

Emplotment Beyond the Human Scale: On Deep Time and Narrative Nonlinearity

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Abstract

In the second volume of *Time and Narrative* (1985, 101–12), Paul Ricoeur distinguishes between two layers of temporality in Virginia Woolf's *Mrs. Dalloway* (1925): he calls them “monumental” time and “mortal” time. The former is connected with authority and British imperial politics; the latter is the subjective, highly malleable time of human experience. But there is another time, also active in Woolf's novel and in her oeuvre more generally, that Ricoeur seems to overlook. It is the “deep history” (Shryock and Smail 2011) of geological and planetary phenomena that vastly surpasses the time scale of individual humans or human societies, or even of the human species. This is not to say that narrative is at ease with this deep temporality; as a practice, it seems fundamentally skewed towards the ethical and hermeneutic concerns that Ricoeur foregrounds in his work. But deep time does surface in narrative; it is in the formal challenges raised by such surfacings that I am interested in this article.

Key-words: eco-narratology, non-linear narrative, plot, spatial form, ecological crisis, New Formalism

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Emplotment Beyond the Human Scale: On Deep Time and Narrative Nonlinearity

In the second volume of *Time and Narrative* (1985, 101–12), Paul Ricoeur famously distinguishes between two layers of temporality in Virginia Woolf’s *Mrs. Dalloway* (1925): he calls them “monumental” time and “mortal” time. The former is bound up with British imperial politics and marked by the tolls of the Big Ben, which resound throughout Woolf’s novel. The latter, by contrast, is the subjective, highly malleable time of human experience. The temporality of *Mrs. Dalloway*, Ricoeur argues, is the sum total of the characters’ subjective experiences when they confront, “in a complex and unstable relationship, monumental time, itself resulting from all the complicities between clock time and the figures of authority” (1985, 112).

However, Ricoeur’s account tends to sideline another temporality, which is active in Woolf’s novel and in her oeuvre more generally. The hermeneutic framework of Ricoeur’s thinking is, after all, firmly grounded in human experience. There is another temporality with which narrative can become entangled—a “deep time,” as it is frequently referred to (Gould 1987; Shryock and Smail 2011), of geological, planetary, and astronomical phenomena that vastly surpass the time scale of individual humans or human societies. These temporalities have become central to recent debates on the climate crisis. Industrial activities within a neoliberal global economy are leaving a deep mark on processes long considered categorically separate from the human domain: by reshaping the climate and dramatically impoverishing ecosystems, human history is interfering with the large-scale temporalities inherent in geological and biological processes (see Chakrabarty 2009; 2014). Cultural engagements with the climate crisis thus call for a rethinking of the relationship between time and narrative in light of more-than-human temporalities.¹

To be fair, Ricoeur does nuance the concept of monumental time in several passages of the third volume of *Time and Narrative* (1988, 99). The distinction he advances in that work is between “cosmic time” and a “proper historical time” of human civilizations: the former reflects the infinite temporality of the cosmos; the latter mediates between the vast temporality of cosmic time and subjective or phenomenological (“mortal”) time. However, even within that more sophisticated tripartite model, Ricoeur does not consider the possibility that the time of human history might influence the nonhuman temporality of the Earth, by altering ecosystems or burning natural resources (such as coal or oil) that formed over millions of years. Ricoeur’s cosmos only serves as a static background to both historical processes and subjective experiences; it remains, in itself, unchanged by such processes and experiences.

Thinking about more-than-human temporalities foregrounds major differences in *scale* between geological or biological phenomena and the human events of both mortal and historical time. Moving from the temporal scale of more-than-human realities to the temporality of human life is a discontinuous process, because the former is not driven by the

¹ For more on cultural responses to deep time, see also Mark McGurl’s (2011; 2012) work. Narrative theorists have also developed an interest in environmental issues and how they can be negotiated through narrative form; see James (2015) and James and Morel (2020).

subjective beliefs and desires that mark both phenomenological experience and the collective history of human societies.² Consider evolution by natural selection, for instance: the variations that lead to the emergence of new species take place at such a slow pace, over the course of countless generations, that it is difficult to imagine them (as opposed to understand them conceptually). Natural selection is a chance-driven process that resists experientially-grounded notions of teleology and agency: because of this resistance, the temporality of evolution cannot be straightforwardly narrated (Abbott 2003). Put otherwise, differences in scale result in vast differences in how temporality *works* in human and more-than-human terms: Ricoeur's account of cosmic time appears to downplay those differences.

It is important to realize that narrative is not at ease with the deep temporalities of biological, geological, and astronomical phenomena: as a practice, it seems fundamentally skewed towards the ethical and hermeneutic concerns that Ricoeur foregrounds in his work. This preference for human-scale time is largely the result of what Monika Fludernik (1996, 13) discusses as the “anthropomorphic bias” of storytelling.³ But deep time does surface in narrative insofar as it intersects with phenomenological and historical time. Ricoeur himself comments on the possible “interweaving of the phenomenological perspective and the cosmic perspective on time” (1988, 123). He introduces the concept of “trace” as a spatial connector, an element that bridges the gap between these temporalities: a trace is physical marker of more-than-human temporality that can be directly experienced within “mortal” time.

For an example of how traces may enable an encounter of human and more-than-human temporalities, consider a memorable scene in a novel by Thomas Hardy, *A Pair of Blue Eyes* (first published in 1873). The protagonist is a geologist named Henry Knight; during an outing in the south of England, Knight loses balance and slips off a cliff. Knight doesn't fall to his death, of course. Instead, he clings to the edge of the cliff for a dramatically long stretch of time, waiting for rescue. While dangling, Knight notices a trace of deep time, in the form of a fossil embedded in the rock face:

By one of those familiar conjunctions in which the inanimate world baits the mind of man when he pauses in moments of suspense, opposite Knight's eyes was an imbedded fossil, standing forth in low relief from the rock. It was a creature with eyes. The eyes, dead and turned to stone, were even now regarding him. It was one of the early crustaceans called Trilobites. Separated by millions of years in their lives, Knight and this underling seemed to have met in their death. (Hardy 1998, 213)

Clearly, Hardy was steeped in Victorian science; the account of geological history developed by James Hutton and Charles Lyell looms large in this passage, together with Darwinian evolution.⁴ At this dramatic moment, the deep time of natural evolution enters Knight's consciousness in poignantly personal terms: by confronting the physical trace left by a prehistoric being, he is, quite literally, facing the evolutionary history he shares with this

² Derek Woods (2014) offers a helpful discussion of such scalar discontinuities and their significance to debates on the climate crisis.

³ See also Caracciolo (2018) for a discussion of how this anthropomorphic bias can be sidestepped by narratives engaging with more-than-human realities.

⁴ For more on the discovery of deep time in the 18th and 19th century, see Gould (1987). In an interesting analysis of this passage from Hardy's novel, Suzanne Keen (2011, 381) argues that the bridge between Knight's experience and deep time is provided by a form of empathetic identification with the fossil.

humble creature. This realization of a common heritage is the starting point for Knight's simultaneous vision of the evolutionary past—a vision that is as unlikely under Knight's circumstances as it is effective in building suspense. I will only quote the beginning of this extended vision:

Time closed up like a fan before him. He saw himself at one extremity of the years, face to face with the beginning and all the intermediate centuries simultaneously. Fierce men, clothed in the hides of beasts, and carrying, for defence and attack, huge clubs and pointed spears, rose from the rock, like the phantoms before the doomed Macbeth. They lived in hollows, woods, and mud huts—perhaps in caves of the neighbouring rocks. Behind them stood an earlier band. No man was there. Huge elephantine forms, the mastodon, the hippopotamus, the tapir, antelopes of monstrous size, the megatherium, and the myledon—all, for the moment, in juxtaposition. (Hardy 1998, 214)

This is a version of what psychologists working on near-death experiences call a “life review”—a frequently reported sensation of remembering salient episodes from one's life in quick succession, when close to death: “my whole life flashed before me” is the clichéd expression (Blackmore 1993, 183–218). Yet the life reviewed by Knight while clinging to the cliff is not personal, but collective: it is the evolution of life on Earth, from our human ancestors to the Trilobite that has left a material trace in front of him.

Just as this fossil triggers the character's imagination of deep time, the reader's imagination is aided by another trace—a stylistic rather than physical one. It is the simile “Time closed up like a fan before him.” The image of the folding fan is deployed to express the sudden closing, in Knight's mind, of the temporal gulf that separates him from the fossil. The simile works by mapping spatial and kinetic traces onto temporal experience: readers will understand the simile by drawing on what psycholinguist Rolf Zwaan (2008) calls “experiential traces”—in this case, of a fan (or similar object) being folded up. This trace helps readers understand the dramatic compression of deep time that is enacted by the character's imagination. If, as I argued above, the scale of evolutionary time is profoundly discontinuous with human-scale notions of agency and subjectivity, the simile makes it possible to bridge that gap in imaginative terms.

The use of spatial metaphors for time has been the subject of substantial discussion in cognitive linguistics and psychology. In particular, Lera Boroditsky's experiments show that “spatial schemas invoked by [metaphorical language] provide the relational information to organize events in time” (2000, 4). Boroditsky distinguishes between two spatial systems for understanding time metaphorically: an ego-moving schema, in which the speaker is moving toward an event (“We are approaching the Christmas holidays”), and a time-moving schema, in which the speaker stands still and it is the events themselves that move (“The Christmas holidays are approaching”). In both schemata, time is rendered as *linear movement*, or *movement along a path*. These conceptualizations of time are extremely productive in language.

Hardy's simile of time “closing up like a fan” suggests a far less linear understanding of temporality, one in which historical depth can collapse in an instant, under the pressure of psychological forces. The simile works along two dimensions: on the one hand, it renders Knight's lived experience at this moment of grave danger—a moment in which a purely linear

conceptualization of time breaks down; on the other hand, the experiential trace of the “fan closing up” links what Ricoeur would call “mortal time” to the *longue durée* of natural history with which Knight is dramatically faced. Thus, the lesson of Hardy’s passage is that the disparity between human-scale and deep time is such that linear models of temporality are necessarily, and fundamentally, challenged. By “linear models of temporality,” I mean conceptualizations of time that make use of the “path” image schema, as cognitive linguists would argue in the wake of Lakoff and Johnson’s work in the late 1980s (Lakoff 1987; Johnson 1987).⁵ Technically, an image schema is an experientially derived trace that language users tend to project onto abstract phenomena. “Path” is a highly productive image-schematic structure that helps us conceptualize things like careers (“her career trajectory”) or national history (“the road to independence”). In short, the passage of time can be understood in terms of a subject moving steadily along path—whether the “subject” is an individual or a more abstract entity (such as a nation, in my second example).

In the West, this linear model of time is frequently referred to as “time’s arrow,” and has been opposed to both cyclical models in pre-modern or non-Western cultures (Gould 1987) and to the abrupt accelerations and decelerations of *experienced* time (Flaherty 1999). These differing spatial conceptualizations of time matter greatly to the understanding of narrative, seeing as narrative involves, centrally, the articulation or orchestration of time.⁶ But the gesture of emplotment, to use Ricoeur’s terminology, can follow more or less closely linear or path-like models. As Hardy’s simile shows on a stylistic level, the more narrative departs from mortal and monumental time by incorporating the deep temporalities of the cosmos, geological phenomena, or natural history, the more it has to resort to different experiential traces than “movement along a path.” To state the same idea more simply, deep time puts pressure on a linear model of time—and of emplotment itself. This doesn’t mean that, faced with deep time, plot resists spatial models and space-based metaphors completely. Rather, the path image schema gives way to alternative spatial traces involving circularity, discontinuity, and rhizomatic multiplicity. In the last part of this article, I will offer a number of examples of this breakdown of linearity. First, though, I will address a key question: when does plot become nonlinear?

Nonlinear plotting

In order to define linearity, we need to complement Ricoeur’s discussion of emplotment with more recent work in narrative theory. As Karin Kukkonen (2014) proposes, we can take two complementary perspectives on plot: one focuses on the overall structure of narrative as conceptualized retrospectively; the other emphasizes dynamic structuration from the point of view of audience members who make their way through the text and experience a certain pattern of emotional responses.⁷ Depending on which of these perspectives we prioritize, “nonlinearity” will mean partly different things.

From a structural perspective, linearity can be seen as a result of three factors: temporal sequentiality, causal coherence, and diegetic focus. Temporal sequentiality refers to the degree

⁵ For more on image schemata, see Hampe (2005).

⁶ See also Richard Walsh’s claim that narrative is “the semiotic articulation of linear temporal sequence” (2017, 473).

⁷ According to Sternberg (1978), this emotional pattern consists of suspense, curiosity, and surprise. See Baroni (2007) for a more recent approach to narrative’s emotional dynamics.

to which the narrative follows a chronological order devoid of discontinuities between story and discourse (through flashbacks and flashforwards, for instance). The more sequential a narrative is, the more linear it will appear. Note, however, that linear and nonlinear are scalar concepts, not binary ones. As Brian Richardson observes, even narratives traditionally associated with linearity, “from the *Odyssey* to the works of Balzac, are rarely entirely linear, but are filled with flashbacks, flashforwards, successive accounts of simultaneous events, and extensive internal retrospective narrations” (2000, 687–88).

Causation also plays an important role in establishing linearity. Usually, narrative privileges the *psychological* causality of characters’ plans and goals.⁸ The more the characters’ plans drive a narrative, the more linear the narrative will seem. For instance, the plot of “Little Red Riding Hood” (in Charles Perrault’s version) unfolds as a function of two conflicting plans: Little Red Riding Hood’s plan to bring food to her grandmother (on her mother’s instructions); and the wolf’s desire to eat Little Red Riding Hood, which involves a carefully planned ruse. Little Red Riding Hood’s mission displays a clear path-like structure, in that it has a certain source (her mother) and a well-defined goal (delivering the food). The wolf’s scheme serves as an obstacle, temporarily interrupting the protagonist’s movement along the path. Moreover, the story’s outcome is directly tied to the wolf’s goal and the girl’s gullibility, both of which are manifestations of their mental life. In general terms, the closer the match between the characters’ mental world and the events and actions that advance a plot, the more a narrative will be perceived as linear, because it will be easier for readers to establish causal coherence by mapping the story’s progression onto the path of the protagonist’s intentions.

Lastly, we have what I call diegetic focus. Some narratives juxtapose sections that operate independently: they take place at different times or in different spatial locales or foreground different characters, even though these characters may occasionally converge. For example, in Virginia Woolf’s *Mrs. Dalloway* we have Clarissa-focused sections and Septimus-focused sections. While these distinct story lines may display a high degree of internal temporal and causal coherence, their inclusion in the same plot decreases linearity: a “multilinear” narrative is thus less linear than one tracing the actions of a single protagonist (like Perrault’s “Little Red Riding Hood”).⁹

From the perspective of plot as dynamic structuration, linearity becomes a question of how easy it is for the reader to *predict* the progression of a story by mapping it onto a path-like model. Thus, building on complex systems theory, John Pier argues that nonlinearity “introduces elements of fluctuation and unpredictability into a system” (2017, 552). For Pier, these fluctuations and unpredictable elements arise in the interstice between story and discourse. We can extend Pier’s claim in light of what I said about nonlinearity so far: “elements of fluctuation and unpredictability” emerge when temporal sequentiality, causal coherence, and diegetic focus are radically challenged. As a result of this loosening of sequentiality, causation, and focus, it will be harder for readers to predict the outcome of the

⁸ On how the dynamic of mental states drives narrative progression, see Marie-Laure Ryan’s (1991) account of plot.

⁹ See Schmitt (2014) for an insightful discussion of such multilinear narratives in contemporary fiction.

text and fit it into a path-like schema mirroring the characters' goals and intentions. The linear understanding of emplotment thus breaks down.¹⁰

Again, the model of nonlinearity I propose is a scalar one: a text can be more or less linear, depending on textual strategies and also on readers' willingness to impose a path-like model on the progression. Cognitively, we are biased towards linear explanations, and I am not arguing that it is possible to do away with linearity completely. However, such linear thinking can be disrupted by narrative, sometimes fundamentally. This, I claim, is what happens when narrative moves beyond the temporalities of individual experience and human history, embracing deep time.

How can time and plot be conceptualized, if not in linear, path-like terms? Several possibilities present themselves. I will discuss some of them here, without attempting to be comprehensive; the goal, rather, is to exemplify the ways in which deep time can destabilize narrative linearity. Recall Ricoeur's argument that spatial traces can mediate between more-than-human ("cosmic") temporality and the phenomenology of "mortal" time. The path is one of such experiential traces, but it is not the only possibility. I will focus on four spatial "traces" or forms that resist linearity: namely, discontinuous progression, the loop, the network, and the rhizome (see Figure 1 Four spatial traces for nonlinear plots: discontinuous progression, the loop, the network, and the rhizome (author's creation). for a visualization).¹¹ Like movement along a path, these spatial traces are derived from language users' everyday experience of engaging with the world physically. Unlike the path, they disrupt the integration of temporal sequentiality, causal coherence, and diegetic focus that is at the heart of linear narrative.

My examples are drawn from contemporary fiction. The logic of this focus is not that these forms are *exclusive* to contemporary narrative; most likely, they can be identified in mythology, non-Western storytelling traditions, and a wide range of narratives before the 20th century. Yet these nonlinear forms have become particularly salient in the contemporary cultural landscape. The ecological crisis brings into view humanity's role in shaping geological history through the burning of fossil fuels, the release of large amounts of plastic into the environment, and other activities that leave a semi-permanent trace on our planet's crust.¹² We need narrative forms that capture what Dipesh Chakrabarty (2014) describes as the "collision" of the temporality of human history (particularly the history of Western capitalism) and geological time. Further, this collision largely escapes the temporality of phenomenological experience: we may be keenly aware of the local effects of climate change, sometimes dramatically, but climate change per se remains a scientific abstraction (which explains why it is so easy to deny or at least ignore its existence). This means that the relationship between the climate crisis and everyday experience is a deeply nonlinear one. The ecological crisis thus destabilizes the linearity of storytelling, with its neat link between the progression of story and the dynamics

¹⁰ Current work on narrative complexity is also relevant here: formally complex narratives tend to display the weakening of sequentiality, causality, and focus that I discuss in this section. See Grishakova and Poulaki (2019). For more on the role of predictions in narrative engagements, see Kukkonen (2020).

¹¹ These imaginative traces are also spatial forms in Joseph Frank's (1945) sense. Cognitive-linguistic arguments suggest that such spatial traces or forms underlie the construction of abstract concepts (as discussed above).

¹² The label "Anthropocene," introduced by a scientist, Paul Crutzen (Crutzen and Stoermer 2000), has been increasingly used to refer to humanity's intervention in geological history. For a critical discussion of this label, see Crist (2013).

of the characters' goals.¹³ Bringing together the distinct temporalities implicated in the climate crisis calls for spatial traces that complicate or challenge linearity. The narratives I examine in the following sections register the effects of this challenge.

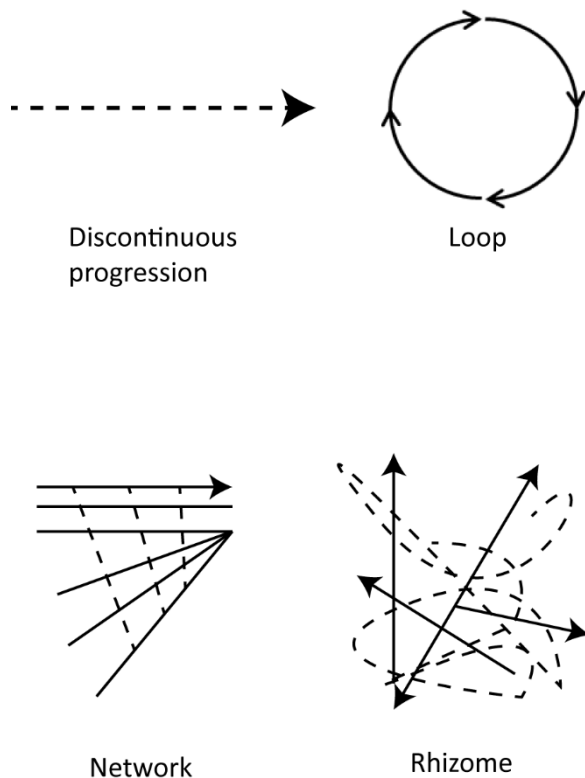


Figure 1 Four spatial traces for nonlinear plots: discontinuous progression, the loop, the network, and the rhizome (author's creation).

Discontinuous progression

One way of opposing narrative linearity is, quite simply, that of introducing a principle of radical discontinuity into the path-like model: seemingly arbitrary gaps are created within a linear understanding of temporality. We know, from Meir Sternberg (1978) and others, that gaps in narrative are instrumental in bringing about the emotional effects of suspense, curiosity, and surprise. Gaps of this kind may constitute deviations from the temporal sequentiality of plot, but they are typically accompanied by a high degree of causal and diegetic coherence.

The discontinuities I have in mind here work very differently from Sternberg's model. Consider a postapocalyptic novel by Dale Pendell, *The Great Bay* (2010). The scope of Pendell's "chronicles" (as the book bills itself in the subtitle) embraces deep time directly; however, the deep temporality in question is not directed towards the geological past, but towards the future: Pendell imagines the history of human society after an epidemic has wiped out civilization as we know it. The book is set in California's Central Valley and chronicles human events alongside the evolution of the coastline as sea levels rise and the valley becomes the titular "great bay." The maps that preface the book illustrate this evolution. The chronicles span over ten millennia, starting from the immediate aftermath of the catastrophe. Thus, the first chapter covers the first decade after the collapse, the second covers another decade, but from the third

¹³ Cf. the influential argument about the limitations of the realist novel advanced by Amitav Ghosh in *The Great Derangement* (2016, 7–11).

chapter onwards the time line starts increasing exponentially: the third chapter spans thirty years, the fourth fifty, the fifth a century, until the penultimate chapter covers “the sixth through the tenth millennia” after the collapse.

Obviously, the narrative has no consistent diegetic focus other than the spatial location; because each chapter has a disparate set of characters, there is no overarching protagonist whose beliefs and desires can orient the progression of the narrative. Nor does the narrator attempt to justify the choice of these particular time frames for his chronicles. The gaps between the novel’s multiple storylines are so significant that—far from creating suspense, curiosity, or surprise—they fundamentally deny any satisfying emotional dynamic. The chapters are haphazard, and deeply discontinuous, “samples” in deep history: while a degree of temporal sequentiality is preserved, because the events follow do one another in a relatively linear fashion, the plot becomes uncoupled from both mental causation and diegetic focus. In sum, the plot evokes a linear schema, but the sequentiality is both systematically interrupted and deprived of a clear teleology.¹⁴

The loop

The main alternative to time’s arrow, as I suggested earlier, is the image of the cycle. Besides being central to mythological thinking, as Mircea Eliade (2005) has shown in an influential study, the cycle has become a contemporary symbol of, for example, recycling and sustainability. Cycles, circles, and loops also abound in contemporary novels engaging with large-scale temporalities.

An excellent example is another postapocalyptic novel—*The Stone Gods* by Jeanette Winterson. The novel involves a metaleptic “strange loop,” in that a version of the novel itself is referenced in the following scene: “I took the manuscript out of my bag, dropped the pages, picked them up again, shuffled as a pack of cards. ‘What’s that?’ Spike asked. ‘It’s what I told you about, today, yesterday, when, I don’t know when, it seems a lifetime ago. *The Stone Gods*.’ ‘I wonder who left it there?’ ‘It was me.’ ‘Why, Billie?’ A message in a bottle. A signal. But then I saw it was still there . . . round and round on the Circle Line. A repeating world” (2009, 203).¹⁵ It cannot be a coincidence that the manuscript is found on the “Circle Line,” of course.

But circularity in the novel goes well beyond metalepsis. One of the characters tells a story about a young man who gets into a fight outside a bar, shoots a man, and commits suicide in his attic; an angel appears, giving him a chance to “rewind” his life and make better choices; but the young man ends up doing the same, in a never-ending cycle: “Bullets, revolver, attic, angel, begin again. Bar, bullets, revolver, attic, angel, begin again . . . angel, bar, ball, bullets . . .” (2009, 55; ellipses in the original). The novel explicitly uses this story as an allegory for the fate of civilizations, which are bound to crumble under their weight of their own greed—and have been collapsing in this way throughout cosmic history. Thus, the main plot line involves the colonization of a new planet—Planet Blue—which offers humanity the possibility of a new beginning after the Earth has been irredeemably wrecked by environmental disaster. But, as it turns out, the protagonists are not the first explorers to escape from a dying ecosystem:

¹⁴ See Weik von Mossner’s (2014) review of Pendell’s book for more on how the absence of a protagonist disrupts readerly engagement with the narrative.

¹⁵ See McHale (1987, 119–21) on metalepsis—a device that blurs or challenges narrative boundaries—as a strange loop.

“My theory is that life on Orbus began as escaping life from the white planet—and the white planet began as escaping life from . . . who knows where?” (2009, 56). The plot of *The Stone Gods*, of course, is not perfectly circular but retains a linear element. However, this linearity is complicated by loop-like schemata emerging at various levels in the narrative.

The network

David Bordwell offers an extensive discussion of “network narratives” in *Poetics of Cinema* (2008). For Bordwell, the central feature of a network narrative is that it asks viewers to “mentally construct not an overarching causal project but an expanding social network” (2008, 193). In my terminology, the link between temporal sequentiality and causal coherence becomes extremely loose, because the plot revolves around characters whose plans and goals are—to quote again Bordwell—“largely decoupled from one another, or only contingently linked” (2008, 192). These characters may, of course, cross paths, but their life trajectories remain distinct.¹⁶

In *The Overstory*, Richard Powers uses a network narrative to channel a sense of deep, evolutionary time. The novel features nine characters whose lives become, unexpectedly and often dramatically, intertwined with plants. One character, for instance, jumps from a plane that is about to crash; his fall is broken by a banyan tree, and he miraculously survives. Another character picks up a family tradition of taking an annual picture of the single chestnut tree on his Iowa farm. All these “plant epiphanies,” as one could call them, point to plants’ central role in sustaining the lifeworld of humans and other animal species on Earth. This realization, which the characters share, is grounded in an insight into the shared evolutionary history of humans and plants; as one of the nine protagonists, a biologist, puts it: “You and the tree in your backyard come from a common ancestor. A billion and a half years ago, the two of you parted ways. But even now, after an immense journey in separate directions, that tree and you still share a quarter of your genes” (2018, 132).

The intertwined evolutionary history of humans and plants is mirrored, in narrative form, by the nine characters’ social network. After a first part in which their plant epiphanies are explored separately, the characters’ lives start converging: five of them meet and become involved first in the environmentalist movement on the West coast of the United States, and later in ecoterrorist activities. The other four characters remain further away from the center of the network, but they are brought in through occasional diegetic overlaps and thematic resonances. The intersubjective network traced by the characters’ encounters is highly nonlinear and largely avoids a sense of predestination. It recalls the connectedness of plants themselves, which the novel describes in this way: “Mats of mycorrhizal cabling link trees into gigantic, smart communities spread across hundreds of acres. Together, they form vast trading networks of goods, services, and information. . . .” (2018, 218). Again, the form of the network brings together narrative discourse, the story, and the thematic focus on plants. Despite the openness of this structure, the plot does lead to a sense of satisfying closure at the end of the novel, where the characters’ lives converge—thematically or diegetically—in a dramatic ending.

¹⁶ See also Caracciolo (2020) on how such network plots may use a material object, not a human or anthropomorphic protagonist, as the lynchpin of narrative progression.

The rhizome

This sense of closure distinguishes the network from what I call the “rhizome,” an idea that I draw of course from Deleuze and Guattari’s *A Thousand Plateaus* (1987). Deleuze and Guattari use the rhizome as a botanical metaphor for a model of horizontal, decentralized connection, which they oppose to the vertical, hierarchical organization of roots and trees. By contrast, I don’t mean the opposition between the network and the rhizome as a hard-and-fast one. Network plots like the one implemented by Powers in *The Overstory* always aspire to a rhizomatic structure; whether they succeed in realizing this structure depends on the overall causal coherence and organization of the network: the fact that Powers constructs a character system that revolves around five “core” protagonists and their shared ecoterrorist activities, along with the presence of a relatively clear-cut ending, suggest to me that this novel falls into the network category.

For an example of plot that is even more decentralized and therefore better approximates a rhizomatic configuration, I have to switch medium and point to *Here*, a comic strip by Richard McGuire. Originally published in 1989 as a six-page-long black-and-white strip, *Here* was adapted by McGuire himself into a color album in 2014. In this context I will discuss only the original strip. *Here* displays the world from a single spatial perspective: a room in a house, with the corner of the room falling precisely in the middle of each panel (as we can see from the first two panels; see Figure 2). However, while the spatial perspective remains stable, the panels jump back and forth in time, as the dates in the corner boxes suggest. The upshot of this fluctuating temporality is that some of the panels display this spatial location before the house itself existed (see the bottom of Figure 3, with a Native American lying on the grass), or after it is destroyed by a fire (as suggested by the image of the firefighter in Figure 3).

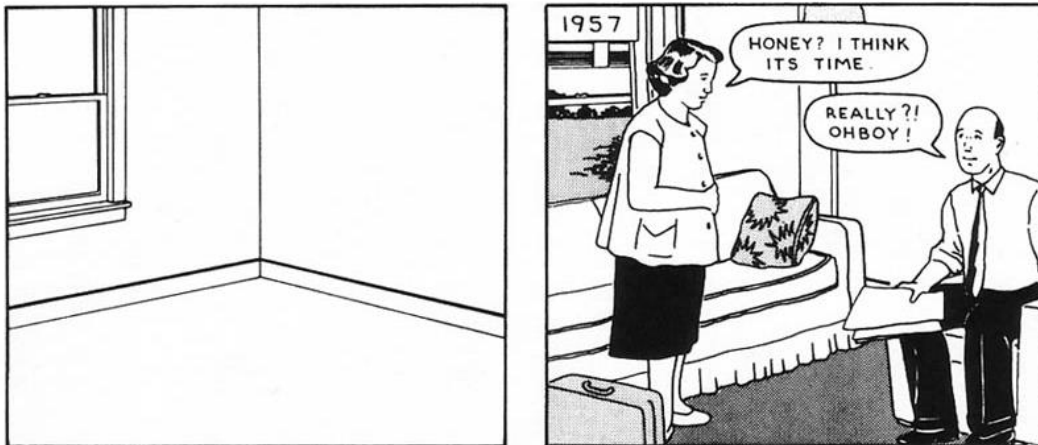


Figure 2 The first panels of McGuire’s *Here* (2006, 88). From McGuire (2006, 93).

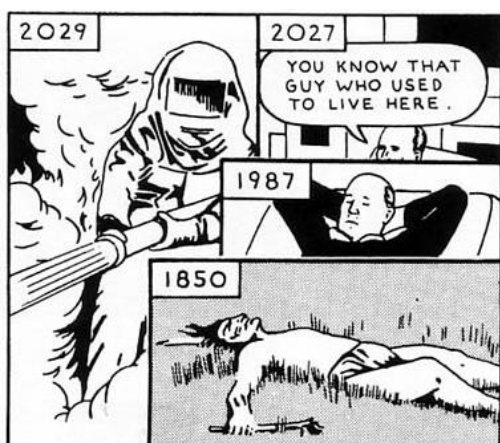


Figure 3 A panel showing the space of the house before the house itself was built (bottom insert, 1850), or after it is devastated by a fire (left-hand side of the panel, 2029). From McGuire (2006, 93).

The use of insets further complicates the timeline, disrupting the sequentiality of the narrative not just horizontally—in the transitions between the panels—but vertically, within each panel. It is possible to establish some degree of linearity, cause-effect coherence, or diegetic focus, but only at the local level, between individual panels or insets. There is no overall progression, at least no progression that all readers will agree upon; the final panel (McGuire 2006, 93), with the juxtaposition of a lava field millions of years ago and a highly elliptical conversation in 1945, seems to resist any sense of closure (or even a circular reference to the beginning). While the lava field evokes the geological transformations of the Earth, other visual elements—for instance, a dinosaur and a mouse (McGuire 2006, 91)—point to evolutionary history. In short, the openness and decentralized nature of this plot comes close to a rhizomatic structure; this is the result, if what I have said so far is correct, of the narrative's wrestling with the deep time of geological and natural phenomena through the focus on a single spatial location. McGuire's rhizome-like structure is thus the most radically nonlinear form of emplotment I have examined in this article.¹⁷

Conclusion

The four spatial models I have just examined are, admittedly, quite far from Ricoeur's *Time and Narrative*. Ricoeur's goals are, particularly in the third volume of his work (where he engages cosmic time), philosophical rather than literary or narratological. At the same time, my discussion begins to address a basic question that Ricoeur leaves on the sidelines: how can more-than-human temporality be integrated into narrative, given the latter's bias toward human life and experience? In addressing this question, I have drawn inspiration from Ricoeur's theorization at two level. First, Ricoeur employed the term "configuration" to discuss the workings of emplotment, how narrative brings together events in a coherent whole. I have here taken the word "configuration" in the etymological sense of "formal (spatial) arrangement." This move resonates with recent developments within so-called New Formalism. According to Caroline Levine (2015), the primary goal of New Formalism is to open up the concept of form to extratextual realities, from the social processes Levine's work focuses on to the geological

¹⁷ For an analysis of *Here* that is broadly consistent with my theoretical framework in this article, but much more detailed, see Heggglund (2019).

and biological temporal scales I have foregrounded in these pages.¹⁸ I have argued that, just as our sense of time is informed by spatial metaphors, emplotment can follow various spatial models, which structure the progression of narrative.

These models build on spatial traces created by readers' interactions with the physical world. As Ricoeur himself suggests (and this is the second way in which this article builds on his work), spatial traces can provide linkage between experiential and cosmic time: like Hardy's fossil, physical traces evoke a vast temporality within human-scale experience. Specifying Ricoeur's argument, I have suggested here that *nonlinear* spatial traces are particularly productive vis-à-vis more-than-human temporality, when they become the organizing principle of emplotment.

The scale of geological or evolutionary history is not commensurate with the human life span, which creates a distinctive form of resistance when we try to narrativize such phenomena. Typically, narrative advances along a sequential path that reflects the causality of a single protagonist's desires and intentions.¹⁹ When this linear approach to emplotment is challenged, the three principles of temporal sequentiality, causal coherence, and diegetic focus, which are usually bundled up in linear narrative, come apart. Nonlinear traces such as discontinuous progression, the loop, the network, and the rhizome offer an alternative organizing principle. It should be stressed that this correlation between nonlinearity and deep time is only probabilistic: nonlinear strategies can be employed in narratives that remain fully within the bounds of the human scale. On the other hand, when the human practice of story attempts to embrace more-than-human temporality, linearity will almost necessarily be disrupted, just as Knight's panoramic vision of evolutionary history—from which I have taken my cue—distorts the linearity of subjective time.

Importantly, the distinction between the spatial traces I have identified, and between linearity and nonlinearity itself, is not a categorical one, and several nonlinear forms may coexist within a narrative: in Powers's *The Overstory*, for instance, which I have read through the lens of the network, there are linear as well as loop-like elements. The decision as to what counts as the *dominant* form in a plot is certainly subjective. Some readers may see *The Overstory* as a more open plot than it is in my reading, aligning it with the rhizome and not the network. It is equally possible to conceive of ways of realizing nonlinearity that are alternative to the four spatial models I have singled out here. But these models will still fall on a continuum, from the gappy line, which is indebted to linear emplotment, to the radical openness of the rhizome, which resists not just the path model but also the satisfying closure of the loop. Thinking more about and with these forms means extending Ricoeur's account of emplotment as well as his discussion of spatial traces as mediating between divergent temporalities. Although I could not expand on this aspect in this article, this approach to plot also brings into view important questions about the emotional underpinnings of narrative comprehension: for the form of narrative is not only grounded in our imagination of spatial traces, but in the patterning of affective experience as well.

¹⁸ See also Caracciolo (2019) on the significance of New Formalism to the discussion of contemporary fiction's engagement with the climate crisis.

¹⁹ Joseph Campbell's (1949) "hero's journey" is a particularly influential illustration of this linear model.

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