also rank among the consequences of our insatiable thirst for nonrenewable energy. But if we read Lukács’s assertion that figures in the sky no longer have messages to communicate to us in its widest possible sense, then a rather different picture presents itself. The zodiac signs, the phases of the moon, and the transits of the planets may not speak to us anymore, but the ancients extended the art of prognostication to cloud patterns, rapid weather changes, and bird flight as well—all of them areas of heavy human intervention in the Anthropocene.

Consider the local weather report. Our traditional view of a meteorologist is akin to that of the stone-age hunter described by Carlo Ginzburg in his famous essay on the origins of narrative: someone who scans the natural world for meaningful patterns that can then be converted into a simple story of merely local, rather than universal, interest. In the Anthropocene, however, the diverse phenomena that this same meteorologist examines to deliver the grim news that tomorrow will be another unseasonably hot day convey two additional messages, both intimately related to human history. First, in their sheer aberrancy from any previous norms,
they testify to our ongoing destruction of our planet. But second, and more importantly for the present purpose, they also tell our destiny—not in the superficial manner of a weather report but rather in the sense that our very survival as a species depends on changes to our climate that we as yet poorly understand and for which the only clues are the traces that we ourselves have left in the heavens above.

How will human beings react to the hermeneutic challenge posed by the Anthropocene? For roughly the last three hundred years, the novel has been the most powerful narrative tool by which we have made sense of the world—it is, to once again invoke Lukács, the only “major form of great epic literature” (56) that we know. And yet it is precisely the novel that is most threatened by an age in which the “maps of our possible paths” again reveal themselves in the sky and in which our very planet has become a medium for the storage and recursive transmission of human-generated messages. In the following pages, I will attempt to reflect on this dilemma and offer some cautious suggestions for novel theory as it moves forward into a new century.

Searching for Totality in the Book of Nature

To understand the challenges confronted by the novel today, we need to first understand the ways in which past ages related to the messages they thought they discerned in the surrounding world and in the heavens above. Lukács’s simile of the starry sky as the “map of all possible paths” referred only to the ancient Greeks. According to him, the arrival of Latin Christianity replaced this model of totality with another, in which “the paradoxical link between the soul lost in irredeemable sin and its impossible yet certain redemption became an almost platonic ray of heavenly light in the midst of earthly reality” (37). As literary examples of such “platonic rays,” Lukács mentions the literary epics of Dante and Wolfram von Eschenbach, in which the apparitions of Beatrice and of the Grail play such an important part in guiding the hero toward redemption.

Curiously absent from Lukács’s reflections is a competing Christian conception of totality and oracular prognostication, namely that of Augustine heeding the angelic call of “pick up and read” (tolle, lege) (206). As Hans Blumenberg has pointed out, the New Testament initiates a decisive break with the doctrine of the Platonic forms, since it postulates the creation of the world through a verbal command rather than through a “technomorphic act” (48). Ever since the Gospel of John, in other words, the world has been understood as a product of transcription rather than as an artifact and thus, also, as something that needs to be deciphered rather than apperceived. Accordingly, the stars of Christendom must be understood as symbolic rather than iconographic signifiers: as bearers of obscure messages rather than as maps. Even Plotinus, the greatest exponent of Platonic teachings during the era of early Christianity, argued explicitly that it was the role of astronomy to become acquainted with the “alphabet” of the stars (Blumenberg 42).

It was indeed Augustine who first suggested that the natural world be understood as a codex writ with divine messages when he suggested, in his Enarrations on the Psalms, that “the world should become as a book to you, so that you may see” (liber tibi sit orbis terrarium, ut haec vides) (qtd. in Blumenberg 49). He went on to add
that “only those who know their letters may read the Scriptures, but even the ignorant can read the entirety of the world” (*in istis codicibus non ea legunt, nisi qui litteras noverunt; in toto mundo legat et idiota*) and thereby inaugurated a millennium and a half of theological struggle over the question of which of the two books—the Bible or the book of nature—might be the privileged vehicle for access to the divine voice. Galileo, who fused this tradition with earlier Platonic currents when he argued that the book of nature was written in perfect geometric forms, is only the most prominent victim of these struggles.

The long tradition of the “book of nature” (or *liber naturae*) metaphor in Western letters provides us with a rich conceptual toolset by which to try to understand our current condition at the dawn of the Anthropocene.² Here I will confine myself only to a few unsystematic observations. First, in the book of nature, textuality is inseparable from materiality: the medium, to appropriate Marshall McLuhan, quite literally is also the message. Consider a famous passage from the book of Revelation, which describes how during the Last Judgment “the heaven departed as a scroll when it is rolled together” (*et caelum recessit sicut liber involutus*) (Rev. 6:14).³ In an anticipation of the “two books tradition” that would be inaugurated by Augustine roughly 350 years later, this simile already puts the world into direct competition with that other carrier of inscriptions mentioned so prominently in the text, the eschatological scroll with the seven seals that are successively opened by the Lamb. And yet neither of these two scrolls is ever actually read within the context of the prophecy. Instead, it is the simple act of breaking the seals (a process antecedent even to an unrolling of the scroll) that causes the other scroll to curl up. In marked contrast to all human inscriptions, the signs in the book of nature are thus inseparable from the medium through which they manifest themselves, and the end of the world is both announced and executed through this material manifestation.

As a second observation, we can note that the book of nature is not primarily descriptive but rather expressive in nature. For understandable reasons, novel theorists tend to fixate on the mimetic and diegetic functions of texts—that is, on the exact ways in which they summarize, focalize, and evaluate facts about either extratextual or purely imagined worlds. But as Roman Jakobson famously argued, this “referential” function is only one of a total of six different dimensions of language use. Much more important than the referential function for an understanding of the medieval conception of totality is what Jakobson would term the “emotive” dimension of language: that which “aims at a direct expression of the speaker’s attitude toward what he is speaking about” (66). Medieval monks and mystics were not generally interested in studying nature with an eye toward formulating descriptive systems or theories; they searched instead for expressions of divine will. This search became especially urgent once an increasing number of codices written in many different languages and originating at different times and places began to circulate in the Western world. With multiplying transcriptions and

² For other treatments of this metaphorological tradition besides that of Blumenberg, see Ernst Robert Curtius; Erich Rothacker.
³ Authorized (King James) Version.
interpretations of holy texts readily available to those who dared to look, the notion that the presence of God might manifest itself on the written page no longer seemed quite as compelling. In the fifteenth century, the great German theologian Nicholas of Cusa waged an extended struggle against the excesses of such a purely “expressive” reading of the book of nature (a doctrine now known as “scholastic voluntarism”) and thereby created a philosophical corpus that has frequently been compared to that of Hegel (see, e.g., Cassirer 7).

As humanism vanquished medieval scholasticism, the search for the presence of God in the pages of the book of nature naturally receded into the background. It would be a mistake, however, to suppose that the early modern period immediately substituted a referential account of the world for the older expressive one. The conceptual tools by which we generally link description and reference to the experience of modernity—Max Horkheimer and Theodor W. Adorno’s instrumental reason, say, or the Habermasian distinction between facts and norms, are the products of a later, post-Kantian era. Early modern humanists, on the other hand, evaluated their models of the world less by modern criteria such as falsifiability or suitability toward instrumental ends than by aesthetic categories such as internal simplicity and harmony: in other words, by what Jakobson would have called the “poetic” function of language. The heliocentric model of the universe, for instance, gained widespread acceptance in Europe only after Johannes Kepler demonstrated that its mathematical formulation could be simpler and more elegant than the geocentric model with its multiplying epicycles, an insight at which Kepler arrived largely because of his research into the old Pythagorean notion of the “music of the spheres,” the musica universalis. The principle of logical succinctness known as “Ockham’s razor” (named after the medieval philosopher William of Ockham but actually developed by the seventeenth-century theologian John Punch) is another example of such a primarily aesthetic relationship to the book of nature. The desire for simplicity and harmony is, of course, integral to modern science as well, but it has in most areas of scientific production long been subordinated to a more instrumental outlook on the world.

Here, then, are two characteristics of the liber naturae tradition that can productively be applied to an inquiry into the pitfalls of epic representation in the Anthropocene: first, an emphasis on the materiality rather than textuality of signifiers; second, an interest in the expressive and poetic dimensions of language use rather than merely its referential ones.

From the Book of Nature to the Novel of Worldliness

Modernity, it now needs to be said, has not been kind to the notion of a “book of nature.” Already with René Descartes, modern philosophy suffered a profound shift in emphasis from ontology to epistemology, from a theory of how things are to a theory of how we know the world. Ian Watt influentially dated the rise of the novel precisely to Descartes’s rejection of philosophical universals (Watt 12–18), and even a brief reflection on some canonical early novels suffices to show how categorically opposed their treatment of the world is to all of the principles I have highlighted about the liber naturae tradition. The notion that the singular truth found in the book
of nature trumps the multiplying interpretations offered by human codices, for example, is explicitly parodied throughout Don Quixote, while the outcome of the auto-da-fé near the beginning of that same book testifies to Miguel de Cervantes’s acute awareness of the distinction between a document’s materiality and its textuality: Quixote, far from being cured by the destruction of his romances, instead incorporates their disappearance into his madness.

Robinson Crusoe, too, can be interpreted as a direct engagement with the liber naturae tradition. Daniel Defoe’s novel is an extended triumphalist account of how to read the book of nature, though for entirely instrumental purposes: Crusoe studies, he describes, and he experiments, ultimately all with the goal of subduing his island. Tellingly, the novel reaches its moment of greatest tension when Defoe discovers a sign that he cannot assimilate to his existing mental picture of the island: the footprint of a cannibal. Forced, like Ginzburg’s hunter, to construct a narrative account of what he has seen but unable to provide a causal framework that would make sense of it, Crusoe reverts to an earlier, “portentous” relationship with nature, although even then he cannot fully shake his fundamentally skeptical disposition:

*I was so embarrass’d with my own frightful Ideas of the Thing, that I form’d nothing but dismal Imaginations to my self, even tho’ I was now a great way off of it. Sometimes I fancy’d it must be the Devil; and Reason join’d in with me upon this Supposition. . . . But then to think that Satan should take human Shape upon him in such a Place where there could be no manner of Occasion for it, but to leave the Print of his Foot behind him, and that even for no Purpose too, for he could not be sure I should see it; this was an Amusement the other Way. . . . (112)*

The most important rupture between Robinson Crusoe and the older book-of-nature tradition, however, is performed in the scene in which Crusoe decides to mark the duration of his imprisonment on the island through a system of daily notches in a tree. More than any of his other, far more radical alterations to the natural landscape (the fields cleared for agricultural and pastoral purposes, the holes dug into hillsides), these early notches demonstrate that Crusoe is not interested in *reading* nature so much as in *inscribing* his own will upon it—and that this process of inscription has the principal purpose of giving an ordered structure to the undifferentiated succession of days that characterized the island in its uninhabited state. In a different context, I have argued that it is precisely this attempt to domesticate time that moves the novel into close proximity to a newly awakened interest in historical change that sprang up in the eighteenth century; and, indeed, the eighteenth century is also the period in which the “book of history” first joins and eventually replaces holy scripture and the book of nature as the principal text that human beings consult in order to decipher their destiny (Boes 62–65).

By embracing human history on both grand and intimate scales as its principal subject matter, the novel turned its back on the natural world and instead embraced what Peter Brooks, in his 1969 study of the rise of the novel in France, called “worldliness”: “By ‘worldliness,’ I mean an ethos and personal manner which
indicate that one attaches primary or even exclusive importance to ordered social existence, to life within a public system of values and gestures, to the social techniques that further this life and one’s position in it, and hence to knowledge about society and its forms of comportment” (4). Henceforth, the natural world would figure in the novel not as a material text in its own right but rather as something always already mediated by human intentionality. In a passage that explicitly comments on Lukács’s Theory of the Novel, Adorno borrowed the Hegelian term “second nature” to gloss this dialectical intertwining of the books of nature and history: “The concept of a second nature remains the negation of whatever might be thought of as first nature. . . . It is the totality of whatever has been so completely trapped by social and rational mechanisms . . . that nothing differing from it can manifest itself” (Adorno 120–21).

Although it includes a chapter on Don Quixote, Lukács’s study focuses almost entirely on the novel’s relationship to second nature in the long nineteenth century, an age in which narrative realism vanquished earlier competing strains of narrative logic, such as that of the sentimental or idealist novel. 4 This choice makes eminent sense within the Lukácsian schema. For if it was indeed the transcendental revolution with its shift from the ground of being to the conditions of knowing that inaugurated what Hegel would have called “the age of prose,” then the most appropriate subject for the novel would appear to be the history of how people in different ages have perceived the external world—a history that most obviously reveals itself in the realist movement, with its meticulous attention to manners and customs. It needs to be stressed, however, that there is nothing that would privilege narrative realism as the only or even the best possible point of access to such a record of social perceptions, and indeed there now exists broad consensus that realism might best be seen as the aesthetic manifestation of merely one phase within the larger story of post-Kantian modernity. 5

In fact, the literature of the first half of the twentieth century can perhaps most productively be read as a collective search for a different way to describe the historical conditions that govern humanity’s access to and mediation of the natural world. Many contemporary accounts of modernist literature describe it as a turn inward toward psychology (as witnessed in expressionism, the stream of consciousness, automatic writing, and the like), but it would be much more accurate to adopt the metaphors of the period and describe it as a fracturing or explosion of social consensus regarding the natural world. Modernism, we should never forget, was largely the product of a generation who had gone through the trenches of World War I, had there become one with the earth, and had emerged from the experience with a profound mistrust of social pieties.

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4 How complete this victory was remains a subject of vigorous debate, of course. See, for example, Margaret Cohen and, more recently, the attention paid to “affect” in Fredric Jameson.

5 The tendency to see the nineteenth century as the teleological end point of all mimetic endeavor haunts Erich Auerbach’s otherwise magisterial survey of Western literature, for instance. For a valuable recent corrective that shows how the characteristic techniques of nineteenth-century realism emerge out of a historically contingent mindset, see Franco Moretti.
The extent to which the soldiers who chewed on the wet mud of Flanders Fields while sniffing the air and scanning the tree lines in a desperate attempt to avoid the next gas attack reengaged the liber naturae tradition is an interesting question. There is, of course, no clearer example of “second nature” than a battlefield. The overall consequences for modernist literature, at any rate, tended in the other direction: not the search for a totalizing meaning in nature as such but rather the discovery of purely personal revelations in an ever-multiplying array of social environments: not just existential experiences on battlefields but also moments of profane illumination in city streets, epiphanies at evening parties, and recovered lost time in darkened bedrooms. The equivalent to this within early twentieth-century philosophy can be found in the phenomenology of Edmund Husserl and in the semiotic theories of Jakob von Uexküll, two movements that both rejected the notion of a shared world of experiences. Heidegger, whose magnum opus Being and Time both builds on and ultimately rejects this phenomenological turn, would parody this larger trend with the dismissive phrase “es weltet” (it is worlding) (73).

Planar Texts and Spherical Worlds

The social and experiential fragmentation embraced by the modernists provided literature with a dominant paradigm more or less until the late 1960s, at which point the prevailing attitude toward totality in the novel shifted once again. Rising young authors such as John Barth and Thomas Pynchon displayed little interest in the themes or techniques of their immediate forebears, and they certainly did not return to the conventions of nineteenth-century narrative realism. Instead, they brought a profoundly new strategy of reading to bear on the book of history, one that treated it more as an encyclopedia than as an evolving narrative. (Indeed, in the late 1960s a rumor circulated that Pynchon read no other books but the Encyclopedia Britannica).

Contrary to what is sometimes supposed, postmodernism, at least in its literary manifestations, is not at all lacking in historical sensibility. There is probably no more historically alert novelist working today than Thomas Pynchon. But whereas the nineteenth century had taken a primarily historicist attitude toward the external world, seeking to create totality through empathetic projection, the postmodernists took a primarily semiotic stance, treating the historical record as a storehouse of signs and tropes that might be freely manipulated to create new meanings.6 These semiotic constellations exhibit more than a passing similarity to the older divinations of the liber naturae tradition. Take the ubiquitous W.A.S.T.E. emblem in The Crying of Lot 49 (Pynchon). While it would certainly be possible to give a purely referential explanation for the emblem’s significance and treat Pynchon’s novel as a Dan Brown–like exposé about an ancient secret society, The Crying of Lot 49 clearly derives at least part (if not most) of its appeal from the poetic and expressive

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6 The best illustration of the historicist sensibility operative in most nineteenth-century novelists remains Walter Benjamin’s quotation from Flaubert’s working notes to Salammbô: “Few people will be able to guess how sad I had to be in order to resuscitate Carthage” (256). (Peu de gens devineront combien il a fallu être triste pour ressusciter Carthage.)
qualities of its semiotic games. The constant reappearance of the postal horn in the most unlikely places—waste disposal cans, shop windows, bathroom stalls—parodies the early modern tendency to scan the book of nature for figurative patterns rather than for causal connections just as assuredly as the metaphysical anxiety induced by the seemingly omnipresent Trystero organization parodies the medieval search for divine will in the world.

Within the realm of philosophy, the rise of postmodern literature corresponds both temporally and conceptually to the poststructuralist turn in French and American thought. Like postmodernism, poststructuralism resists the notion that a totalizing referential account of the world would ever be possible, and like postmodernism, it seeks refuge in language games that more than a few critics have derided as merely ornamental and pseudotheological. In order to understand how we get from the 1960s to our contemporary existence in the Anthropocene, however, it is worth drawing attention to a quite different current in continental philosophy of the time. Unlike poststructuralism, this current took its inspiration from the early rather than the late Heidegger; it was, in fact, propagated almost entirely by Heidegger’s former Jewish students, who broke with him over his 1933 rectoral address. One of the foremost figures of this group was Karl Löwith, a thinker in whose work the connections between history, totality, and the natural world are articulated to an exceptionally fine degree. In his 1960 essay “Welt und Menschenwelt” (“World and Human World”), Löwith points out that

\[ \text{[n]owadays, we all exist and think within the horizon of history and of its destinies, but we no longer live within the circumference of the natural world. [And yet] this pre- and supra-human world of the sky and of the earth, which rests in itself and contains itself, exceeds the world of the human by an infinite measure. The physical world can be conceived without any essential connection to the existence of man, but no man can be conceived without a world. (295; my translation)} \]

With these words, Löwith draws a fat double line beneath a half-century of German philosophical preoccupation with Lebens- and Umwelten, insisting on the independence of the natural world, unconnected to the experiential realities of modern man. And he uses an interesting double metaphor when he speaks about a “circumference” onto which humans project their much smaller “horizon of history and of its destinies.” For perhaps the first time in the history of Western thought, the natural world here acquires a clear shape, which is that of a sphere—or perhaps it would be more accurate to say that of a planet.

One rarely discussed consequence of the liber naturae metaphor is that it forces discussions of the natural world into a two-dimensional conceptual frame. The biblical book of Revelations could still imagine the heavens as an unrolled scroll, but with the advent of the codex, the world essentially became a planar surface onto which the messages of nature are writ in much the same way as they would be onto the pages of a book. Löwith, however, whose thought proceeds from a different metaphor, namely that of the hermeneutic horizon of understanding, arrives instead at a three-dimensional framework. One important consequence of this
conceptual shift is that the natural world suddenly becomes finite, a sphere whose
surface closes in upon itself rather than extending toward infinity in all directions,
as it does in the Euclidian geometry of the plane.

It is not particularly hard to see what might have sparked Löwith’s sudden
interest in sky and earth as the limit point of human history as well as his con-
ceptual revision of the natural world as a sphere. In 1957, the Soviets launched the
Sputnik satellite into earth orbit. Four years later, they followed up on this
achievement with the first manned space flight, that of Yuri Gagarin aboard the
Vostok 1. As part of the space race, a steady succession of in-flight cameras returned
pictures of our planet as seen from ever-higher altitudes to a (literally) captive
audience, a development that eventually culminated with the “Whole Earth”
images of the late 1960s. In famous pictures such as “Earthrise” of 1968 or the “Blue
Marble” of 1972, the planet appeared newly meaningful and portentous but also
incredibly fragile and destructible. The Whole Earth images thus provided
humanity at once with a heroic metaphor for its accomplishments and with visual
proof of its fungibility as a species. Löwith was not alone among Heidegger’s
former students to recognize this development as a fundamental game changer for
the course of Western philosophy. Other works that display a similar tendency
include Hannah Arendt’s The Human Condition and Günther Anders’s Der Blick vom
Mond (Views from the Moon).

In the 1960s, then, we observe the rise of two very different strategies for
bringing a totalizing vision to bear upon the world. The first is the strategy
pursued by postmodern literature and poststructuralist philosophy, which
withdraws almost entirely from nature and retreats upon the domain of human
history. Importantly, it perceives this history not as an inherently meaningful
narrative, as it was by nineteenth-century idealists and dialectical materialists,
but simply as a treasure trove of signs from which an arbitrary number of
“master narratives” might be constructed. The second is the strategy that we see
emerge most influentially in the “Whole Earth” images. It focuses on the
materiality of our planet as a substrate grounding any “world picture” that we
might choose to build on top of it. The famous report on the Limits to Growth
published in 1972 (the same year as the “Blue Marble” photograph), for example,
performs just such a function for the free-market infinite-growth fantasies of
neoliberal capitalism.

The second approach returns to nature just as surely as the first approach
moves away from it. But there is an important difference between the Whole Earth
images and the liber naturae tradition as it existed for at least the final five hundred
years of its history. The premodern philosophers approached the world as a
symbolic text, a mystery waiting to be deciphered and interpreted. The Whole
Earth images, by contrast, are iconic and indexical signifiers: they possess rhe-
torical force because they assure us that what we see is what the earth is actually
like and because they can vouch for this verisimilitude with the actual physical
connection that a ray of light has made between our planet and the camera lens. In
this regard (and in this regard only), they throw us back upon biblical prophecy,
which also postulated an indexical link between the scroll with the seven seals
and the scroll of the heavens.
Reading the Weather

Within contemporary novel theory, the first of these two strategies for imposing a totalizing vision upon the world reigns triumphant. As several critics have already pointed out, for example, the debates about “world literature” that have swallowed up so much critical energy over the last fifteen years rest on largely unexamined assumptions about “globalization” and “world systems” that originate in a sociology of capitalism written just as capitalism itself entered into its postmodern phase with the dissolution of the Bretton Woods accord in 1971 (Beecroft, 87). And even our very best contemporary accounts of literary mimesis waste hardly a word on the shape of the planet itself.7

One important exception to this general tendency can be found in the third of Gayatri Chakravorty Spivak’s lectures on the *Death of a Discipline*, with its argument for a new critical interest in “planetarity” rather than in “worldliness” or even “globalization.” To illustrate how the concept of planetarity might be used to critique other ways of imagining literary worlds, Spivak uses the example of Toni Morrison’s postmodern novel *Beloved*, the final lines of which read: “By and by, all traces gone. And what is forgotten is not only the footprints but the water and what it is down there. The rest is weather. Not the breath of the disremembered and unaccounted for, but the wind in the eaves, or spring ice thawing too quickly. Just weather” (275). Commenting on this passage, Spivak writes that “the lesson of the impossibility of translation in the general sense, as Toni Morrison shows it, readily points at absolute contingency. [And yet] Morrison undoes the difference between Africa and African-American by the experience of a planetarity equally inaccessible to human time” (88). In other words, Morrison shows us how human trauma resists the smooth exchange logic (“translation in the general sense”) of both economic and cultural globalization. Suffering finds its universal solvent only in the inhuman and “planetary” time of the weather, which erases all historical traces equally, regardless of whether they were scattered in Africa or in rural Ohio.

Spivak’s juxtaposition of a postmodern economy of signs—in which Beloved’s footsteps in the water are symbols of a culturally specific trauma—with the corrosive logic of the weather, for which they are merely indexes of a transient human presence, illustrates perfectly the two logics of totality that I have described as characteristic for the late twentieth century. But the problems that her reading presents from our contemporary perspective are obvious. In the Anthropocene, the rain and the wind are never merely “just weather,” nor can the observation that the “spring ice [is] thawing too quickly” be easily dismissed as merely a symptom of the perennial rhythm of the seasons. Instead, “weather” is now the chaotic epiphenomenon of that larger and all-determining entity, “climate.” And climate, in

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7 See, for example, Eric Hayot, *On Literary Worlds*. For a brief attempt by Hayot to connect the argument of this book to the problem of the Anthropocene, see his blog post, “Towards a Plural Theory of Anthropocenes.” As the title of this piece already indicates, Hayot regards the Anthropocene as a concept that can be applied to “any world (that is, any relatively closed totality . . .) that is capable of producing self-extinction through the manipulation of its environment.” The physical parameters of this environment matter not at all to him.
the twenty-first century, is an at least partially anthropogenic construct, an
embodied manifestation of the totalizing worldview of modernity. We traditionally
think of modernity as an attitude toward the world, a set of beliefs by which we
assimilate objects to a certain symbolic economy. But in the Anthropocene, the
human species has become a geologic force whose mere presence already modifies
the grounds of its being. There are no more objects that could be incorporated into a
symbolic economy, because the world itself is already a product of it.8

Abstracting from this observation, I would like to postulate that the relationship
between weather and climate in the Anthropocene is exactly equivalent to the older
structuralist dichotomy between parole and langue, between individual speech acts
and the system of human language as such. Human beings experience only
weather, just like they experience only individual speech acts. The scientific chal-
lenge, however, consists in digging deeper, in order to expose the structural system
that makes these manifestations possible. This comparison should be understood
quite literally: since future paleoclimatologists will be able to derive important
conclusions about the nature of life in the early twenty-first century from studying
sediment deposits, tree rings, and the like, it is not a metaphor to describe the
Anthropocene as the age in which the natural world itself submits to the Derridean
maxim that “there is nothing outside the text” (Derrida 158). In the face of our
geologic agency, the “Blue Marble” ceases being an icon of our finitude. It has
instead become a textual medium, a historical document of the ways in which
human time overwrites planetary time. It expresses its textual (indeed, its narra-
tive) character in its shrinking ice caps and expanding cloud cover.

In the early twenty-first century, we thus once again turn to the liber naturae to
parse our destiny as a species—or rather, we finally come to realize that the book of
history and the book of nature were not as separate as we always thought. The
crucial difference, however, is that we now scan this book for the traces of an
entirely human rather than a divine presence. We have inscribed ourselves in its
pages through our CO$_2$ emissions, our nuclear tests, our strip mines, and our
general waste of the earth’s resources. And the portents of our destiny that we now
discern in nature—all those storms, the fracking-induced earthquakes, the anni-
hilated species and the oceans turned to acid—are, in the relentless logic of
autopoiesis, also a document of our agency.

To describe our CO$_2$ emissions as a form of textual “inscription” may at first sight
appear to be an overreach of metaphor. For after all, smokestacks do not spell out
any meaningful messages. And does carbon dioxide not simply alter the chemical
composition of our atmosphere rather than “write” upon it? The rich premodern
history of the liber naturae metaphor provides us with an answer to these objections.
Not all human utterances necessarily have a referential content, and what Jakobson
called the “expressive” and “poetic” dimensions of language use are amply ful-
filled by our atmospheric interventions. The abnormal weather events triggered by

8 The most influential attempt to rethink modernity in the light of our geologic agency remains
that of Dipesh Chakrabarty. Timothy Morton has recently given the name “the mesh” to a
condition similar to the one I am describing here, although he would presumably resist my
characterization of it as either “symbolic” or an “economy.” Morton, Ecological Thought 33–38.
our emissions are “expressive” by virtue of the fact that they testify to our presence as a species; climate change denial (which in most cases disputes only the reality of \textit{anthropogenic} climate change) is nothing else than the systematic denial of such an expressive dimension. Similarly, such weather events are “poetic” because their ultimate significance lies not in their individual appearance but rather in their regular recurrence. A single storm or draught, no matter how bad, is just an eccentricity. But when every storm season brings with it a new anomaly, then they collectively form a rhetorical pattern and thus testify to the projection of human time onto a planetary scale. Along the same lines, the apocalyptic conflation of message and medium that we find in the book of Revelation also prepares us to understand the peculiarly embodied form of writing that attends our geologic agency. The rising temperatures, sinking pH levels, and multiplying storm systems of the Anthropocene are not merely legible signs of our impending catastrophe, they \textit{are} that catastrophe itself.

\textbf{Epic Representation in the Anthropocene}

It should by now be clear that the Lukácsian model of novelistic totality, which is built upon the notion of an irreconcilable gap between human subjectivity and the natural world, no longer holds sway in the twenty-first century. But what should we put in its place? In a recent essay, Wai Chee Dimock suggests that we should return to epic poetry if we wish to restructure our narrative experience of the world. Dimock’s starting points are somewhat at odds with mine, for she locates the most important consequence of our geologic agency not in unprecedented forms of mediation but rather in a new conception of spatial and temporal scale: “[Ours] is a moment in the history of the planet, and the history of the institution of literature, when a plurality of scale might turn out be a matter of necessity rather than a matter of indifference” (614). And yet her conclusions have something to teach us about how to reengage the book of nature as well.

Dimock embraces epic poetry as a tool for scalar analysis because of what we might call its “cellular” nature—that is, the way in which ancient epics build vast narrative structure on the backs of small, formulaic, and constantly repeated verbal and thematic clusters. This neat little trick not only enabled bards to tuck away entire worlds within the limited storage space of their brains, it also allowed the epic to travel through time, because its individual components could easily be quoted and integrated into new narrative contexts. By tracing how, say, a couple of lines from the ancient epic of Gilgamesh are passed down through multiple millennia and across barriers of language, form, and medium to resurface in an episode of the television series \textit{Star Trek: The Next Generation}, we might thus learn to think in time scales that are somewhere intermediate between the confines of traditional humanism and the vastness of geologic thought.

Dimock’s approach has much to commend it and can clearly be productively applied in a number of different contexts.\footnote{For instance, Alain Badiou detects a similarly modular structure in Wagner’s music dramas, which represent a distinctively modern approach to the question of totality (20).} I disagree with her, however, about the
question of whether the ability to think in extraordinarily long time scales really is
the most pressing task that confronts us in the Anthropocene. Indeed, as Roy
Scranton has recently suggested, our species survival in the new epoch may well
depend on our ability not to think about the distant future and instead come to
terms with our own transience—a kind of inverse correlate of Friedrich Nietzsche’s
demand to forget the past in his *Untimely Meditations*. The question of scale
impinges upon the problem of literary totality not just on the level of the chron-
topoe, however, but also on the level of what we might call “narrative density”—
that is, the number of distinctive meaningful narrative units (“lexias”) woven into
any epic account of the world. It is clear here that the Anthropocene has greatly
complicated this particular issue by enormously increasing the minimum number
of meaningful units (or, in scientific parlance, data points) necessary for a totalizing
view of the world. In the nineteenth century, Darwinian evolution altered the
course of the realist novel by suggesting the existence of nonteleological “plots” for
which as yet no narrative logic existed (Beer). At the dawn of the twenty-first
century, the “big data” approach now prevalent in the natural sciences promises to
have a similarly disruptive effect. Raw data on a planetary scale makes ideal fodder
for statistical modeling but as yet not so much for narrative treatment, because
narrative depends not merely on causal explication but also on an appeal to rec-
ognizable experience.

If novel theory hopes to respond to this challenge, it will have to learn to read the
book of nature as it is revealed to us by the earth sciences in all their quantitative
complexity. As an example, consider one of the oldest and most extensive datasets
that informs our understanding of the Anthropocene, the measurements of
atmospheric carbon dioxide collected by Charles David Keeling at the Mauna Loa
Observatory on Hawaii. The so-called Keeling Curve (figure 1), which recently
crossed the ominous threshold of four hundred parts per million, is the product of
two separate factors. First, the natural seasonal cycles by which plants capture CO₂
during the spring and summer months and then release it again into the atmo-
sphere as their leaves die in fall and winter; and second, the steadily increasing
human consumption of fossil fuels.¹⁰

One way to read the Keeling Curve is as an illustration of Jonathan Crary’s
thesis, in his recent book 24/7, that late capitalism is increasingly successful at
overwriting the cyclical rhythms of biologic existence with the empty and linear
temporality of modern emergence. Such an approach would treat the rising carbon
dioxide levels in our atmosphere as merely the final and most consequential
expression of a specific stage in the history of modernity. A more comprehensive
assessment of the Keeling Curve—one also informed by supplementary historical
data collected from tree rings, which show rising CO₂ levels as far back as the early
nineteenth century—would point out that what we now call “modernity” has, in
fact, always signified a planetary condition in which human presence became
legible in the atmosphere. In other words, Marx’s famous dictum that “all that is
solid melts into air” (Marx and Engels 6), which was meant as an explanatory

¹⁰ The natural cycle is synchronized with the seasonal progression in the northern hemisphere,
because that is where the majority of the land mass and thus also of plant life is located.
account for what Lukács would later term the loss of totality under conditions of modernity, is more than just a metaphor. It needs to be taken quite literally: modernity has always been characterized by the “melting” (the German original actually speaks of Verdampfung, or “evaporation”) of solid carbon into a gaseous compound. And for at least the last two hundred years, our atmosphere has been a hybrid, its chemical composition determined in part by natural processes and in part by human self-inscription.

How might this realization be translated into the admittedly much more circumscribed terrain of novel theory? We find an answer in the most unlikely of places: Mikhail Bakhtin’s essay “The Bildungsroman and Its Significance in the History of Realism.” I call this essay the most unlikely of places because, like all of Bakhtin’s major writings, it attempts to draw a strong dividing line between epic and novel and associates the latter with a specific form of self-reflexive historical awareness. In Bakhtin’s words, the protagonist of the bildungsroman “emerges along with the world and reflects the historical emergence of the world itself” (23). It thus seems tailor-made to confirm Lukács’s theories about the novel as a genre of “transcendental homeless.” And yet, within this very same essay, Bakhtin quotes a passage from Goethe’s Italian Journey in which the young poet, while crossing the Alps in 1786, developed a daring theory according to which periodic variations in the gravitational field of our planet, and especially of its extrusive parts, can cause atmospheric disturbances and thereby influence the weather. The fact that this

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**Figure 1.** Keeling Curve, created by Robert A. Rohde

I owe this observation to a presentation by Tobias Mennely.
theory is entirely bogus as a scientific account does not concern Bakhtin. He sees it instead as evidence of how profoundly Goethe’s mind differed from the essentially ahistorical mindset of the Enlightenment rationalists: “Everywhere, whatever served as and appeared to be a stable and immutable background for all movements and changes became for Goethe a part of emergence, saturated through and through with time” (30).

Bakhtin’s insight that Goethe’s thoughts about human emergence were inspired by observations of pulsating, cyclical movements in the natural world has so far found no resonance in the critical literature. This is not really surprising, because Bakhtin himself represses it. A mere two pages after discussing Goethe’s gravitational theory, the Russian theorist already argues that “Goethe searches for and finds primarily the visible movement of historical time, which is inseparable from the natural setting (Localität) and the entire totality of objects created by man, which are essentially connected to this natural setting” (32). In a first move, Bakhtin here reduces the natural world to a mere “locality,” only to then further diminish it through the connection to the “entire totality of objects created by man.” No wonder, then, that the “bildungsroman” essay has played no role so far in the environmental humanities.

If, however, we treat the Keeling Curve as an attempt to make visible the traces that our species’ existence has inscribed upon the earth’s atmosphere for the past two hundred years, and if, furthermore, we regard it as the main challenge of contemporary novel theory to incorporate these traces into a new model of epic totality, then a new approach presents itself. Consider the novel that inspired Bakhtin’s original theory, Wilhelm Meister’s Apprenticeship. Among many other things, Goethe’s novel is a brilliant exercise in narrative economy, in which a sprawling multiplicity of life stories is pulled together and ultimately subordinated to the singular story of Wilhelm’s temporal emergence. This process finds a powerful spatial metaphor in the Tower Society’s headquarters, which Wilhelm spots from a hilltop at the very beginning of book 7: “Originally it had been an irregular building with turrets and gables; but even more irregular were the later additions, some close by and others at a distance, connected with the main building by galleries and covered walks. All external symmetry and architectural distinction seemed to have been sacrificed to considerations of domestic comfort” (258).

This rabbit warren of little additions radiating outward from a castle in whose tallest tower, we later learn, a biographical scroll detailing William’s adventures is kept, serves as an objective correlative for the structure of the novel as a whole. Much as the various inset stories and subplots of Goethe’s text ultimately exist only to illustrate and facilitate the development of Wilhelm’s personality, so here the architectural additions are void of any “external symmetry” or intrinsic “distinction”; they exist only to advance the cause of “domestic comfort.” As we later learn from the Abbé’s plan for a global insurance corporation, the Tower Society abhors the messiness of the external world with its unforeseeable natural and political risks and hopes to counter it with the pristine clarity of its own internal organizational structure. This is precisely also the vision that Lukács has of the modern condition. But what might an alternative look like?
Exactly sixty years after Goethe’s inaugural bildungsroman, the Austrian novelist Adalbert Stifter wrote a work that is invariably compared to Wilhelm Meister’s Apprenticeship. But whereas the very title of Goethe’s novel points toward the hero’s eventual incorporation into the ordered sphere of society, the title of Stifter’s Indian Summer (Der Nachsommer) gestures outward toward nature, replacing vocational metaphors with those of meteorology in the reference to an uncannily long summer. Stifter’s novel is usually read as an example of a German bildungsroman run amok: an aesthetic and spiritual exercise from which all references to the political world have been rigorously excluded. But a reading informed by the foregoing reflections suggests a somewhat different picture. The narrator-protagonist of Indian Summer, a young man named Heinrich, spends most of the novel on an extended visit to a country house whose walls are entirely covered in roses; there he conducts long conversations with his host Risach during extended walks through the surrounding fields. The metaphors of personal, narratological, and architectural containment so central to Goethe’s novel are thus inverted. Personal formation takes place in the open air, while the interior of the country house largely functions as a narratological dead space: a place where the narrator observes cryptic events whose larger significance needs to be unpacked on further walks outdoors. Tellingly, the main hallway of the Rosenhof is adorned by a beautiful marble floor on which nobody is ever allowed to set foot for fear of scratching the precious stone (marble, with its richly veined interior structure, functions throughout Indian Summer as a symbol for inner cultivation and beauty).

Perhaps the most pertinent feature of Indian Summer for the present discussion, however, is its descriptive prolixity. The book runs on for well more than eight hundred pages, with much of this space devoted to detailed descriptions of the estate. Samuel Frederick, in his definitive study of these digressions, argues that “Stifter tends to narrate spatial coordinates in place of temporal sequences” and therefore moves toward a “post-narrative” form (143). To this I wish to add only that it is not so much spatial coordinates as, rather, spatial density that is being created in these passages. Risach and the narrator never just move through “a field.” Instead, they always move through specific fields, whose dimensions, contents, and distinguishing features are all enumerated in the text. The purpose of this technique is not to recreate a certain sociocultural space, as it would be with Roland Barthes’s famous “reality effect,” nor to invoke a symbolically overdetermined concept of “nature,” as in the technique that Timothy Morton calls “ecomimesis” (Ecological Thought, 31–32), but rather to do justice to the irreducible multiplicity and complexity of a specific environment. And yet this environment does not remain merely external to the narrator but becomes an active and constitutive part of his developing subjectivity. In Stifter, the moral law within is intimately related if not to the starry skies above then at least to the shape of the fields surrounding the house.

Of all the great novelists, Adalbert Stifter thus undoubtedly came closest to developing a method for how we might read the book of nature in what we now call the Anthropocene. Although conceived on a grand scale, Indian Summer dispenses entirely with the totalizing vistas we associate with contemporary works by Eliot, Flaubert, or Tolstoy and instead embraces what we can call, following Dimock,
properly “epic” microcellular structure. Stifter’s characters leave the house and they come back again; in the grand scheme of things, nothing much happens, but as we watch Heinrich’s self-awareness grow over the course of eight hundred pages, we ourselves come to understand how much his linear emergence, his “development,” depends on the cyclical nature not just of these walks but also of the natural environment in which they take place. The sometimes excruciatingly detailed descriptions of the rose-covered manor and its surrounding fields eventually make us realize that “nature,” in this novel, is not something that stands apart from human emergence but is instead an autopoietic medium. It is, in other words, an inscriptive device that everywhere testifies to the traces left by Risach, Heinrich’s host, and simultaneously inscribes itself upon the budding consciousness of the young protagonist.

Risach, it turns out, as a young man had to renounce a passionate love affair; his gardens are the sublimated outcome of his repressed emotions. Heinrich’s own education ends when he learns to decipher the message inscribed in the countryside around him and marries the daughter of his former love interest. The gardens, in short, cannot be subordinated to the traditional confines of post-Kantian natural beauty; they are not “purposive without having a purpose” (Kant 111). Instead, they communicate a clear message, though this message is expressive and poetic rather than referential; it speaks to the depths of Risach’s soul rather than to any particular imperative to marry. By reading the novelistic depiction of Heinrich’s ascent to subjectivity, we learn at the same time to read in the book of nature and thereby embrace what we may now, properly speaking, call a “postmodern” epic totality that encompasses the mind and the natural world in a seamless union.

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