



Shapes of the Past and the Future: Darwin and the Narratology of Time Travel

TROUBLE WITH TIME

“‘Scientific people,’ proceeded the Time Traveller, after the pause required for the proper assimilation of this, ‘know very well that Time is only a kind of Space’” (*The Time Machine* 268).

What is at stake in treating time “as a kind of space,” politically, philosophically, and narratologically? While time travel has often been dismissed as merely a popular science-fictional gimmick, it seems far more productive to regard it as an inscription of a specific ideology of temporality. The roots of this ideology are in the evolutionary debate of the *fin-de-siècle* but its contemporary offshoots have become part of postmodernity’s problematic relationship with time and history. The postmodern trouble with time finds its expression in the “spatial turn” in narrativity, which includes the topos of time travel (Smethurst 37). In this essay, I will trace the development of time travel, from H. G. Wells’s *The Time Machine* to postmodern science fiction as a brief history of a-historicity.

As opposed to most narrative conventions, time travel originates in a single text, H. G. Wells’s *The Time Machine* (1895).¹ In his first novel, Wells invents not just a new plot but a new chronotope. Chronotope, as Mikhail Bakhtin defines it, is the spatial-temporal configuration of the narrative text, “the intrinsic connectedness of temporal and spatial relationships that are artistically expressed in literature” (15). The

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chronotope of time travel is unique in not merely connecting but actually conflating time and space. This has a number of interesting formal, philosophical, and cultural consequences.

Time is the foundation of narrative; it is “that structure of existence that reaches language in narrativity [while] narrativity . . . [is] the language structure that has temporality as its ultimate referent” (Ricoeur 35). Time, rather than space, shapes such salient features of narrative as directionality, causality, and agency. Space is isotropic while time is not: we can move in any direction in space but only in one direction in time. The past and the future are phenomenologically distinct in a way, in which, say, breadth and length are not; and this distinctness creates causal chains. Time travel enables agency, which is predicated on the ability to choose between several alternatives.

But time travel, as Wells’s protagonist points out, requires the equivalence of the past and the future, just as the three spatial dimensions are equivalent. The time-travel chronotope represents history as a frozen “space-time continuum,” in which the future is as determined and immutable as the past (Kern 206). The spatiality of this chronotope generates logical paradoxes or “chronoclasms,” which Stanislaw Lem describes as “a circular causal structure” (140). Chronoclasm is a Möbius strip of causality that may be illustrated by the famous “grandfather paradox,” in which X goes back in time, kills his grandfather, thus prevents his own conception, making it impossible for him to go back in time and kill his grandfather, etc. Time travel results in “a real tautology becom[ing] a falsehood” (140–41).² But the greatest paradox of time travel is its relation to narrative, and therefore social and historical, time. Lem argues that time travel dramatizes a “philosophy of history” (145). This is a philosophy of determinism, which implies that there is only one “true” narrative of history, and thus the seeming open-endedness of the future is an illusion. Since the possibility of choice between several future alternatives is effectively foreclosed, narrative agency falls apart.

And yet, despite its narrative difficulty, time travel has become one of the most familiar science-fiction topoi. Moreover, its popularity has spiked in the last twenty years, transcending the generic boundaries of science fiction and cropping up in mainstream novels, blockbuster movies, and computer games. Something in the postmodern episteme seems to resonate with the Time Traveller’s assertion that “time is space.”

This “something” is postmodernity’s fraught relation with history. Postmodernity tends to be “dominated by categories of space rather than by categories of time,” partly because of its suspiciousness toward the idea that history can be adequately represented in narrative (Jameson “Postmodernism” 319). But this shift away from narrative representation of time often leads to anomie or an outright denial of historical agency. As the sense of historicity collapses, postmodern narrativity “registers a shift in sensibilities from a predominantly temporal and historiographic imagination to one much more concerned with the spatial and the geographic” (Smethurst 15). The chronotope of time travel inscribes the cultural “depthlessness,” historical fatalism, and temporal fragmentation of the postmodern subject. In doing so, it exposes the paradoxical kinship between the postmodern denial of history and the extreme forms of historical determinism.

But paradoxically, time travel originates in a text whose thematics is shaped by the “messiness, historicity, and timeliness (not timelessness)” of evolutionary theory (Morson 292). *The Time Machine*, one of the greatest “evolutionary fables” ever written, engages with the contentious issue of historical contingency that had been brought to the fore by Darwin’s *Origin of Species* (McConnell 69). Wells was a trained biologist and a self-proclaimed Darwinian. How, then, can the novel introduce the deterministic chronotope of time travel, while at same time adopting the Darwinian view of contingent evolution?

To resolve this puzzling contradiction, *The Time Machine* needs to be read not as a seamless inscription of a deterministic worldview but rather as a textual field of conflicting interpretations of temporality. The novel contains not one but two chronotopes, radically at odds with each other. The deterministic chronotope of time travel is one of them. The second chronotope, which (following its contemporary incarnation) I will call the chronotope of alternative history, inscribes the Darwinian interpretation of evolution as a contingent and stochastic process and emphasizes the phenomenological distinctiveness of time and space.

In the hundred years after its publication, the novel’s two chronotopes have developed into two very different narrative forms, time travel and alternative history, corresponding to the two forms of temporality that Lyotard called “myth” and “contingency.” The first is a “constant framework” of determinism, the second, an open-ended flux of unpredictable events (Lyotard 67). Myth is characteristic of utopian and religious ideologies, as well as of the “end of history” postmodern malaise; contingency emphasizes free agency, randomness, and historical choice.

While the deployment of the two chronotopes in postmodernity is wider than the issue of Darwinism, they still bear the “sedimented” traces of their origin in the *fin-de-siècle* cauldron of evolutionary controversy. The structure of *The Time Machine* is a response to the environment of the *fin-de-siècle*, but its generic progeny have had to survive in the milieu of modernism and eventually postmodernism, adapting to the changing conditions, while still bound by their inherited chronotopes. In this essay I will adopt an evolutionary approach, which, to paraphrase *The Origin of Species*, will account both for the continuity of literary descent and for “the probability of conversion from one function to another” (312). The first part will situate Wells’s novel in its cultural context and analyze the formal features of the novel as a response to the two conflicting views of evolutionary history fighting for supremacy in the *fin-de-siècle*. The second part will look at the Traveller’s postmodern descendants and their continuing trouble with time.

THE DEMON OF HISTORY

Evolutionary theory is still a primary battlefield of determinism and contingency and has been so from its inception in *The Origin of Species*. Darwin was “the most brilliant thinker ever to develop a view of the world as eventful process irreducible to structure,” the view in which “contingency reigns” (Morson 291–92). Despite their considerable disagreements over the specifics of the evolutionary process,

all contemporary interpreters of Darwin, such as Peter Bowler, Ernst Mayr, Daniel Dennett, Richard Dawkins, and Stephen Jay Gould, are united in their emphasis on the philosophical importance of contingency and timeliness in history.

The crux of the matter for the opponents to Darwinian theory, then and now, is the “undirected process” of natural selection, which effectively denies teleology.³ Natural selection adapts individual organisms to *random* shifts in the environment and is therefore open-ended and non-progressive. Mindful of the centrality of progress in his culture, Darwin hedges in the radical implications of his theory, especially in the later editions of *The Origin*. However, he elegantly undermines the idea of progress by pointing out that “naturalists have not as yet defined to each other’s satisfaction what is meant by high and low forms” (336). Though later organisms might be better adapted to a particular ecological niche than earlier ones, this does not mean that they are “higher” in any absolute sense. His disciple T. H. Huxley devastatingly argues in “Evolution and Ethics” that if a new ice age occurred, cockroaches and lichen would be the “highest”—because best adapted—life-forms.

The scandal of Darwinism in Victorian culture was not only due to its incompatibility with the Biblical chronology but also to its notion of history as non-directional and shaped by chance. This notion led physicist William Herschel to dub Darwinism “the law of higgledy-piggledy.” As late as the 1920s, George Bernard Shaw who was hardly a Christian fundamentalist rejected Darwin and embraced a scientifically bankrupt neo-Lamarckism because of his opposition to the Darwinian philosophy of chance: “[Darwinism] seems simple, because you do not at first realize all that it involves. But when its whole significance dawns on you, your heart sinks into a heap of sand within you. There is a hideous fatalism about it, a ghastly and damnable reduction of beauty and intelligence, of strength and purpose, of hope and aspiration, to such casually picturesque changes as an avalanche may make in a mountain landscape, or a railway accident in a human figure” (33). The resistance to Darwinism, as biologist J. L. Monod argues, is often based on revulsion from contingency: “The aspect of evolutionary theory that is unacceptable to many enlightened people, either scientists or philosophers, or ideologists of one kind or another, is the completely contingent aspect which the existence of man, societies, and so on, must take if we accept this theory” (394–95).

This “completely contingent aspect” is eliminated if evolution is divorced from natural selection. And this is indeed what happened in the fifty years after the publication of *The Origin*. While “the controversy over evolution itself was effectively dead within ten years, Darwin’s explanation for it [i.e., natural selection] steadily *declined* in popularity” (Morton 23). Peter Bowler describes the “non-Darwinian revolution” of the *fin-de-siècle*, which accepted the basic idea of transmutation of species but substituted for the mechanism of natural selection a whole host of alternatives: orthogenesis, neo-Lamarckism, saltationism and others. What they all had in common was belief in an inbuilt teleological tendency in the evolutionary process. Herbert Spencer’s evolutionary philosophy (which preceded Darwinism) baldly stated: “Progress is not an accident . . . but a beneficent necessity” (Spencer).

While there were some scientific objections to natural selection, much of the backlash was emotionally and ideologically motivated: “the prevailing Zeitgeist was

utterly opposed to Darwin's thought and prevented a universal acceptance of some of his new ideas for more than a hundred years. Indeed . . . many Darwinian ideas are still not yet fully accepted, owing to the continuing power of opposing ideologies" (Mayr 40). What is being rejected, in other words, is the Darwinian narrative of history as contingent. Instead, both late-Victorian and contemporary alternatives stipulate an overarching design for history, be it positive (progress) or negative (inevitable extinction). After the modern synthesis solved the enigma of heredity, the postmodern battles over "Darwin's dangerous idea" have been mostly waged on philosophical grounds, over Darwinism's insistence that "contingency sets the basic pattern of nature" (Gould 284). Strict neo-Darwinians, such as Richard Dawkins, tirelessly emphasize the non-teleological workings of natural selection: "[n]atural selection, the blind, unconscious, automatic process which Darwin discovered, and which we now know is the explanation for the existence and apparently purposeful form of all life, has no purpose in mind. It has no mind and mind's eye. It does not plan for the future. It has no vision, no foresight, no sight at all. If it can be said to play the role of watchmaker in nature, it is the *blind* watchmaker" (5).

Dawkins's blind watchmaker is a sardonic twist on William Paley's *Natural Theology* (1801). In Paley's book, the exquisite structure of living organism testifies to the prior design of the creator, just as the structure of a watch testifies to the design of the watchmaker. Dawkins shifts the metaphor from structure to function, from design to process. The function of a watch is to measure time. The "function" of life is to survive in time. The ostensible design of living organisms is a measure of the vastness of the geological time-scale, which has enabled the hit-and-miss workings of natural selection. Thus, Darwinism restores temporality to its central place in the evolutionary process. The living world bears what Gould calls "the unerasable and determined signature of history" (283).

The accumulated weight of scientific evidence has tipped the scales in the fight between Darwinism and its teleological rivals, leaving the Intelligent Design movement to plead its case in courts and on the Internet. The situation was different in the 1890s when the "non-Darwinian revolution" worked hard to reinstate design in the place of "the law of higgledy-piggledy." However, as Shaw's outburst demonstrates, Darwinism, while in eclipse, had never truly died. When *The Time Machine* was written, Darwinism still had a staunch and influential defender: T. H. Huxley, "Darwin's bulldog" (Codella). Huxley's ideas were a profound influence on his student in the Normal School of Science, H. G. Wells, who "considered his study of Darwinian biology under T. H. Huxley to be the foundation of his world view" (Hughes 48). However, Wells's subsequent career and in particular his gradual shift toward progressionism and utopia indicate that he was not immune to the deterministic ideas of his period that postulated an overarching design of history.

The Time Machine is poised between the two late-Victorian concepts of evolution-as-design and evolution-as-contingency. In the 1933 Introduction to his collected scientific romances Wells recalls "the placid assumption of that time [*fin-de-siècle*] that Evolution was a pro-human force making things better and better for mankind" and says that *The Time Machine* was written as an expression of his own alternative "vision of the aimless torture in creation" (242–43). But in fact

“the placid assumption” that the course of history is predetermined and can be known in advance is also inscribed in *The Time Machine*, along with its opposite. The novel’s two chronotopes reflect the two poles of the *fin-de-siècle* evolutionary debate, and its narrative aporia indicates Wells’s own indecision with regard to the true nature of time and history. In the following section I will look at the two chronotopes in more detail and then go back to Huxley whose defense of Darwinism was hemmed in with despair that mirrors his student’s view of contingency as “the aimless torture in creation.”

STRANGLED BY THE TIME LOOP

In the critical interpretations of *The Time Machine*, there are two opposing views of its vision of the future, as either final and apocalyptic or enigmatic and open-ended. Sometimes, the two coexist in the same reading: thus, Robert Philmus sees the flowers that the Traveller brings back from the future as “a hieroglyphic of despair,” an expression of inexorable destiny. But on the other hand, he argues that the novel is “a parable of guarded hope” since “the future is real, possibly catastrophic, but not beyond redemption” (167). Logically, the two alternatives are mutually exclusive; and yet the novel indeed encompasses both. It does so, as I have been arguing, by containing two chronotopes, two radically different narrative inscriptions of temporality.

Wells’s novel is a story within a story. The embedding story is told by a first-person narrator who, together with a group of friends, listens to the embedded tale told by the Traveller. The frame narrator describes the Time Machine itself, witnesses its launch, and testifies to the Traveller’s return with the flowers from the future. He concludes the novel by stating that the Traveller failed to return from his next voyage and offering his own thoughts on the subject of time travel. In the embedded tale, the Time Traveller narrates his adventures in the year 802,701 AD, followed by several more time-jumps into the even more distant futurity. Both narrators are nameless and flat, mere averages of the Victorian educated upper-middle-class.

But despite the similarity of the point of view, the embedding and the embedded tales are radically different in their attitudes to temporality. The embedding narrative of time travel requires historical determinism, which is defied by the embedded narrative of historical contingency. *The Time Machine* thus displays what I will call *heterogeneous ontological embedding*.

In the embedding narrative, time literally becomes space; the Machine can “travel indifferently in any direction of Space or Time, as the driver determines” (269). The Traveller’s entire million-year-long odyssey takes place between Chapter 2, entitled “The Time Machine,” and Chapter 3, entitled “The Time Traveller Returns,” which is exactly a week for the frame narrator. This almost infinite “stretch” does not result from the discrepancy between objective and subjective time, as in Virginia Woolf or James Joyce. Just the opposite: time is as objective as space and therefore it can be navigated at different speeds. In the world of time travel, “the temporal gap . . . is reduced to co-presence” (Currie 104).

This “co-presence” generates an incipient causal loop. The narrator, having heard the Traveller’s explanation of his device, wonders about “the curious possibilities of anachronism and of utter confusion it [time travel] suggested” (273). And indeed, as one tries to think through the implications of time travel, “utter confusion” is the result. If the Traveller saw the future, then the future already exists, and history is absolutely determined by causality, so that every cause can have only one effect. But since he knows the horrors that lie ahead and spreads the tale, why is the future not affected? And if it is affected, where exactly does he travel? Determinism requires causality, but causality excludes determinism.

In the conclusion of the novel the narrator muses on this paradox: “He, I know—for the question had been discussed among us long before the Time Machine was made—thought but cheerlessly of the Advancement of Mankind, and saw in the growing pile of civilization only a foolish heaping that must inevitably fall back upon and destroy its makers in the end. If that is so, it remains for us to live as though it were not so. But to me the future is still black and blank—is a vast ignorance, lit at a few casual places by the memory of his story” (335). “*If that is so, it remains for us to live as though it were not so.*” The narrator accepts the determinism implied by time travel and suggests that the only escape is through pretending that the will is free, while knowing it is not. But does not this pretense itself suggest that change is possible? If we can imagine an alternative to the inevitable future, what prevents us from making it real?

These questions remain unanswered in the frame narrative. But in the Time Traveller’s tale they are simply dismissed as irrelevant. For despite the fact that his sojourn in the far future is enabled by time travel, the Traveller never doubts either the freedom of his own actions or the contingency of the world he encounters. The Traveller is constantly confronted with choices: to leave the Time Machine or not; to save Weena, an Eloi female, or to disregard her plight; to go into the Palace of the Green Porcelain or to stay with the Eloi. Some of his choices turn out to be disastrously wrong, as when he lingers in the Palace for too long and invites an attack by the nocturnal Morlocks, which results in Weena’s death. At every fork in the road, he experiences the sense of being free to choose, undeterred by the consideration that his very invention proves that this freedom is an illusion. His exploration is mental as well as physical: he is constantly advancing, testing, and discarding hypotheses to account for the strange world he encounters. His final explanation of this world is provisional and uncertain; his final vision is of the dim panorama of evolutionary history, in which the Eloi and the Morlocks are mere chance fluctuations rather than the predetermined end-points.

The importance of the embedded story in *The Time Machine* is underscored when the novel is compared to its first version, “The Chronic Argonauts.” In this novella there are also two narrative frames. But the embedded story is told only “in an incomplete and fragmentary form” and by a witness rather than the Time Traveller himself (Parrinder “*Time Machine*” 33). Parrinder stresses the thematic importance of the expansion of the “internal” narrative in the final version of *The Time Machine*, in which “the smoking-room setting of the tale is forgotten for very long stretches” (ibid.). He relates this expansion to the strengthening of Wells’s

“prophetic” voice. I would argue, however, that if prophecy is understood as a revelation of the inevitable future, the embedded tale is the voice of an anti-prophet, since it presents the future as essentially unknowable.

The double chronotope of *The Time Machine*, in its heterogeneous ontological embedding, combines two visions of temporality but does not mediate between them because no mediation is possible. Time travel necessitates historical determinism, while contingent evolution denies it. Time travel treats time as “a kind of space,” while contingent evolution reads space as a palimpsest of time. Time travel generates narratives of design, while contingent evolution emphasizes randomness and accident. Formally, no less than thematically, the novel is constituted by “the opposition of the Time Traveller’s vision of the future to the ideal reader’s norm of complacent, bourgeois class consciousness with its belief in linear progress, Spencerian ‘Social-Darwinism’” (Suvin 223).

This opposition is largely derived from a seminal essay by T. H. Huxley, Wells’s teacher and intellectual mentor. There is a broad critical consensus that the essay “Evolution and Ethics” is central to understanding the thematic of *The Time Machine* (see Hughes, Suvin, Parrinder, and Philmus). However, while most critics agree that Huxley’s “biological paradigm” inheres in the novel, there is no consensus on “the shape it takes” (Hughes 48). This “shape” in fact is the shape of its double chronotope, in which the embedded chronotope of the Eloi and the Morlocks dramatizes Huxley’s Darwinian narrative of history, while the embedding chronotope of time travel resonates with the ideological reservations that hemmed in this narrative in late-Victorian culture and increasingly, in Wells’s own world-view as well.

THE GARDEN OF FORKED PATHS

Wells’s original view of evolution as “the aimless torture in creation” is heavily influenced by Huxley’s, which in turn derives from Darwin’s own moral qualms regarding the implications of his theory. In 1860 Darwin wrote to Asa Gray: “I own that I cannot see as plainly as others do, and as I should wish to do, evidence of design and beneficence on all sides of us. There seems to me too much misery in the world” (*Correspondence* 124). He goes on to give examples of pain and suffering in the animal world, produced by the blind watchmaker of natural selection who clumsily twists flesh and blood into more or less adapted forms regardless of the price to the individual.

This was a central issue in the debates between evolution-by-natural-selection and evolution-by-design. Nobody could deny the Tennysonian nature “red in tooth and claw.” But if there was an underlying design to history, the unmitigated misery of the animal world could be recuperated in some overarching utopia of progress, improvement, or natural harmony, much as the Christian myth recuperates the suffering of the fallen humanity through the notion of the divine providence. On the other hand, if history was truly contingent, then the torture was aimless, meaningless, and endless.

The first alternative was widely accepted, while the second had few defenders. But the notion of progress had an unexpected corollary, which was fully de-

veloped in the depredations of the misnamed Social Darwinism. If the design of nature is to be a model for society, and nature is cruel, then cruelty becomes a positive virtue.

Huxley was keenly aware of the dangers of Social Darwinism. He rejected the belief that ethics is “applied Natural History,” but this rejection did not entail rejection of Darwinism (74). On the contrary, he accepted the Darwinian continuity between “the State of Nature” and “the State of Art” (civilization), whose corollary is that the human species has been shaped by natural selection. But as opposed to sociobiology of today, Huxley did not see the past as determining the present and the future. Since nature evinces no signs of any design, progressive or regressive, malevolent or benevolent, civilization cannot look to it for guidance. True evolutionary ethics is the ethics of freedom, unconstrained by preordained ends: “Cosmic evolution may teach us how the good and the evil tendencies of man may have come about; but in itself, it is incompetent to furnish any better reason why what we call the good is preferable to what we call evil than we had before” (79–80).

The rhetoric of Huxley’s essay echoes its theme. Its master-trope is metonymy, based on temporal continuity. Huxley rewrites static oppositions, such as nature and civilization, human and animal, good and evil, as the end-points of a dynamic temporal process. His trope of the garden is a perfect illustration of the metonymic inscription of historical contingency. A garden is a slice of wilderness that is tended and cultivated until it becomes its opposite. If neglected, it sinks into wilderness again and there is no particular moment in time in which the continuity between cultivation and nature is broken by a sharp divide. And yet, garden and wilderness are commonly perceived as an opposition. “Sliced” at a point in time, a random process presents the appearance of a design. The garden becomes an image of the continuum of evolutionary transformations that by “imperceptible gradations” (Darwin’s favorite expression) links nature and culture. Civilization develops out of nature, and yet it opposes nature: and if it is argued that this is “logically absurd, I am sorry for logic, because, as we have seen, the fact is so” (Huxley 11).

In *The Time Machine*, the tropological garden of Huxley becomes the “long neglected and yet weedless garden” of the future, in which the temporal metonymy of evolution underlies the spatial opposition of the diurnal Eloi and the nocturnal Morlocks (283). Moreover, this metonymy is split into four different possible scenarios of the “gradations of descent.”

This proliferation of temporal lines militates against the common allegorical interpretation of the novel, in which the Eloi and the Morlocks are reduced to personifications of the “Haves” and the “Have-nots” of Victorian society (Bergonzi 51).⁴ An allegory presupposes a stable system of correspondences that enables a consistent decoding of the text. But in *The Time Machine* the allegorical correspondence is destabilized twice: by the enormous temporal distance between the late nineteenth century and the world of 802,701 AD; and by the multiple possibilities of their connection. Patrick Parrinder points out that the temporal distance only detracts from the socially allegorical dimension of the novel: “[e]volution by natural selection—the strictly Darwinian model to which Wells and Huxley adhered—could not have brought about significant changes within the human species within recorded history,

so that any such changes must be cultural, not natural in origin. Wells was determined to show the results of hypothetical natural evolution, not of artificial or eugenic processes" (*Shadows* 39).

Since natural selection is "hypothetical," Wells's scenarios do not correspond to the tidy pattern of lower-to-higher (or higher-to-lower) forms, required by evolutionary determinism. In fact, the known evolutionary path of humanity is deliberately scrambled in the novel. The Eloi and the Morlocks are compared to an array of morphologically diverse animals—ants, cattle, lemurs, spiders—who are not on humanity's phylogenetic mainline. And after leaving the world of 802,701 AD the Traveller voyages into further futurity where he meets grotesque insectoid creatures, a tentacled monster and—in the episode which was omitted in the novel's first book publication as too gruesome—a small gray kangaroo-like animal, which still has five-digit hands and a rounded forehead. His conclusion is that "there is no reason why a degenerate humanity should not come at last to differentiate into as many species as the descendants of the mud fish who fathered all the land vertebrates" (326). Instead of sliding down the morphological scale, humanity fans out into a variety of forms, adapting to the changing environment. The ending of the novel radically breaks the phylogenetic sequence, as various life-forms are "all present pell-mell, outside of their proper taxonomic order, within about three pages" (Suvin 232).

The Traveller constantly stresses that his interpretations of the future world are provisional. His four possible narratives of the evolutionary descent of the Eloi and the Morlocks may be seen as alternative histories of futurity, since we do not know which—if any—of them has in fact taken place. His first impression of the "weedless garden" of the future is that he has arrived in a utopia, "the age of quiet," in which history comes to a happy ending. "'Communism,' said I to myself" (286). Confronted with the obvious intellectual deficiencies of the Eloi, he then decides that this is the age of decay, "the sunset of mankind" (287). This radical swerve from utopia to dystopia undermines the tight semantic fit between the literal and the figurative meaning of the text, which is the hallmark of allegory. If the future world is so semantically rich as to allow such different interpretations, the embedded chronotope is "unique, changeable, and therefore subject to a *cognitive* view" rather than to the simple decoding of allegorical correspondences (Suvin 7; emphasis original).

This cognitive view is further emphasized when the Traveller once again modifies his hypothesis in the light of new data, the existence of the Morlocks. First he believes that they are the exploited slaves of their decadent Eloi masters. But observing that in the world without animal life the Morlocks are carnivores, the Traveller advances his next hypothesis: "These Eloi were mere fatted cattle, which the ant-like Morlocks preserved and preyed upon—probably saw to the breeding of" (311). But even this final hypothesis is tentative: "[i]t may be as wrong an explanation as mortal wit could invent" (323). This open-ended chain of conjectures follows the Darwinian method in rejecting an overall scheme of meaning in favor of a specific and concrete historical narrative.

This narrative begins with the class divisions of Victorian society. It ends with two animal species, locked in a biological relationship of predation, which as opposed to a social one of exploitation cannot be changed. The Morlocks have to feed

on the Eloi because there is nothing else for them to eat; the Eloi have to be herded by the Morlocks because they will starve on their own. The two key metaphors used to describe the two species are ants and cattle, and both indicate that the Huxleyan "State of Art" has been supplanted by the "State of Nature." Ants and cattle are prisoners of their biological makeup, which as Huxley argues, is beyond ethics. The Traveller, despite his revulsion to the spidery Morlocks, does not judge them in ethical terms. Since "the intelligence that would have made this state of things a torment had gone," only the biological imperatives of survival remain (311). The Traveller regards both species as animal-like. The manual dexterity of the Morlocks is, for him, a mere instinct: "They did it as a standing horse paws with his foot, or as a man enjoys killing animals in sport: because ancient and departed necessities have impressed it on the organism" (308). And his fondness for Weena is balanced by his realization that "she always seemed to me, I fancy, more human than she was" (312).

The Traveller "is confronted with the future in much the same way the Romantic poet finds himself confronted with the inhospitable rockface of nature: a mute, gigantic, threatening, and absolutely incommunicable presence, about which one can only speculate" (McConnell 83). Clothes, buildings, and machines are only vestiges of this world's descent from our own, the signatures of its history rather than the signifiers of the human "State of Art."

The embedded narrative of the novel should be seen not as a moral allegory but as a social extrapolation. Its critique of the Victorian class system lies precisely in its reliance on the evolutionary theory, which reveals both the contingency of social divisions and their heavy biological toll. Since evolution is *not* "a pro-human force making things better and better for mankind," it can amplify any human mistake and render it irreversible. The novel's entropic imagery emphasizes young Wells's stoic outlook, which follows Huxley's in denouncing the delusion of a utopia: "we should cast aside the notion that the escape from pain and sorrow is the proper object of life" and simply go on, "cherishing the good that falls in our way, and bearing the evil" (Huxley 86).

However, the alternative-history chronotope of the Time Traveller is still embedded in the deterministic chronotope of time travel. And though this determinism is not utopian per se, it implies a design of history, which enables utopianism. Parinder argues that "*The Time Machine* is an attack on utopia" ("*Time Machine*" 37). But the mature Wells is famous for his utopian writings. Wells's long career (he died in 1946), is marked by gradual retreat from the radical contingency of Huxley and Darwin in favor of what Wells called an engineered "escape from the accidental and the chaotic" (*First and Last Things* 27). He becomes more and more determined to impose a teleological pattern upon history. This determination, first appearing in his non-fictional book *Anticipations* (1901) and articulated in *A Modern Utopia* (1905), culminates in *The Shape of Things to Come* (1933), which is disturbingly quasi-fascist, in its boundless disdain for democracy, its cult of purification by blood, and its longing for a ruthless leader. And the narrative form of the book perfectly corresponds to its ideological message: the shape of things to come is a shape indeed, a spatial pattern, a design of progress, into which reluctant history has to be forced even at the price of terrible violence. Ultimately, it is not the Time Traveller but time travel that becomes the legacy of Wells the utopian.

BACK TO THE FUTURE

A hundred and fifty years after the publication of *The Origin of Species*, evolutionary theory remains a test-case for the clash between determinism and contingency. The passionate debate over Intelligent Design as an “alternative” to Darwinism shows that the issue is not primarily scientific but ideological. What is at stake in this debate is the shape of history and ultimately the nature of the human subject-in-time. But the *fin-de-siècle* ideological centrality of evolution has been superseded by the heritage of recent historical cataclysms, such as the Holocaust, that pose the same dilemmas with an even greater moral and political urgency. Is the future (and the past) inevitable or accidental? Is historical agency possible? Is the subject free to choose his or her own future?

Because of its thematic engagement with the nature of time and space, science fiction generates a plethora of narrative devices that reflect the conflicting postmodern views of history. The two chronotopes of *The Time Machine* have given rise to two distinct narrative sub-genres within contemporary science fiction: time travel and alternative history.⁵ The use of either of these chronotopes implies a philosophy of history, even if it is not explicitly articulated as such. Most time-travel narratives, especially those referencing great historical disasters, respond to the postmodern denial of “timeliness” in favor of “timelessness.” This denial is the loss of historicity that “strikes at the concept of time itself” (Currie 78). Paradoxically, the often-declared death of master narratives of history has resulted not in the liberation of the subject from the shackles of time but in his/her enslavement by space. Postmodernism seems to be the very opposite of historical determinism, but in fact, the two are alike in their inability to imagine the future as radically different from the past, in their denial of free human agency, and in their loss of the sense of history as flexible, contingent, and unpredictable.

In science fiction, the logical paradoxes of time travel reflect the heavy toll that timelessness takes on the postmodern subject. Two examples are Octavia Butler’s *Kindred* and J. R. Dunn’s *Days of Cain*, dealing with two great catastrophes of modern history, American slavery and the Holocaust. Like *The Time Machine*, both novels engage with the question of what makes us human. But if the embedded alternative-history chronotope of Wells’s novel counters the determinism of time travel, most contemporary time-travel narratives have no structural or ideological counterweight to the relentless determinism of their “time as space” chronotope. The result is often a text, whose narrative fragmentation reflects the psychological and ideological splintering of its subject.

Kindred tells the story of a contemporary African-American woman Dana who is periodically drawn into the antebellum past to save the life of Rufus, a slaveholding plantation owner and her own ancestor. From the very beginning, she is aware of the causal loop involved: Rufus’s life depends “on the actions of his unconceived descendant” who will not be conceived if Rufus does not live (29). But eventually she is confronted with a much worse moral loop: to ensure her own conception, she has to assist Rufus in forcing a young woman slave, Alice, whose husband he has killed, to succumb to his sexual advances. In order to exist, Dana has to become an accessory to rape.

Butler brilliantly uses this loop to explore the moral ambiguities of slavery, the dense networks of power, dependency, and fear that bound the slaves and the masters. The more Dana tries to find a way out, the more she becomes complicit with the system. She eventually kills Rufus when he tries to rape her after Alice's death, but this belated rebellion does nothing to change the course of history: Dana's slave ancestress is already conceived. Despite her resourcefulness and bravery, Dana is rendered impotent by the historical determinism that is reflected in the circular structure of the novel: it begins at the end and tells her story as an extended flashback. Back in the present, Dana returns to the ruins of the plantation house, while remarking bitterly to her husband "You'd think I would have had enough of the past" (264).

But in the world of time travel one cannot have had enough of the past because the past totally determines one's present identity. Dana's subjectivity is hollowed out by the impossibility of meaningful action, reduced to the see-saw of complicity and rage, neither of which leads to change. Butler devises a stunning image of this crippled agency: during her last time jump, Dana's arm melds into a wall of her house. She is literally imprisoned by the immovable pattern of solid time.

Both thematically and structurally, *Kindred* grapples with the historical inevitability of slavery. Was it just a tragic incident or a necessary development, a stage in some overarching plot of salvation or damnation? The shape of the chronotope points to the latter but this answer is so morally repugnant that the narrative revolts against it; Dana tears herself away from the imprisoning matrix of space-time. But the price of this revolt is a crippled plot and a wounded subject.

Kindred offers no alternative to its grim determinism. It is not only because the novel is a product of a long generic development, which has separated the two chronotopes of Wells's novel into two distinct sub-genres. Equally important is the dead weight of negative historical experience upon the temporal imagination of post-modernity. *The Time Machine* deals with the present and the future; its inscription of determinism expresses the *fin-de-siècle*'s apprehension that the promise of utopian progress may turn out to be the curse of dystopian regress. But in its embedded narrative, the grand sweep of the Traveller's tale conveys a sense of possibility; as Darwin once said, there is "grandeur" in contingency, despite its manifest dangers. For the postmodern time travelers, on the contrary, the horrors of the past seem to be an obstacle that can be neither denied nor transcended. Yeats's "rough beast" of history has come and gone, leaving behind the landscape of temporal ruins.

Another time-travel novel, Dunn's *Days of Cain*, poses the question of inevitability with regard to the Holocaust and does not shy away from an affirmative answer. The novel depicts a time-traveling elite trying to preserve the "integrity" of history against the possibility of change (the device borrowed from Isaac Asimov's *The End of Eternity*). When one of them attempts to prevent the Nazi genocide, her rebellion is squashed and the Holocaust proceeds on schedule. While fully accepting historical determinism, the novel attempts to put a cheerful gloss on it, with predictably bathetic results. The protagonist who questions the necessity of the Holocaust is granted an interview with a godlike intelligence at the end of time and is assured that the horror of Auschwitz was salutary since it prevented even worse hor-

rors by negative example: this conclusion is as dubious as it is disappointing. It seems that the only alternative to the impotent anger of *Kindred* is the pseudo-millenarian contortions of “whatever is, is right.”

Despite its scientific aura, time travel is not a technology but a formalized ideology, which is to say, a technology of subjectivity. But this is a technology that only produces defective merchandise. The deterioration of subjectivity in the time-travel chronotope is particularly evident in action-driven texts, whether literary or cinematic. In both *Kindred* and *Days of Cain* individual action is presented as futile. Despite her resourcefulness, Dana only manages to achieve what she has been fated to achieve, against her own moral qualms. Anna, the time-traveler of *Days of Cain*, attempts to save the six millions of Holocaust victims and ends up joining their numbers. These novels self-consciously engage with the psychological implications of the chronoclasm. But perhaps even more illuminating is the inadvertent narrative paradoxes that result from the generic cross-breeding of time travel and action cinema. The latter is absolutely dependent on the hypertrophied individual agency for its plot structure. And when the irresistible action hero meets the immovable obstacle of historical determinism, the death of the subject ceases to be a theoretical cliché.

The action cinema’s fascination with time travel has spawned a number of blockbusters, from *The Terminator* trilogy and *Back to the Future*, to *A Sound of Thunder* and *Déjà vu*. In each of these movies, the quick-on-the-draw protagonist attempts to buckle the iron grip of the time-travel chronotope. In a sense, the real antagonist of the time-traveling action hero is history itself. And unless defeated by a series of comic non sequiturs as in *The Back to the Future* movies, history comes up the winner. The time-travel blockbusters perfectly illustrate the collapse of agency as history freezes into “a series of pure and unrelated presents in time” (Jameson “Postmodernism” 324). Their characters engage in a great deal of noisy and violent activity, only to be confronted at the end with its utter futility. In the *Terminator* trilogy, for example, all the car chases and fist-fights, meant to prevent the rise of intelligent machines, only succeed in bringing it about. The movie’s version of the chronoclasm goes hand in hand with its regression into the pre-Oedipal domain, in which the distinctions of age, gender, and species are dissolved in the exchange of visual images. By ensuring his own conception, John Connor makes it as impossible to construct a linear narrative of subjectivity as it is impossible to establish the identity of the metamorphic T-1000 in *Terminator 2*. But rather than rejoicing in this subversion of chronology, the trilogy generates a sense of gloom and claustrophobia. The escape from temporality may be “a liberation from anxiety” but it is also “a liberation from every other kind of feeling as well” (Jameson “Postmodernism” 319). When there is no coherent self, there is nobody left to rebel against the demand of coherence.

Not only in science fiction but in postmodern fiction in general, the chronoclasm becomes a significant narrative paradigm, generating the elaborate spatial forms of textual organization that Brian Richardson describes as “circular,” “antinomic” (reversed), and “dual or multiple” time-lines (Richardson 49–51). But the chronoclasm is challenged by another evolutionary descendant of *The Time Machine*: the alternative history or counterfactual.

MULTIVERSE

If the embedding chronotope of *The Time Machine* invents time travel, the embedded chronotope foreshadows alternative history. This is a sub-genre of science fiction, which presents history as infinitely malleable and open to an endless number of possibilities. The four evolutionary scenarios advanced by the Traveller to account for the history of the Eloi and the Morlocks are a precursor of the many contemporary texts based on a “what if?” scenario: what if the Neanderthals survived; the South defeated the North in the Civil War; Hitler won World War II and so on. Also known as “counterfactuals,” such scenarios are becoming increasingly popular in history-writing as well, with Niall Ferguson having recently edited a volume called *Virtual History*. Counterfactuals are the structural opposite of time-travel, since they are based on the notion of the absolute contingency of history and on the phenomenological distinctiveness of time and space. The narrative expression of historical contingency is what Marie-Laure Ryan calls a “virtual narrative,” which is a “reservoir of potentialities” (117). Such narratives follow Borges’s famous pattern of “the garden of the forked paths.” In Borges’s tale of the same title, the garden of the forked paths embodies the topology of contingency: every path splits into two possible directions as every event has two or more possible outcomes. This is the same image that Darwin used for evolution in the *Origin*: a branching tree of endlessly multiplying lines of descent. Stephen Jay Gould shows in *Wonderful Life* and elsewhere how the opposition between Darwin’s branching tree and the straight line of progress (or regress) embodies the most fundamental issue regarding the nature of history: the choice between determinism and contingency.

Many alternative history science fiction texts simply embrace contingency and disregard determinism, just as their time-travel counterparts do the opposite. But a few return to the structural aporia of *The Time Machine* with its double chronotope and attempt to reconcile the two philosophies of history that Wells left in dynamic tension side by side. The most ambitious of these attempts is Stephen Baxter’s sequel to *The Time Machine* called *The Time Ships*. It was published in 1995 to celebrate the centenary of Wells’s novel and though not the only contemporary sequel to it, is the only one to bear the official imprimatur of the Wells estate.

In *The Time Ships* the resurrected Time Traveller journeys back into the world of 802,701 to save Weena, only to find that this world has changed beyond recognition, with the Morlocks having become wise engineers while the Eloi are engaged in meaningless warfare. It turns out that this change is the result of his previous journey. From this point on, chronoclasms pile fast and thick throughout more than five hundred pages of the novel, with the Traveller’s every successive time-jault splitting off more and more time-lines, until he is lost in a maze of self-contradictory histories. And even though his first-person voice creates a semblance of continuity, it quickly becomes obvious that the Traveller is a hollow, semi-amnesiac subject, futilely trying to hold the unraveling fabric of the narrative together.

However, this narrative disintegration is cleverly recuperated at the end of the novel when the Traveller is granted a vision of the entirety of history. He perceives the multi-dimensional continuum of a “multiverse,” in which the infinity of possible

time-streams coexist side by side. What seemed to the Traveller a journey along the fixed axis of the past-present-future turns out to be movement *across* the multiverse, jumping from one time-stream to another. The multiverse is the garden of forked paths writ infinite. It neutralizes chronoclasms because it contains everything that can possibly exist, “an infinite regression, without beginning—and without paradox” (477).

The multiverse has, in fact, been admitted as a possibility in some versions of quantum theory. But whatever its ontological status, seen as a narrative device, it resolves the tension between time travel and alternative history by postulating a higher-order chronotope, which subsumes the two chronotopes of *The Time Machine*. The Time Traveller can now have his cake and eat it, to believe that “Time is only a kind of Space” and yet that the will is free, that agency matters, and that meaningful change is possible.

However, as with most such seemingly harmonious resolutions, the multiverse’s narrative mediation of the ideological tension between determinism and contingency creates its own problems. Since it is impossible to represent infinity, the multiverse remains little more than a vague cliché, while the real closure of *Time Ships* abruptly shifts back, to the individual level of the Time Traveller who is still determined to find the only time-line that matters to him, the one in which he abandoned Weena. The real issue is not the ultimate physical nature of time-space but the psychological, social, and emotional distinction between time *and* space. And this distinction can either be negated by the ideology of determinism, with its millenarian/apocalyptic narratives, or embraced by the ideology of contingency, which emphasizes agency and choice but leaves the subject lost in the garden of forked paths with no guiding map.

Evolution remains the primary-testing ground for the clash of these ideologies. The peculiar, emotionally charged position of Darwinism within postmodern culture testifies to the fact that the philosophical quandary described by Huxley and narrativized by Wells has not been resolved; if anything, the historical cataclysms of the intervening 150 years have exacerbated it to the point of near-explosion. On the one hand, contingency is embraced by some evolutionary biologists, such as Stephen Jay Gould who argues that the absence of evolutionary design is not a cause for despair, as Darwin’s opponents claim, but a reason for celebration: “[o]ur own evolution is a joy and a wonder because such a curious chain of events would probably never happen again, but having occurred, makes eminent sense. Contingency is a license to participate in history, and our psyche responds” (285). On the other hand, the rise of the Intelligent Design and the fact that, despite its scientific puerility, the movement has made significant inroads into culture means that “our” psyche might just as well respond with fear and revulsion to the open-endedness of history.

The equal popularity of the time-travel and the alternative-history chronotopes in science fiction is a reflection of this cultural schizophrenia of postmodernism, poised between myth and contingency, space and time. Evolutionary science alone cannot cure this schizophrenia; it is a political and cultural malaise that arises in response to social disasters and ideological challenges. But if Darwinism ever needs an additional proof, it may be provided by the history of time travel, which perfectly

corresponds to the evolutionary paradigm of contingent, unpredictable, and dynamic development. The two chronotopes of *The Time Machine* keep on multiplying, mutating, and evolving, to create a narrative vocabulary for our time-bound trouble with time.

ENDNOTES

1. Sporadic instances of time travel in mythology, folklore, and world literature before *The Time Machine* were based on the distinction between earthly time and a timeless supernatural realm. Mark Twain's *A Connecticut Yankee in King Arthur's Court* was published in 1889 but Twain's whimsy offers no explanation for his protagonist's return to the Middle Ages. Wells's achievement is all the more impressive because, despite popular misconception, it owes nothing to Einstein. Wells's novel precedes the special theory of relativity (1905), Hermann Minkowski's introduction of the concept of the four-dimensional space-time continuum (1907), and the general theory of relativity (1915).
2. A good example of the chronoclasm is Robert Heinlein's famous story "—All You Zombies—," in which the time-traveling sex-changing protagonist discovers that s/he is his own father, mother, and child.
3. The website of the so-called Intelligent Design Network, which campaigns against Darwin's theory and promotes teaching of creationism in public schools, proclaims: "[t]he theory of intelligent design (ID) holds that certain features of the universe and of living things are best explained by an intelligent cause rather than an undirected process such as natural selection."
4. The allegorical reading has been argued by Darko Suvin in his seminal book *Metamorphoses of Science Fiction*. According to Suvin, the structure of the novel is created by balanced dichotomies and can be represented in spatial terms, "as a general abstract scheme or paradigm" (233). In order to reconcile this spatial scheme with the evolutionary narrative, Suvin argues that Wells describes *devolution*: the predetermined process "that reverses the path of evolution backward" (225). But at the same time he self-contradictorily points out that devolution does *not* explain the morphological diversity of humanity's descendants.
5. See Suvin on *The Time Machine* as the "paradigmatic" science-fiction text.

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