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**LA THÈSE A ÉTÉ
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Fictions of Time:

A Study of the Development and Function
of the Time-Travel Motif in Science Fiction,
with an Analysis of
Mark Twain's A Connecticut Yankee in King Arthur's Court,
H.G. Wells's The Time Machine, Marge Piercy's
Woman on the Edge of Time, and Gregory Benford's Timescape

Veronica Hollinger

A Thesis in

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for the degree of Master of Arts at
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ABSTRACT

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The motif of time travel is central to the literature of science fiction and appeared at the inception of the genre itself. As a literary device, it is a particularly valuable tool in the literary exploration of some of the problems and questions which have always arisen from the experience of time in human life.

The purpose of this thesis is to demonstrate the function and value of time travel as a literary device and to indicate, through an examination of two significant works of the late nineteenth century and two important recent works, a pattern of change in our perception of time. This shift is at least partially the result of a movement away from the linear and determined model of the Newtonian universe to the more relativistic and open-ended universe defined by Einstein. It is this latter model which seems to offer the more optimistic approach to time and to the possibilities of free will in human life. In the course of this examination, the focus will be upon the juxtaposition of times and

spaces facilitated by the device of time travel, distinguishing, in the process, between the 'ironic romance' of the earlier works and the 'romantic realism' of the more recent ones.

For MPH

"The only thing that makes life possible is permanent,
intolerable uncertainty: not knowing what comes next."
(Ursula K. Le Guin, The Left Hand of Darkness)

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Introduction

"What, then, is time? . . . If no one asks me, I know what it is. If I wish to explain it to him who asks me, I do not know."¹ These words of St. Augustine serve to pinpoint the difficulty in trying to label that nebulous aspect of human existence which seems to elude all our efforts to define it. A multitude of beliefs and theories about the nature of time and its relationships to man have been formulated over the centuries, but no one view of time has proven adequate from one age to the next. Modern science currently accepts Einstein's dictum that the "sense of time . . . is a form of perception . . . [and time itself] simply a possible order of events."² According to this theory, time does not even exist apart from its relationship with space. From the human point of view, this hardly helps to clear up the confusion.

Definitions of time, like all our attempts at explaining reality, are fictions which have their impulse in our need to impose order and sense upon our existence. As Frank Kermode explains, "fictions are for finding things out, and they change as the needs of sense-making change."³

To many archaic cultures, time was a great circle which repeated itself endlessly, as reflected in the cycles of nat-

ure. To some Eastern religions, time is an illusion and reality exists outside of time, transcendent and static. The Judeo-Christian tradition maintains that the movements of time are also the movements of God in the world and that the end of time will mark the beginning of an eternity of salvation.

With the Enlightenment and the development of a scientific consciousness, time lost its transcendent value and man became truly a part of the natural universe, the means and end of his own salvation in time. Simultaneously, the apprehension of a running-down universe undermined the nineteenth-century myth of progress and apocalypse became a possibility to be feared rather than desired.

The age of science and technology also saw the rise of a new literary genre. Science fiction could not have existed before the Industrial age and the relatively modern time-sense of the last two centuries. As Mark Rose explains, "science fiction depends upon a sense of the reality of life in time, upon a sense of change and transformation and the conviction that tomorrow will be different from today."⁴

Not surprisingly, this literature of technology and change has always concerned itself with the problems and questions which arise from human existence in time. The concept of time travel, which appeared at the inception of the genre and which is still a central motif of modern science fiction, is its most valuable contribution to the many attempts in literature to explore time as a facet of our

lives. Robert Philmus would define it as the

fictional embodiment of the metaphoric substance of an idea. For science fiction generates its mythic fantasies by taking literally, and dramatizing, the metaphors expressive of those ideas that define, at least in part, the beliefs and nature of the social order.⁵

An absolute definition of science fiction is as difficult to come by, as is a single definition of time. In The SF Books of Lists, Maxim Jakubowski and Malcolm Edwards present twenty separate attempts at definition for the reader's consideration and these do not by any means exhaust the possibilities which have been offered since the nineteenth century.⁶ Gary Wolfe writes that "the quest for a universally applicable definition of the genre has become something of a Grail quest for science-fiction readers and critics.

..."⁷ While the quest is probably fated to continue for many years; there are several aspects of science fiction which have established themselves as generic characteristics.

One quality of SF is that it does depend "upon a sense of change and transformation," and tends, therefore, to be oriented toward the future and toward future possibilities inherent in the present. As a genre, then, science fiction is extremely time-conscious. Time travel provides a fictional paradigm within which to explore this particular awareness. Another central concern is with the development of science and technology and its implications for human existence.⁸ Unlike fantasy, a genre with which science fiction has been frequently associated, it situates the marvellous in a context more con-

sonant with human reality. For this reason, science or pseudo-science usually provides the rationale behind the unusual or wonderful elements which may appear in the SF narrative.

Finally, in consideration of the function of science fiction, Darko Suvin has argued that it is "a literary genre whose necessary and sufficient conditions are the presence and interaction of estrangement and cognition, and whose main formal device is the imaginative framework alternative to the author's empirical environment."⁹ The SF narrative establishes a world different from what is considered to be the 'real' one, in order to defamiliarize it, that is, to encourage the reader to re-examine the familiar in new terms. The desired end is genuine reflection upon present reality and often a consideration of its implications for the future.

Time travel provides a convenient method of juxtaposing alternate times and places, and has proven one of the most popular means of creating this "interaction of estrangement and cognition." It thus serves a dual purpose: it permits SF writers to address directly the nature of time, and it provides the pseudo-scientific logic for presenting divergent cultures and social values side by side for comparison and evaluation.

Robert Scholes writes that

It is because narrative structures bend time to human will that we delight in them so. Rhythm is man's triumph over mere chronicity, his way of making time dance to a human tune. This is nowhere more apparent than in the temporal structures of

fiction, in which repetition, periodicity, and climax give shape and meaning to the course of events.¹⁰

Shlomith Rimmon-Kenan points out that "time itself is indispensable to both story and text."¹¹ It is not surprising, then, that changing ideas about the nature of time, particularly the evolution from a Newtonian to an Einsteinian universe, have had a radical influence upon the structures of literary narrative. Modern writers such as Joseph Conrad, John Dos Passos, William Faulkner, James Joyce, Gertrude Stein, Virginia Woolf and Marcel Proust have reflected recent ideas about time in a multiplicity of structural experiments in their work. While science fiction has tended to remain conservative in form, time-travel stories comprise a body of works which usefully indicates how our views of time have changed and developed since the latter half of the nineteenth century.

The first two chapters of this thesis examine some of the most influential approaches to time theory and demonstrate how these ideas have provided the background for the growing number of time-travel narratives written since the nineteenth century. Once this context has been established, four particularly significant works of time travel will be analyzed in detail, in order to study more closely the function of time travel as a central motif in science fiction and to trace some of the changes in our awareness of time over the last century. Thus chapter 3 will examine two nineteenth-century science-fiction classics: Mark Twain's A Connecticut Yankee in King

Arthur's Court (1889) and H.G. Wells's The Time Machine (1895). Chapter 4 will examine two recent works, Marge Piercy's Woman on the Edge of Time (1976) and Gregory Benford's Timescape (1980).

It is hoped that this study will demonstrate the value of the time-travel motif as a literary device and that it will indicate, through a comparison of these four novels, a pattern of change in the perception of the nature of time, a movement away from the historical, linear model of the Newtonian universe to the more relativistic and open-ended model developed by Einstein.

This thesis is an attempt to create a fiction about a series of fictions, like a series of boxes which are contained, one within the other, in a sequence of descending sizes. It aims at designing a critical fiction (a thesis) about a series of literary fictions (time-travel narratives) which in themselves are reactions to the larger fictional constructions (religious, philosophical, and scientific) which have been designed to impose significance upon one facet of our human reality, which is at once very real and completely ephemeral.

All of our efforts to define and structure the movement of time in our lives and in the life of our universe are the constructs of cosmological fictions and, as such, have been subject to change and replacement by other sense-making fictions, although many have frozen into the absoluteness of myth.

Kermode distinguishes fiction from myth in that "myth op-

erates within the diagrams of ritual, which presupposes total and adequate explanations of things as they are and were; it is a sequence of radically unchangeable gestures."¹² Continuing the distinction, which is important for the purposes of this study, he writes:

Myths are the agents of stability, fictions the agents of change. Myths call for absolute, fictions for conditional assent. Myths make sense in terms of a lost order of time; . . . fictions, if successful, make sense of the here and now.¹³

Contemporary science is certainly conscious of its status as fiction, in the above terms. In his analysis of Relativity theory, Lincoln Barnett admits that "modern theorists are aware, as Newton was, that they stand on the shoulders of giants, and that their particular perspective may appear as distorted to posterity as that of their predecessors before them."¹⁴ The universe that we know is only the universe that we are equipped to know at any particular point in our development. For this reason, no scientific theory may ever claim to have attained the status of myth. Science must be forever conditional.

Robert Scholes and Eric S. Rabkin have discussed this aspect of both science and science fiction:

The exciting difference between science and other knowledge is the same difference that we find between science fiction and other fictions: both science and science fiction make a conscious effort to recognize their beliefs and examine their validity. In this way both arrive at new, and potentially more useful, fictions.¹⁵

In much the same way, then, this thesis, which seeks to organize and structure a specific motif within a specific literary

genre, is no more than a fiction. It is hoped that it will
make useful sense of its subject matter.

Notes

¹Cited by Stephen Kern, The Culture of Time and Space, 1880-1918 (Cambridge, Mass.: Harvard University Press, 1983), p. 33.

²Lincoln Barnett, The Universe and Dr. Einstein, (2nd. rev. ed. 1957; rpt. New York: Bantam Books, 1968), p. 47.

³Frank Kermode, The Sense of an Ending: Studies in the Theory of Fiction (1966; rpt. New York: Oxford University Press, 1975), p. 39. Gerald Graff has attacked Kermode's theory of the fictional nature of our sense-making patterns, especially those of a literary nature, in his Literature Against Itself: Literary Ideas in Modern Society (Chicago: University of Chicago Press, 1979). He complains that "it is not clear how fictions can help us make discoveries unless they refer to something that is not a fiction, and how anybody can refer to something that is not a fiction within Kermode's epistemological universe is not clear" (p. 169). He adds: "Kermode . . . /wants/ to have things both ways: . . . to get rid of mimetic models without surrendering cognitive claims for literature. The result is a kind of elegant hedging" (p. 170).

Graff seems to be interpreting Kermode very narrowly. Kermode does not deny an empirical reality. Rather, he denies the capability of the human intellect to contain and interpret that reality. For this reason, literature cannot ever claim to render completely a faithful imitation of reality. Genuine mimesis is impossible in literature, but if cognition depends upon mimesis, no scientific theory could ever claim to be a useful intellectual tool. Graff forgets that even science is only too ready to admit the conditional, i.e., fictional, status of even its most vaunted theories. Literary fictions, like scientific theories, are attempts to interpret those segments of reality which we are equipped to perceive. As our abilities increase and our perceptions widen, those fictional constructs rendered irrelevant must give way to more adequate explanations of whatever facets of reality they claim to address.

⁴Mark Rose, Alien Encounters: Anatomy of Science Fiction (Cambridge, Mass.: Harvard University Press, 1981), p. 96.

⁵Robert M. Philmus, Into the Unknown: The Evolution of Science Fiction from Francis Godwin to H.G. Wells (Berkeley:

University of California Press, 1970), p. 21.

⁶Maxim Jakubowski and Malcolm Edwards, The SF Book of Lists (New York: Berkley Books, 1983), pp. 256-258.

⁷Gary K. Wolfe, The Known and the Unknown: The Iconography of Science Fiction (Kent, Oh.: Kent State University Press, 1979), p. xiii.

⁸Philip Klass, "An Innocent in Time: Mark Twain in King Arthur's Court," Extrapolation, 16 (Winter 1974), 30.

⁹Darko Suvin, Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre (New Haven: Yale University Press, 1979), pp. 7-8.

¹⁰Robert Scholes, Structuralism in Literature: An Introduction (New Haven: Yale University Press, 1974), pp. 197-198.

¹¹Shlomith Rimmon-Kenan, Narrative Fiction: Contemporary Poetics (New York: Methuen, 1983), p. 58.

¹²The Sense of an Ending, p. 39.

¹³The Sense of an Ending, p. 39.

¹⁴The Universe and Dr. Einstein, p. 115.

¹⁵Robert Scholes and Eric S. Rabkin, Science Fiction: History, Science, Vision (New York: Oxford University Press, 1977), p. 162.

Chapter One

Patterns of Time: An Overview

"Time is a concept, a universal property, that we construct through our experience of the world." (Richard Schlegel, "Time and Thermodynamics")

Count Axel plucks a crystal flower from his garden of time, while in the background his wife plays a Mozart rondo. "Strange shifts momentarily transform the evening, subtly altering its dimensions of time and space."¹ A marauding army has appeared on the horizon of the wasteland plain which surrounds the Count's villa -- a villa protected from the encroachments of history by his fantastic garden. As the crystal bloom releases its power, the army momentarily recedes in time. All the ravages of time and change which threaten to destroy the frozen beauty of the Count's life are temporarily at bay. Finally, however, when there are no more flowers in the garden, the end arrives. The hordes descend upon what they discover to be a crumbling ruin. Hidden by the wild growth of an ancient garden are two statues: the Count and his wife, in a myth-like transformation, have achieved their eternity of temporal stasis.

J.G. Ballard's brief science-fiction parable, "The Garden of Time" (1962), embodies several ideas which are at the heart of this study. One is the desire shared by every human being,

at least occasionally, for a cessation of the flow of time, for an end to events and change. From this desire evolves the fantasy of control over this flow, symbolized by Ballard in the power of the crystal flowers, which can move people and events backward in time or hold them forever outside of time. The dark side of this fantasy of power is our awareness that we are helpless in the grip of time. Ballard's vision of apocalypse, of an end of things, is concretized in the inexorable advance of "the ceaseless tide"² of the rabble army drawing ever nearer and finally overwhelming the timeless existence of the villa. The end occurs only after time has resumed its flow: outside of time, there is no apocalypse.

"The Garden of Time" is only one of the countless number of literary fictions which exist as sense-making constructs, in Frank Kermode's terms, to confront various problems and questions about the nature of time. All narrative fictions concerned with time necessarily make use of the religious, philosophical and/or scientific systems available to them at the time of their creation. This is true whether a given narrative approaches time as a thematic or a structural concern.

In this way, Tennyson's Idylls of the King (1842-1885), which states in Victorian terms the hope of a return of the King/Hero and the regeneration of a decadent kingdom, is as much a product of the nineteenth century as is Dickens's Bleak House (1852), which develops with the linear logic of scientific determinism. While the former reveals a cyclical approach to history, the latter work epitomizes the cause-

and-effect chronology of Newton's mechanical universe.

It is in the nineteenth and twentieth centuries, in fact, that the convergence and simultaneous expression of so many differing approaches to time have appeared in literature. This is not surprising when one considers that both these centuries have been described as "time-obsessed."³ "The Garden of Time" is one treatment of our desire to control time and our inability to achieve that desire, as effective in its own way as Poe's "The Masque of the Red Death" (1842) or Wilde's The Picture of Dorian Gray (1890). In the same vein, Bram Stoker's Dracula (1897) is about the achievement of a kind of immortality, although the price is the loss of one's humanity. Sartre's Huis Clos (1944) grants eternity to its characters, but the result is hell, not heaven.

The desire for stasis, the fantasy of control over time's movements and the apprehension that the end will arrive in spite of all our efforts to forestall it in whatever guise it appears, be it marauding army or Red Death -- these ideas are inextricably bound together by our consciousness of time, the time in which we live and in which we shall die. Religions, philosophical systems and scientific theories have all been formulated with some impulse toward weaving our hopes and fears about time into meaningful patterns which will help us to come to terms with "the destructive power of Time."⁴

On the individual level, one reaction to the fear of time has been described by Joost A.M. Meerloo in terms which recall not only Ballard's story but also the "antihistorical"

attitudes of those archaic cultures whose efforts to transcend temporal experience are the subject of Mircea Eliade's study, The Myth of the Eternal Return. In this instance, Meerloo is in fact describing a reaction common to psychiatric patients:

In their questions on the physics of time they express only a great yearning for timelessness, for a nirvana state without anxiety or fear, for a haven without the need to anticipate death and catastrophe.

S.G.F. Brandon, in History, Time and Deity, goes so far as to proclaim "the defeat or avoidance of Time's process of decay and death" to be the prime motive underlying all major cosmological systems, from primitive cultures to the present.⁶ From this point of view, the 'fictional' nature of all cosmologies is obvious; they exist as products of the human imagination and intellect. Even scientific systems share this artificiality to some extent, although they lack the overt transcendental quality of the religious systems.

In their study of the psychological and sociological implications of temporal perception, Thomas J. Cottle and Stephen L. Klineberg draw the following conclusions:

Time is experienced only through the changes that occur within it, changes that are both repetitive and progressive. . . . Is time, then, essentially a repetitive, cyclical and alternating phenomenon; or is it, rather, progressive, linear and unidirectional? The answer is not to be found in the realities of human experience, but in the cultural symbols and constructs through which all such experience is construed.

As Cottle and Klineberg indicate, most major theological, philosophical, historical and scientific cosmologies are

"cultural symbols and constructs" which can be divided according to diametrically opposed views of the nature of time: those that postulate time as a cyclical phenomenon, thus avoiding, if not human, at least universal apocalypse, and those that describe a linear cosmology, espousing the certainty of the end, both on the individual and on the universal levels. Both these viewpoints were developed long before Relativity theory introduced its far more complex definitions, and both are still popular today.

In literature, W.B. Yeats seems to combine both the cyclical and the linear in his own personal vision of the movements of history as "the widening gyre," a spiral whose "centre cannot hold," described in "The Second Coming" (1920). However, most systems espouse one or the other perspective, based upon varying experiences of temporal phenomena. What these systems all have in common is the belief that there is a single, indivisible time moving from past to future.

Broadly speaking, cyclical cosmologies are the products of primitive and Eastern cultures, while linear systems were developed in modern and Western cultures, influenced by their affinity to Judeo-Christianity. This is a useful distinction insofar as the focus of this study is upon the more recent Anglo-American world-views, but it should be noted that the late nineteenth and early twentieth centuries saw a resurgence of cyclical historical theories, such as those of Friedrich Nietzsche and Oswald Spengler. As early as 1725, G.B. Vico, in his Scienza Nuova, propounded a historical theory of the

rise and fall of civilizations that was echoed in the cyclical historicisms of the next two centuries.⁸ Some of the implications of this resurgence will be discussed later in this chapter.

To modern Western man, any real arrest of the temporal process can never be achieved except in the pages of fiction and perhaps in the fantasies of psychotics. Appropriately enough, there is a distinctly disturbed flavor in much of Ballard's work which reflects this, as, for example, in "The Terminal Beach" (1954), The Crystal World (1966) and "The Overloaded Man" (1977). On the other hand, there have always been societies and cultures which have denied the validity of time's advance and held to a static cosmology, either through an outright denial of the reality of time or, more usually, through the proposition that historical events are part of a cyclical process.

Eastern systems such as Buddhism and Jainism deny "the absolute reality of time, [seeing] it as the deminsion of a lower phenomenal order."⁹ The goal of these systems is nirvana, a state outside of time and the 'illusory' events of the phenomenal world. This whole attitude is essentially passive and contemplative, obviously at variance with the Western ideals of activity and productivity. Western man seems incapable of escaping into such patterns of thought, as Jorge Luis Borges regretfully concludes in "A New Refutation of Time:"

denying temporal succession, denying the self,

denying the astronomical universe are apparent desperations and secret consolations. Our destiny . . . is not frightful by being unreal; it is frightful because it is irreversible and ironclad. Time is the substance I am made of. . . . The world, unfortunately, is real. . . .¹⁰

Time is real and will never stand still except "in illo tempore," the myth-time separate from human time. This may account, in part, for the myth-like flavor of Ballard's "The Garden of Time," which resembles a mirror shattered into fragments at the death of the last time flower. This is the same frozen myth-time which is shattered for Tennyson's Lady of Shalott: when love enters her reality, her "mirror crack'd from side to side" and she dies, fully human and therefore subject to time's dominion.¹¹ Time, in its aspect of historical events, rushes in and overwhelms all our efforts to achieve eternal stasis, both in literature and in the world of human experience.

Cyclical cosmologies, according to Mircea Eliade, were intrinsic to the ancient cultures of Asia, Europe and America and are still espoused by primitive and Eastern cultures today. Eliade discusses "archaic man's refusal to accept himself as a historical being, his refusal to grant value to memory and hence to unusual events . . . that in fact [constitute] concrete duration." Such cultures attempt the "abolition of time through the imitation of archetypes and the repetition of paradigmatic gestures" in the belief that the ritual re-enactment of ancient myths will allow them to enter myth-time, that which Eliade terms "illud tempus," "when the

ritual was performed for the first time by a god, an ancestor, or a hero."¹² Brandon points out the primitive logic of these re-enactments: "imitative action . . . will reproduce that which it imitates, thus defeating or transcending the all too obvious logic of Time."¹³ This, of course, is also the impulse of Christian ritual and forms part of the framework of Philip K. Dick's curious philosophical science-fiction novel, Valis (1981). Dick's characters re-enact a Catholic Mass and his protagonist comes to the realization that "time has been overcome." Appropriately, Dick has earlier referred this idea back to the work of Mircea Eliade.¹⁴

The purpose of these antihistorical re-enactments is a regeneration of time itself, a belief in "eternal return."¹⁵ These rituals, therefore, result from a belief in the essentially cyclical nature of time. Eliade maintains,

The eternal return reveals an ontology uncontaminated by time and becoming. Just as the Greeks, in their myths of eternal return, sought to satisfy their thirst for the 'ontic' and the static . . . even so the primitive, by conferring a cyclic direction upon time, annuls its irreversibility. Everything begins over again at its commencement every instant.¹⁶ The past is but a prefiguration of the present.

In other words, if time will not stand still, one at least has the comfort of its endless repetition and the human race, if not the individual, achieves immortality of a kind.

With the spread of Judaism and then Christianity, Western consciousness developed a cosmology which was linear, progressive and directed toward apocalypse, the end of time; salvation will occur in time and in the future. Eliade terms

this Christian time "a Messianic illud tempus." A belief in the Judeo-Christian universe is a repudiation of both stasis and cyclical repetition. Time is a teleological construct, directed by the hand of God and for his end. "The final catastrophe will put an end to history, hence will restore man to eternity and beauty."¹⁷

The prevalence of the apocalyptic mode in Western literature can certainly be attributed, at least in part, to the influence of the Judeo-Christian tradition. One reason for the continuing popularity of these apocalyptic fictions, whether hopeful or apprehensive, is that they enable us to "project ourselves . . . past the End, so as to see the structure whole, a thing we cannot do from our spot of time in the middle."¹⁸

In its own way, the Judeo-Christian evaluation of time and of both the purpose and finality of its end is as anti-historical as are any of the static or cyclical views of time; it too looks forward to a transcendent reality outside of time.¹⁹ Like other cosmological fictions designed to give purpose and meaning to our lives in a temporal universe, Judeo-Christianity has become elevated to the status of myth, which, as Kermode defines it, provides a "total and adequate explanation of things as they are."²⁰

Developing parallel to the Judeo-Christian cosmology from the seventeenth to the nineteenth centuries, the myth of Progress eventually displaced the Christian God as the prime mover of events and historical processes. Under this quasi-

historical system, "temporal progression became identified with human progression. And time called for ceaseless striving, activity, and production."²¹ This is a typically Western position, linear in structure, which for the first time denied the transcendent aspect of reality: salvation will occur in time and man himself is both the means and the end of his own salvation. This myth of Progress, supported and advanced in the nineteenth century by the work of Charles Darwin and the evolutionists,²² implied also a belief in the perfectibility of man, perfectibility within the confines of the phenomenal world.

Early science-fiction works such as Edward Bellamy's Looking Backward, 2000-1887 (1888) and William Harben's "In the Year Ten Thousand" (1892) gave literary form to this faith in the ultimate triumph of science to create a heaven on earth. As Jerome Buckley explains, "with so bright a substitute for the providential view of time and the future, science itself could become an object of worship."²³ This belief in the historical progress of man is essentially a linear one, viewed as the natural outcome of evolution. Buckley explains how the Newtonian image of the mechanical universe was replaced during the nineteenth century by the ~~image~~ image of an organic universe evolving in time:

Evolution rather than revolution seemed the true way of history. Revolution, the upsetting of a fixed order, presupposed a clash of stable entities and essentially a static view of human nature; by the law of the eternal return, the spin of fortune's wheel, the same forces would continually recur. Evolution, on the other hand, meant an organic

growth of all things in time, a development in which the past, although never repeating itself, would persist through each successive modification. The past accordingly became the object of solicitous regard; the present could not be cut off from its history; civilization was a branching plant which would droop and wither if its roots were neglected and dislodged. The organic image, applied both to nature and to human culture, replaced the standard eighteenth century mechanistic analogy; the world was no longer a machine operating on a set cycle, but a living body fulfilling itself in constant adaptation to new conditions.

This idea of time encouraged the nineteenth century to elevate a cosmological belief in the steady march of time to a status approaching that of myth, a myth which denied the inevitability of any apocalypse.

Newton had postulated an absolute time which existed above and beyond the time of human experience, somewhat like the Platonic Ideal Forms. In 1687, Newton wrote that "absolute, true and mathematical time, of itself, and from its own nature, flows equally without relation to anything external."²⁵ Newton's cosmology was basically a Christian one because, as Lincoln Barnett writes, "while he could not support this conviction by a scientific argument, he nevertheless clung to it on theological grounds."²⁶ Newtonian physics was also largely responsible for the nineteenth century's belief in the power of science. "There seemed to be no process of nature which could not be discovered in terms of ordinary experience, illustrated by a concrete model or predicted by Newton's amazingly accurate laws of mechanics."²⁷

In mainstream literature, this faith in the predictive ability of science was one cause of the emergence of the real-

ist novel as a literary genre. Realism takes its impetus from a confidence, in Northrop Frye's words, "about the adequacy of words to represent external reality" and proceeds from a sense of logic, causality and continuity among the events which it depicts.²⁸ Robert Scholes and Eric Rabkin also attribute the extrapolative kind of science fiction written by H.G. Wells to this faith that the scientific method could explain the universe.²⁹ If nineteenth-century man could not escape or control time's flow, he could interpret that flow of events as History, often equating progress with improvement, secure that the real world and its patterns of phenomena could all be defined and understood, all of nature being "a lawful process in space and time."³⁰

The nineteenth century saw the development of several very influential historical systems, not all of which were linear in orientation. In Kermode's terms, these systems were attempts at "the imposition of a plot on time, as a substitute for myth. . . ." ³¹ Stephen Kern writes of "the overbearing deterministic formal systems of nineteenth-century historicism [which] produced broad general laws of history." The systems of Comte, Hegel, Darwin, Spencer, Spengler and Marx developed at least in part as a reaction to the loss of faith in the Judeo-Christian system. "If man could no longer believe he had a place in eternity, he could perhaps find one in the movement of history."³² Because of the greater fragmentation of the modern world and its ambivalence toward evolution and technology, historical theory today tends to be

pluralistic in nature, with no one 'law' considered to be the sole driving force behind historical developments.³³

While, according to Jerome Buckley, the nineteenth century was "the golden age of the ideologists,"³⁴ the twentieth century tends to be more cautious.

The nineteenth century moved away from a trust in God as the creator of the significance of time, to an optimistic trust in time itself, in its absolute, linear march toward improvement and an ever-better future through the advancement of science. One of the reactions to this religion of time was a resurgence of cyclical cosmologies, exemplified in the historical philosophies of Nietzsche, Danilewski and Toynbee. As belief in the efficacy of science and the certainty of progress waned in the latter half of the century, these systems offered a sense of comfort and security which was lacking in the more pessimistic linear projections of devolution and entropy. These latter ideas undermined the security of the nineteenth-century world-view to such an extent that the final years of the century, inevitably an apprehensive period, were haunted by the spectres of decadence and apocalypse.

Hans Meyerhoff assesses the cyclical historicisms as "projection/s into history, or the universe, of certain elements believed to be directly given in human experience," that is, the experience of the cycles of nature. It is this experience of natural cycles which also influenced the earliest cyclical cosmologies. Meyerhoff explains that cyclical theories are patterned "after the cycle of birth, growth, de-

cline, and death, according to which we experience the direction of time in the organic world."³⁵ This is especially clear in Spengler's system, which is based upon the seasonal cycle.³⁶ One of the aspects inherent in cyclical cosmologies, is the comfort and security of repetition; unlike linear cosmologies, cyclical theories are a "neutral response" to time's flow.³⁷ Meyerhoff also adds that, on the literary level,

the cyclical theory of time is usually presented in conjunction with mythical themes. . . . Myths are chosen as literary symbols for two reasons: to suggest, within a secular setting, a timeless perspective of looking upon the human situation; and to convey a sense of continuity and identification with mankind in general.³⁸

Thus, in Idylls of the King, Tennyson's apprehension of the decline of Victorian England was metamorphosed into the decline of Camelot, embodying his hope for the return of the King/Heró and the regeneration of the fallen time. The promise of rebirth and its relationship to natural cycles is obvious in the final line of "The Passing of Arthur:" "And the new sun rose bringing the new year."³⁹

Ultimately it was the dual assault of evolutionary theory and the second law of thermodynamics that influenced the darker side of the nineteenth-century world-view, although the true impact of these ideas was not felt until the end of the century, when the pace of life was becoming frantic and technology had not achieved the promised paradise. At the same time that evolution seemed to support the belief in progress, it also implied "that the biological constitution of man was open to perpetual change and instability."⁴⁰ Evolu-

tion may transfer itself into devolution. It is the idea of devolution which underlies H.G. Wells's The Time Machine (1895), in which the subhuman Eloi and Morlocks are all that is left of mankind.

The second law of thermodynamics raised once again the spectre of apocalypse, without any comfort of spiritual salvation at this end of time. In 1852, in an essay entitled "On a Universal Tendency in Nature to the Dissipation of Mechanical Energy," William Thompson, Lord Kelvin, wrote that "within a finite period of time past the earth must have been, and within a finite period of time to come the earth must again be, unfit for the habitation of man as at present constituted, unless operations have been, or are to be performed, which are impossible under the laws to which the known operations going on at present in the material world are subject."⁴¹ It is interesting to note that, of all the laws of classical Newtonian physics, it is the second law of thermodynamics which has survived the onslaught of Relativity theory.⁴² According to Patrick Parrinder, Kelvin's law "posited an irreversible process of entropy, or what became known as the 'running down universe.'" He rightly calls the apprehension of devolution and the awareness of entropy "paradoxes at the heart of the scientific outlook" of the nineteenth century.⁴³ Ironically, perhaps, it is the fact of entropy which promises eternal stasis, while at the same time indicating the direction of time:

Time itself will come to an end. For entropy

points the direction of time. Entropy is the measure of randomness. When all systems and order in the universe have vanished, when randomness is at its maximum, and entropy cannot be increased, when there is no longer any sequence of cause and effect, in short when the universe has run down, there will be no direction to time -- there will be no time. And there is no way to avoid this destiny.

Literal apocalypse will occur in the form of the 'heat-death' of the universe. This is the vision which Wells so powerfully prophesies at the climax of The Time Machine. Over the years, entropy and the running-down universe have provided thematic material for countless literary works. Anna Kavan's Ice (1967) describes a world slowly being destroyed by the advance of glaciers so that "the whole world was turning toward death."⁴⁵ Pamela A. Zoline's "The Heat-Death of the Universe" (1968) uses the increase of entropy as a metaphor for the psychological breakdown of a California housewife. William Golding's Darkness Visible (1979) examines human violence and cruelty as the result of a world which is running down.⁴⁶ To scientists and artists alike, the apprehension of apocalypse is pervasive.

In its way, Relativity theory was an apocalyptic idea, announcing at the beginning of the twentieth century, in true millennial fashion, the death of one system of viewing the universe and the birth of another. While ideas of linear or cyclical chronology and the march of progress have by no means disappeared from modern consciousness, Relativity overlaps and overwhelms all previous scientific systems and has had a major influence upon the themes and structures of twentieth-

century creative expression. It is perhaps no coincidence that Henri Bergson's Creative Evolution (1907) appeared only two years after Einstein announced his Special Theory of Relativity. Bergson's philosophy of time as personal flux challenged the nineteenth-century ideal of a single, public, homogeneous time.⁴⁷ Stephen Kern explains that the late nineteenth century was ready "to affirm the reality of private time against that of a single public time and to define its nature as heterogeneous, fluid and reversible." He interprets Wilde's The Picture of Dorian Gray, for example, as "a sinister discordance between body time and public time."⁴⁸ It is private time which Marcel Proust and James Joyce delineate in their masterworks. Kafka felt himself trapped between private and public time when he wrote in 1922 that "the clocks are not in unison. . . . What else can happen but that the two worlds split apart? . . ." ⁴⁹

In all these works, there is the assurance, however, that public time is real time, or at least more real than the multiplicity of subjective, private times extolled in the arts. Relativity theory questions the reality of public time as well, relegating it also to the level of the subjective. According to Barnett, "Relativity tells us there is no such thing as a fixed interval of time independent of the system to which it is referred."⁵⁰ In other words, there are as many public times as there are frames of reference; our global public time is merely one of an infinity of possible times in the whole of the universe.

Time thus becomes a purely relative construct, with no existence apart from human perception.

Along with absolute space, Einstein discarded the concept of absolute time, of a steady universal flow of time, streaming from the infinite past to the infinite future. . . . /The/ sense of time, like sense of color, is a form of perception. Just as there is no such thing as color without an eye to discern it, so an instant or an hour or a day is nothing without an event to mark it. And just as space is simply a possible order of material objects, so time is simply a possible order of events.⁵¹

Perhaps the most distressing feature of the new theory is its remarkable distance from time as we experience it. Meyerhoff discusses this as the dichotomy between time in experience and time in nature (as science defines it).⁵² This split between how time appears to us, which was the basis of Bergson's definition, and how it is in reality, is one of the most fundamental problems created by modern science.

In mainstream literature, works which examined the relativity of point of view became more prevalent as a result of the new physics. Among the better known are William Faulkner's The Sound and The Fury (1929) and John Gardner's Grendel (1971). Also interesting are Tom Stoppard's Rosencrantz and Guildenstern Are Dead (1967), which focuses upon minor characters from Hamlet, and Jean Rhys's Wide Sargasso Sea (1966), which takes its inspiration from Jane Eyre, limiting itself to the point of view of the mad Mrs. Rochester.

Science fiction developed the concept of alternate and parallel worlds as paradigms of the multiple realities of Relativity, while stories of multiple time-tracks and branch-

ing time-lines have become a staple of modern SF. Some of these 'relatives' of the time-travel story will be examined in the following chapter.

Attempting to describe the microcosmic world in the same way as Relativity seeks to define the macrocosmic universe, Quantum theory was devised by Max Planck in 1900. In 1927, as a result of his work in Quantum physics, Werner Heisenberg elucidated his Principle of Indeterminacy, which shook

two pillars of the old science, causality and determinism. For by dealing in terms of statistics and probabilities it abandons all idea that nature exhibits an inexorable sequence of cause and effect between individual happenings. And by its admission of margins of uncertainty, it yields up the ancient hope that science, given the present state and velocity of every material body in the universe, can forecast the history of the universe for all time.

There is clearly a vast difference between the universe of Newton and the universe of Einstein: one is linear, the other is non-linear, because of the relativity of all space-time frames of reference; one is deterministic, the other, while acknowledging universal systems and structures, is unpredictable; one is absolute and indivisible, the other is relative and multiplex; one is objective, the other is subjective. Both, however, admit the force of entropy and the certainty of change. Perhaps the most far-reaching difference is that the mathematics of Relativity and Quantum theory describe a universe whose real nature is no longer manifest through human perception. We tend to experience time as uni-directional and events as sequences of cause-and-

effect phenomena. Relativity assures us that these perceptions are merely perceptions and our experience of time subjective and relative. As Stephen Kern so aptly states, "Einstein . . . /has/ filled the universe with clocks each telling a different correct time."⁵⁴ Public time now has no more objective reality than private time and causality is not necessarily so.

The influence on the arts of these new approaches to time and the new uncertainty about the powers of science has been tremendous. Both structurally and thematically, Einstein opened up possibilities undreamed of in the nineteenth century. Impressionism, Cubism and Futurism, the 'modern novel,' the dissonances of Stravinsky -- all owe their impetus to the new forms and themes made available by the new science, which Barnett terms "a major philosophical system."⁵⁵

In mainstream literature, the most obvious structural development has been the movement away from the logical determinism of the realist novel toward the subjectivity and relativity of the modern novel. Andrew Gordon lists some of the results of this development:

an entire range of literary techniques for dealing with time /has been/ pioneered by twentieth-century authors such as Proust, Conrad, Joyce, Eliot and Woolf: present tense, stream-of-consciousness to indicate the disjunction of memory and mental time; dense literary allusion to create the sense of the simultaneity of historically separated events; and abrupt shifts in point-of-view and fragmentation of narrative chronology to suggest the relativity of our interpretation of events and the disjunctive nature of time.⁵⁶

Joseph Conrad's method, for example, "was to isolate a

particular moment and hold it up for extended scrutiny."⁵⁷

In Joseph Conrad: A Personal Reminiscence, Ford Madox Ford writes that he and Conrad considered themselves Impressionists: "We accepted the name because . . . we saw that life did not narrate, but made impressions on our brains. We in turn, if we wished to produce on you an effect of life, must not narrate but render . . . impressions."⁵⁸

For the most part, literary structures, like cosmologies, tend to polarize toward either the linear or the cyclical. Exceptions to this are the more extreme of the experimental forms, such as Alain Robbe-Grillet's 'nouveau roman,' which explore both the simultaneity and relativity of experience. As mentioned earlier, linear structures usually indicate an evaluation of time which is either positive or negative. Cyclical structures are more often value-neutral and comforting, but, in the twentieth century, they have also come to be associated with the mindless repetition of the Absurd, as demonstrated in Eugène Ionesco's The Bald Soprano (1950) and Samuel Beckett's Waiting for Godot (1953). Just as linear movement may imply either progress or degeneration, so cycles may be either comforting or absurd, secure or futile.

Radical structural experiments are limited by our need for logical form, both in art and in life. Just as the systems of religion, philosophy and science are attempts to impose order on the chaos and randomness of our universal reality, so artistic fictions are attempts at sense-making on the imaginative level. Frank Kermode notes that "there is an ir-

reducible minimum of geometry -- of humanly needed shape or structure -- which limits our ability to accept the mimesis of contingency."⁵⁹ This requirement for some kind of shape ultimately places the onus upon content rather than form when narrative fiction attempts to interpret many modern aspects of the nature of time. The interpretation of ideas such as the increase of entropy, multiple realities, or randomness within the structure of a work can rarely be achieved except at the expense of the very identity of narrative fiction as such. Shlomith Rimmon-Kenan, who cites Beckett's Watt (1944) as one such attempt, writes that "there are some modern attempts to liberate narrative fiction [from the linear nature of words], but the liberation is never complete because a complete one, if possible, will destroy intelligibility."⁶⁰ Modern physics is unable to describe reality in ways which can be experienced 'humanly,' nor can narrative fiction completely succeed at rendering that description from within its structure except at the risk of itself becoming inhuman.

Science fiction as a genre has tended to remain structurally conservative, seemingly more comfortable with the forms of the nineteenth century. Its concern with time is demonstrated thematically rather than formally, so that one is frequently presented with ideas influenced by Einstein, embedded in a structure which is Newtonian in design. Gary Wolfe points out that "experiments with narrative time sequence are practically unheard of in science fiction, yet the problems

involved with time as an isolated concept are a staple of science fiction writing from Wells to Asimov."⁶¹

The truly experimental work in science fiction, most of it a result of the 'new wave' surge of the nineteen-sixties, has proven memorable if for no other reason than its relative scarcity. Works such as Brian Aldiss's Report on Probability A (1968) and Barefoot in the Head (1969) are attempts to incorporate the narrative techniques of the modern novel into a science-fictional framework. Samuel R. Delany's Dhalgren (1974) is difficult, complex and extremely lengthy for an SF novel (879 pages). These works are worth reading because they are such anomalies in a field which, as a rule, avoids such radical displays of stylistic and structural novelty. In spite of what might be considered structural shortcomings, Andrew Gordon points out that "ever since Wells, time-travel stories have been a good index to changing twentieth-century attitudes toward the nature of time and our hopes and fears about past, present, and future."⁶²

The following chapter of this study will trace the development of the time-travel story from its inception in the nineteenth century to the present, indicating the various approaches to time which have appeared over this period. The final chapters, which analyze four works of time travel, attempt to demonstrate how the shift from the Newtonian to the Einsteinian universe has affected this central motif of the science-fiction genre.

Notes

¹J.G. Ballard, "The Garden of Time," in The Four-Dimensional Nightmare (1963; rpt. Markham, Ontario: Penguin Books, 1977), p. 123.

²"The Garden of Time," p. 129.

³A.A. Mendilow, Time and the Novel (New York: Peter Nevill, 1952), p. 6. See also Jerome H. Buckley, The Triumph of Time: A Study of the Victorian Concepts of Time, History, Progress and Decadence (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1966), pp. 1-2.

⁴S.G.F. Brandon, History, Time and Deity: A Historical and Comparative Study of the Conception of Time in Religious Thought and Practice (New York: Barnes and Noble, 1965), p. 207.

⁵Joost A.M. Meerloo, "The Time Sense in Psychiatry," in The Voices of Time: A Cooperative Survey of Man's View of Time as Expressed by the Sciences and by the Humanities, ed. J.T. Fraser (New York: George Braziller, 1966), p. 236.

⁶History, Time and Deity, p. 206.

⁷Thomas J. Cottle and Stephen L. Klineberg, The Present of Things Future: Explorations of Time in Human Experience (New York: The Free Press, 1974), p. 164.

⁸J.L. Russell, "Time in Christian Thought," in The Voices of Time, p. 92.

⁹Brandon, History, Time and Deity, p. 207.

¹⁰Jorge Luis Borges, "A New Refutation of Time," trans. James E. Irby, in The Discontinuous Universe: Selected Writings in Contemporary Consciousness, ed. Sallie Sears and Georgianna W. Lord (New York: Basic Books, 1972), p. 222.

¹¹Alfred, Lord Tennyson, "The Lady of Shalott," in Poems of Tennyson, ed. Jerome H. Buckley (Boston: Houghton Mifflin, 1958), p. 26.

¹²Mircea Eliade, The Myth of the Eternal Return, or Cosmos and History, trans. Willard R. Trask (Paris, 1949; rpt.

Princeton, N.J.: Princeton University Press, 1974), pp. 3, 85, 35, 29, 21.

- ¹³History, Time and Deity, p. 30.
- ¹⁴Philip K. Dick, Valis (New York: Bantam Books, 1981), pp. 194, 110.
- ¹⁵The Myth of the Eternal Return, pp. 88-89.
- ¹⁶The Myth of the Eternal Return, p. 89.
- ¹⁷The Myth of the Eternal Return, pp. 106, 124.
- ¹⁸Frank Kermode, The Sense of an Ending: Studies in the Theory of Fiction (1966; rpt. New York: Oxford University Press, 1975), p. 8.
- ¹⁹Eliade, The Myth of the Eternal Return, p. 112.
- ²⁰The Sense of an Ending, p. 39.
- ²¹Hans Meyerhoff, Time in Literature (Berkeley: University of California Press, 1955), p. 69.
- ²²Eliade, The Myth of the Eternal Return, p. 146.
- ²³The Triumph of Time, p. 47.
- ²⁴The Triumph of Time, p. 15.
- ²⁵Cited by Stephen Kern, The Culture of Time and Space, 1880-1918 (Cambridge, Mass.: Harvard University Press, 1983), p. 11.
- ²⁶Lincoln Barnett, The Universe and Dr. Einstein (2nd. rev. ed. 1957; rpt. New York: Bantam Books, 1968), p. 40.
- ²⁷Barnett, The Universe and Dr. Einstein, p. 15.
- ²⁸Northrop Frye, The Secular Scripture: A Study of the Structure of Romance (Cambridge, Mass.: Harvard University Press, 1976), pp. 46, 50.
- ²⁹Robert Scholes and Eric S. Rabkin, Science Fiction: History, Science, Vision (New York: Oxford University Press, 1977), p. 121.
- ³⁰Werner Heisenberg, "The Representation of Nature in Contemporary Physics," trans. O.T. Benfey, in The Discontinuous Universe, p. 125.
- ³¹The Sense of an Ending, p. 43.

- ³² The Culture of Time and Space, 1880-1918, pp. 63, 51.
- ³³ Meyerhoff, Time in Literature, pp. 96-97.
- ³⁴ The Triumph of Time, p. 31.
- ³⁵ Time in Literature, p. 79.
- ³⁶ Buckley, The Triumph of Time, p. 83.
- ³⁷ Time in Literature, p. 79.
- ³⁸ Time in Literature, p. 80.
- ³⁹ Alfred, Lord Tennyson, Idylls of the King (New York: Allyn and Bacon, 1955), p. 156.
- ⁴⁰ Patrick Parrinder, "Science Fiction and the Scientific World-View," in Science Fiction: A Critical Guide, ed. Parrinder (New York: Longman, 1979), p. 69.
- ⁴¹ Cited by Kern, The Culture of Time and Space, 1880-1918, p. 104.
- ⁴² Barnett, The Universe and Dr. Einstein, p. 103.
- ⁴³ "Science Fiction and the Scientific World-View," p. 69.
- ⁴⁴ Barnett, The Universe and Dr. Einstein, p. 103.
- ⁴⁵ Anna Kavan, Ice (1967; rpt. London: Pan Books, 1973), p. 115.
- ⁴⁶ Andrew Gordon draws attention to the importance of the concept of entropy in the works of Thomas Pynchon: "'Entropy' (1960), V (1963), The Crying of Lot 49 (1966), and Gravity's Rainbow (1973) use entropy as a symbol of the fragmentation and decay of modern civilization and of the hopeless feeling that it is not just a local energy crisis but that the universe itself is running down." See "Silverberg's Time Machine," Extrapolation, 23 (Winter 1982), 354.
- ⁴⁷ Jerome Buckley makes the point that history is the record of public time. See The Triumph of Time, p. 5.
- ⁴⁸ The Culture of Time and Space, 1880-1918, pp. 34, 16.
- ⁴⁹ Franz Kafka, The Diaries of Franz Kafka, 1914-1923, trans. Martin Greenberg, ed. Max Brod (New York: Schocken Books, 1949), p. 202.
- ⁵⁰ The Universe and Dr. Einstein, p. 48.

- 51 Barnett, The Universe and Dr. Einstein, pp. 46-47.
- 52 Time in Literature, p. 9.
- 53 Barnett, The Universe and Dr. Einstein, p. 34.
- 54 The Culture of Time and Space, 1880-1918, p. 19.
- 55 Barnett, The Universe and Dr. Einstein, p. 12.
- 56 "Silverberg's Time Machine," 348-349.
- 57 Kern, The Culture of Time and Space, 1880-1918, p. 30.
- 58 Ford Madox Ford, Joseph Conrad: A Personal Reminiscence (London: Duckworth, 1924), p. 182.
- 59 The Sense of an Ending, p. 132.
- 60 Shlomith Rimmon-Kenan, Narrative Fiction: Contemporary Poetics (New York: Methuen, 1983), p. 45.
- 61 Gary K. Wolfe, "The Limits of Science Fiction," Extrapolation, 14 (Winter 1972), 34.
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Chapter Two

Fictions of Time: The Development of the Time-Travel Motif

"The end of time was certainly sizeable enough as a problem; he would never find a bigger, and he was thankful for that. . . ."
(James Blish, The Triumph of Time)

Stanislaw Lem, possibly the most respected writer working in the genre today, includes time travel in his brief list of major SF motifs.¹ Gary Wolfe lists the time machine among the basic 'icons' of science fiction, as a convention containing within itself "a vast potential for working out themes and narratives. . . ."²

Time travel may be viewed as a literary device expressive of many of our hopes and fears related to temporal existence. It is also a literary indication of the shift in world-view which generated the rise of science fiction as a genre. Darko Suvin suggests that the "central watershed" in the development of SF "is around 1800, when space loses its monopoly upon the location of estrangement and the alternative horizons shift from space to time. . . ." Suvin terms this "the shift to anticipation." He also points out that SF requires strategies for "reality displacement, . . . catalyzer/s/ transforming the author's environment to a new locus. . . ."³ In this sense, time travel is a useful mode of displacement from the SF

author's empirical present to his science-fictional future or past. In the widest sense, of course, any story which projects its readers into the past or future is a work of time travel, in that it "makes the readers themselves the time travelers, shifting them, as soon as they recognize the scene, into an unfamiliar time."⁴ From this point of view, Robert Graves's I, Claudius (1934) is as much concerned with time travel as is The Time Machine.

Not surprisingly, time travel as a science-fiction motif appeared almost at the inception of the genre itself and is still the subject of a great many SF works today. Given the time-obsession of technological cultures, time travel is an almost inevitable offshoot of literature in a scientific age. Both the 1980 and 1982 Nebula awards for the year's best SF novel went to time-travel narratives, Gregory Benford's Timescape and Michael Bishop's No Enemy But Time. The continuing popularity of the motif is also demonstrated in John Varley's 1983 novel, Millenium. Almost every chapter title is borrowed from earlier time-travel works, such as Ray Bradbury's "A Sound of Thunder" (1952), Mack Reynolds's "Compounded Interest" (1956) and, of course, Wells's The Time Machine.⁵ An interesting exception to this rule is the chapter titled "As Time Goes By," named after the song which became famous in the film Casablanca.

Unlike the spaceship, the time machine has very little chance of being realized in the future, no matter how distant. One of the major scientific objections is that it con-

travenes the basic laws of cause and effect.⁶ On the philosophical level, it creates "the contradiction that at each different moment we occupy a different moment from the one which we are then occupying -- that five minutes from now, for example, [we] may be a hundred years from now."⁷ In spite of its seeming impossibility, there does exist at least one carefully documented case of apparent time travel. In 1901, two Oxford teachers, C. Anne E. Moberly and Eliana F. Jourdain, claimed to have been transported back to 1789, while on a visit to Versailles. The account of their adventure appeared in the National Geographic Magazine (January 1925) and was prefaced by J.W. Dunne.⁸ Dunne himself was a believer in a kind of psychic time travel, which he elucidates in An Experiment With Time (1927). His initial interest was prompted by his experiences with dreams and instances of déjà vu. Whether or not Moberly and Jourdain actually did travel in time, such experiences are considered scientifically impossible. This, however, does not prevent the inclusion of the motif within the SF genre. As Lem asserts, "even when the happenings it describes are totally impossible, an SF work may still point out meaningful, indeed rational, problems. . . ."⁹ It is worth noting that Quantum theory seems to indicate that temporal processes are reversible, at least at the level of the microcosmic universe. Indeed, Robert Scholes and Eric S. Rabkin assert that "although science fiction has tended always to adopt the concerns and motifs of mainstream fiction, in the questioning of causation through the motif of time

travel, it has established a new narrative possibility which has become the common property of our culture."¹⁰

Lem, however, criticizes what he sees as the tendency in many time-travel stories to indulge in games-playing, "as when impossible time-travel machines are used to point out impossible time-travel paradoxes."¹¹ On the other hand, even Lem admits to the entertainment value of such works and, frequently, even the most paradox-ridden story contains something of significance beyond its clever plotting. Possibly the best known example of the time-travel paradox story is Robert Heinlein's "All You Zombies--" (1959). The premise of this miniature tour de force is that the protagonist, combining time travel with sex changes, is his own father and mother; as such, he is caught in an endless repetition of journeys into his own past to create himself, in order to journey into his past to create himself, in order to journey into the past, etc. Heinlein's story exemplifies the absurdity and futility of cyclical time, in which characters are trapped in pointless circles.

Lem himself, that severest of critics, has produced several very amusing parodies of the time-travel paradox story, notably the Seventh and Twentieth Voyages of his Sinbad-like hero, Ijon Tichy, narrator of The Star Diaries (1971). In the Seventh Voyage, space travel through galactic time loops results in the hero's ship becoming crammed with duplicate versions of himself, from both the past and the future. In the Twentieth Voyage, as General Director of THEOHIPPPIP --

Teleotelechronistic-Historical Engineering to Optimize the Hyperputerized Implementation of Paleological Programming and Interplanetary Planning -- Tichy is responsible for the creation of the solar system as we know it today. Larry Niven, who also writes science fiction, suggests that the paradox-building which the time-travel story inevitably invites is one of its more thoroughly enjoyable aspects.¹²

It is the ability of the time-travel story to seriously address the problems of time which is the major concern of this study. Unlike mainstream fiction, SF can concretize certain elements of human experience in ways that enable us to explore them more directly. In this respect, the time-travel story becomes a cognitive tool, more often than not "offering us a world clearly discontinuous from the one we know, yet /returning/ to confront the known world in some cognitive way."¹³ The potential of science fiction as a cognitive literature has been recognized by all its major critics; it is the failure of this potential which impels Lem, for example, to attack the games-playing in so many time-travel stories.¹⁴

The time-travel story is a 'fiction,' then, which directly examines the various 'realities' of time as we have come to know them. It tests these realities, draws implications from them and evaluates them. Robert Scholes, echoing Frank Kermode, states that

All writing, all composition, is construction. We do not imitate the world, we construct versions of it. There is no mimesis, only poesis. No record-

ing. Only constructing.¹⁵

The science-fiction story which seriously examines the nature of time as both an experiential and a scientific reality is simply constructing models which, like those of mainstream literature, help us to consider these various realities.

Time travel is a science-fiction metaphor, designed to provide a more direct approach to the concept of time than is available in most mainstream fiction. Michael Moorcock, in his introduction to a collection of stories concerned with various aspects of time, writes that "speculation on the nature of time is as much a traditional literary obsession as it is a scientific one and it is perhaps because of this that the SF form has been used at its best in dealing with time -- from The Time Machine onwards."¹⁶

But Wells's novella, while the best known, is by no means the first time-travel story. The earliest may well be the anonymous "An Anachronism, or Missing One's Coach" (1838), in which a nineteenth-century man, falling into a "fault in the strata of time," is transported back into the eighth century and informs the Venerable Bede of the changes that have occurred over the last thousand years.¹⁷ Fritz Leiber considers Charles Dickens's A Christmas Carol (1843) "that prototype of all time-travel stories," envisioning an unchangeable past and an open-ended future.¹⁸ It should be noted, however, that the marked presence of the supernatural situates A Christmas Carol within the ranks of fantasy, not science fiction. Jan Pinkerton also suggests Edgar Allan

Poe's "A Tale of the Ragged Mountains" (1844) as involving a kind of time travel and Edward Everett Hale's "Hands Off" (1881) as being one of the earliest examples of backward time travel,¹⁹ although it is more obviously an early alternate-universe story.

Sam Moskowitz considers Edward Page Mitchell's "The Clock That Went Backward" (1881) to be the first story about a time machine.²⁰ Isaac Asimov agrees that this "is both the earliest time-machine story [the machine being the grandfather clock of the title] and the pioneer version of the time-paradox story."²¹ Mitchell's story is also a kind of precursor of works like Kurt Vonnegut, Jr.'s Slaughterhouse-Five (1969) and Robert Silverberg's "In Entropy's Jaws" (1971). Written well before Werner Heisenberg formulated the Principle of Indeterminacy in 1927, it raises questions about the inevitability of causal sequences. Mark Twain's A Connecticut Yankee in King Arthur's Court (1889), which will be discussed in more detail in the following chapter, is also a prototypical backward-in-time story. Through its exclusion, for the most part, of the supernatural and its concern with the results of technology, it merits consideration as science fiction rather than fantasy.

The last part of the nineteenth century produced two classics of time travel, which are philosophically opposed in their different reactions to the theories of evolution and the myth of progress. The first is Edward Bellamy's Looking Backward, 2000-1887 (1888) and the second, of course, is H.G.

Wells's The Time Machine (1895), which will also be examined more fully in the next chapter. It is interesting to note the 'eruption' of the time-travel story at the end of the nineteenth century. Scholes and Rabkin explain that "time travel was a motif whose time had come. At any rate, the motif achieved instant popularity with Wells's novel and became a conventional staple of science fiction."²²

Bellamy's work epitomizes the nineteenth-century American spirit of materialism, with its optimistic faith in progress and its utopian visions of the future of mankind.

H. Bruce Franklin names Bellamy "the most influential science-fiction writer of the nineteenth century: his classic work changed the consciousness of Americans more than any novel of the century except for Uncle Tom's Cabin."²³

Bellamy's golden future is in drastic contrast to Wells's late-Victorian vision of devolution and apocalypse. It follows that one can conclude much about our own contemporary consciousness from the fact that today Looking Backward is of academic interest only, while The Time Machine is still read as popular literature.

Andrew Gordon suggests that the Victorian atmosphere of rapid technological development, a kind of fin de siècle future shock, encouraged a feeling of displacement in time, that "the citizens of the most highly industrialized Western nations began to feel a disjunction with the past, as though they had been hurtled abruptly into the future."²⁴ Gordon speculates that this was a major factor in the growth of po-

pularity of the time-travel story. This feeling of displacement would also help to account for the continuing popularity of the motif, as the pace of modern life continues to accelerate, distancing us ever more rapidly from our own historical past. One corollary of this distancing seems to be a greater consciousness of the future. By the end of the nineteenth century, as Stephen Kern points out, science fiction "came into vogue on a grand scale," indicating that the future was becoming as real to this generation as the past had been for readers of the Gothic novel and the historical romance."²⁵

The works of Mark Twain, Bellamy and Wells each reflect some specific view of time and history, arising both from the individual personality of each writer and from the historical milieu in which he wrote. Mark Twain's loss of faith in the materialism of the American Gilded Age became a repudiation of the reality of the phenomenal world, an escape into the possibility, similar to some Eastern philosophies, that 'life is but a dream.' Bellamy's faith in progress became the creation of the brave new world of 2000 A.D. Wells's pessimistic vision of the ultimate outcome of the second law of thermodynamics admitted of no awakening from the final apocalypse. A Connecticut Yankee, Looking Backward and The Time Machine all reflect the deterministic nature of Newtonian time: Mark Twain's Hank Morgan is finally unable to affect sixth-century Britain or to escape his own doom; Bellamy's Dr. Leete explains the glorious future as "the result of a

process of industrial evolution which could not have terminated otherwise;"²⁶ Wells's *Time Traveller* is a helpless spectator confronted with the inevitable triumph of entropy.

Many early twentieth-century time-travel narratives share this fin de siècle apprehension of a determined, closed future time and most reflect the negative outlook of the end of the Victorian dream of progress. John W. Campbell, famous in the history of SF as the editor of Astounding Science Fiction (now Analog Science Fiction/Science Fact) from 1938 until his death in 1971, was one of the single greatest influences upon the development of science fiction in the American pulp magazines of the nineteen-thirties and -forties.

Writing as Don A. Stuart, he dramatized the decay and devolution of the universe in his twin stories, "Twilight" (1934) and "Night" (1935). His time travelers to the distant future discover the ultimate end of the human race -- only the machines live on. "When Earth is cold, and the Sun has died out, those machines will go on. When Earth begins to crack and break, those perfect, ceaseless machines will try to repair her --."²⁷ In the still more distant future, even these machines will run down: "Time himself was dying now, dying with the city and the planet and the universe he had killed."²⁸

Apocalyptic visions also appear frequently in SF works unrelated to time travel, although, as Mark Rose explains, the apocalyptic nature of SF is at least partly due to its concern with time:

As Frank Kermode says, we create fiction of endings

to give meaning to time, to transform chronos -- mere passing time -- into kairos, time invested with the meaning derived from its goal. Time without beginning or end, undifferentiated, boundless time without meaning, is ultimately inhuman time. And insofar as science fiction is committed to the humanization of time, it²⁹ naturally tends toward fictions of apocalypse.

E.M. Forster's classic story, "The Machine Stops" (1928), is one such apocalyptic vision which, although it portrays the inevitable destruction of a future dystopia, also suggests the possibility of a more positive rebirth. It is this cyclic tendency which is lacking in Wells's and Campbell's more absolute final visions. While more recent works, on the whole, are not as determinedly pessimistic, 'apocalypse still threatens. This is evidenced in narratives such as Silverberg's "When We Went to See the End of the World" (1972). Silverberg juxtaposes the empty-headed cocktail-party chatter of his group of time travelers discussing the end of the world as the latest fad in vacations against the crumbling of the civilized world which is taking place all around them in their own present. As one character explains: "Of course, you have to expect" apocalyptic stuff to attain immense popularity in times like these."³⁰

The resurgence of cyclical theories of history, which appeared as alternatives to the linear determinism of the nineteenth century, had a marked effect upon science fiction. Many time-travel stories, like much SF in general, have explored the implications of cyclical time. On the whole, more recent works have reacted negatively to the cyclical point of view. One reason for this may be that many twentieth-century

authors share Patrick Parrinder's view that "the idea that civilizations reaching a certain stage, must go into decline, though widespread in the post-Darwinian period, is a capitulation to anti-scientific irrationalism."³¹ Whether or not this opinion is a valid one, it seems to have many supporters in the SF community.

One work which supports the theory of cyclical time must be considered, however, not only because of the depth of its philosophical exploration, but also because of the sheer breadth of its approach. The future history was pioneered as early as 1763, in Samuel Maddon's The Reign of George VI, 1900-1925; it achieved its classic expression in Olaf Stapledon's Last and First Men (1930). Stapledon's novel describes two million years of the history of mankind, from the present to the end of the race. His Eighteenth and Last Men discover a kind of time travel which allows them to tap minds in the past and to 'see' their own history "as through an optical instrument."³² This pseudo-technology explains how the Last Men are able to 'remember' so much of the previous history of the race. The novel is a delineation of the cycles of humanity, influenced by the philosophies of Hegel and Spengler. In a cosmology which recalls Yeats's 'gyres,' however, Stapledon also describes an evolutionary process in which these cycles advance the race, until the Eighteenth Men are beings unlike anything we, the First Men, could ever imagine.

J.O. Bailey, in his pioneering study of science fiction,

points out that cyclical histories tend to take the

long view. They predict the course of Fate, which our knowledge is powerless to alter. They do not deny that it is possible for us to sign a Pact with Fate for progress in our time.³³

As we would expect, cyclical histories tend to cover long periods of time, while linear narratives are "primarily . . . a short-range business."³⁴ But Wells's far-distant future, based upon an essentially linear philosophy of history, is an exception to the rule that linear extrapolation is, more often than not, limited to the near future. According to Robert Canary's analysis,

For authors committed to realistic projection, cyclical philosophies of history have an obvious advantage, particularly in dealing with long-range futures. If one assumes that history is a series of variations on repeated themes, one can anticipate that the effect of given changes . . . will resemble earlier responses to similar conditions; . . . one can thus set one's plot in a scene which will be familiar to the reader. . . . It is not surprising, then, that Oswald Spengler is one of the few philosophers of history to have left any trace in commercial science fiction. . . . Cyclical views of the historical process also permit the author to comment on current social conditions without the plausibility problems of linear extrapolation.³⁵

For Stapledon, the ultimate cycle is that of Creation and Destruction, which is bound to repeat itself. His Last Men achieve the awareness that

From the Beginning to the End is but the span of one spoke to the other on time's great wheel. There is a vaster span, stretching beyond the End and round to the Beginning. Of the events therein we know nothing, save that there must be such events.³⁶

Stapledon's universe is also the definitive repudiation of a teleological sense of time; in modern SF there is little place for the Judeo-Christian God who watches over the fall of

the sparrow. His cycles are majestic but without significance beyond their own movements. Last and First Men is the literary embodiment of the neutral value of temporal cycles.

As a literary philosopher, Stapledon also had something to say about the fiction-making function of literature: "We of today must conceive our relation to the rest of the universe as best we can; and even if our images may seem fantastic to future men, they may none the less serve their purpose today."³⁷

In more recent SF, temporal cycles, for the most part, are far from value-neutral. They tend to operate as traps, false promises of security which deny human striving, limit human experience and stifle human potential. Alfred Bester's "Adam and No Eve" (1941) is another relatively rare example of SF which draws comfort from the assurance that the cycles of death and rebirth are indeed endless. The more typical response is negative, particularly during the optimistic nineteen-forties and -fifties, SF's developmental middle period.

Isaac Asimov's The End of Eternity (1955) epitomizes this later attitude. In this work, time travel is the device which unwittingly leads to the creation of a static state of 'Eternity,' in which men of every age are monitored and securely guarded against all troubles and dangers. Time is a closed circle, forever repeating itself, until Asimov's hero destroys the pattern and Eternity as stasis comes to an end, making way "for the beginning of Infinity." The end of Et-

ernity, leaves man free to adventure into the universe. The security of Eternity has stunted his potential evolution: "in averting the pitfalls and miseries that beset man, Eternity prevents men from finding their own bitter and better solutions, the real solutions that come from conquering difficulty, not avoiding it."³⁸

In a spirit reminiscent of the Victorians at their most optimistic, many works of this middle period identify the cyclical with the static and, because of their faith in man as a free agent with a great future, they are driven to destroy, or at least to decry, endless repetition. As Mark Rose comments on Asimov's work, "The End of Eternity expresses a fear not of openness . . . but of closure."³⁹ This same attitude is expressed in James Blish's The Triumph of Time (1958). While not a time-travel story, this novel is designed around the question of the end of time. What emerges from the confrontation of scientific ideas about the ultimate fate of our universe is the notion of massive cycles of ends and beginnings. His characters remain true to the spirit of adventure in the face of their realization that "life . . . is at bottom only a local and temporary discontinuity in the Second Law of Thermodynamics." Given the chance to participate in the creation of a new universe, Blish's protagonist chooses to disrupt the cycles by committing suicide to avoid imprinting himself in any humanly recognizable sense onto the new universe that he will become. In this way, it is assured of "a

fate wholly unpredictable from history."⁴⁰ In a more negative vein, Walter M. Miller's classic A Canticle for Leibowitz (1959) suggests that man is trapped in endless cycles and that salvation can be achieved only if he can break out of these patterns of doomed repetition which breed error and destruction.

During SF's middle period, stasis is not the nirvana-like gift that it will become in, for example, Ballard's work. Anthony Boucher's "Barrier" (1942) is one of the strongest repudiations of this idea. The future civilization of "Barrier" proclaims "the stasis of the cosmos; and science, in the guise of Cosmos, gradually supplants all gods." Time travel is outlawed because it symbolizes action, change and development, and the chaos of random dynamism. Naturally, the time-travelling hero destroys the barrier with which the Stasis of Cosmos has surrounded itself; once again, man is free to pursue the future. Gary Wolfe suggests that "Boucher intends us to contrast the variety of possible futures represented by [time travelers] with the dull, static society that a purely mechanistic vision of the universe has produced in Stasis. . . ." ⁴¹

One very special product of time travel, related to short-range temporal cycles, is the time loop, which Stanislaw Lem defines as a circular causal structure. ⁴² Even when they appear to be only literary games, time-loop stories such as Heinlein's "By His Bootstraps" (1941) tend to throw their characters into confusions and grotesqueries which are frighten-

ing in the very nature of their mindless absurdity. The character who recreates himself endlessly in "All You Zombies--" is dreadfully cut off from the rest of humanity; the scientist in P. Schuyler Miller's "As Never Was" (1944) contemplates murder and suicide, driven nearly mad by the causal impossibilities of his situation. Mark Rose suggests that

Much of the fascination of the time loop is related to the fact that it represents the point at which the spatialization of time breaks down. In such circumstances time itself as we normally conceive it disappears. . . . We can note . . . that the paradox at the heart of the time loop is that both free will and determinism are asserted simultaneously, for here genuinely free agents are nevertheless caught in cycles of determined repetition.⁴³

Most time-travel stories, in their spatialization of time, explore it as a basically linear construct. Since the Einsteinian revolution, however, no line is as simple as it used to be. The nature of the past and of the future are of primary concern. Are they fixed and determined in the absolute sense of Newtonian physics or are they variable and open-ended; that is, relativistic? Last and First Men asserts the fixed and real nature of time past; to the Last Men, "it was now the past that seemed most real, while the future seemed void, and the present merely the impalpable becomingness of the indestructible past."⁴⁴ This seems to be the majority opinion, although cases have been made for a past as potentially undetermined as the future. Fritz Leiber's "Try and Change the Past" (1958) demonstrates that it is impossible, as a man tries and fails repeatedly to prevent his own past suicide. Leiber's story is one of a series about the

Changewar, which is also the subject of The Big Time (1958). The Changewar ranges through time, fought by opposing armies who wreak havoc upon their opponents' pasts, in an effort to secure the final victory. While "Try and Change the Past" concludes that the past is immutable, the overall assumption underlying the very concept of the Changewar is that selective tampering with past history is a definite possibility. The title of William Tenn's (Philip Klass) "Brooklyn Project" (1948) implicitly compares his future government's use and abuse of time travel to the development of the atomic bomb by the Manhattan Project. Tenn's story is a witty satire which warns that it may be all too easy to change the past but that no one would ever realize it in the modified presents that result from these changes. Asimov's The End of Eternity supports this premise as well.

More recent works tend to refuse to take clear-cut positions. Michael Moorcock's Behold the Man (1969) suggests that human beings will do all they can to preserve the past; his neurotic time traveler replaces an imbecile Jesus and is crucified in his place in order to ensure the reality of those historical events which are the central myth of his existence. Behold the Man is thus also a statement about the necessity of those myths upon which we support our versions of reality.

Leaving unanswered this question about the immutability of the past, Robert Silverberg's "Many Mansions" (1973) cleverly fluctuates between science fiction and the private fan-

tasies of its main characters, exploring in the process nearly all the potential paradoxes inherent in backward time travel. Silverberg develops his story in a deliberately ambiguous fashion, drawing no conclusions. "Many Mansions" is an exercise in possibilities. Whether or not its time-travel sequences actually occur or are simply the wishful daydreams of its characters, its structure is as random and open-ended as the space-time continuum itself.

The voyage into the past gives rise to all the major paradoxes of time travel, because "it always calls the nature of causation into question."⁴⁵ Both Bellamy and Wells, like many other SF writers, avoided the problems of backward travel, while Edward Page Mitchell's "The Clock That Went Backward" and Mark Twain's A Connecticut Yankee anticipated, at least to a certain extent, some of its logical difficulties. On the whole, travel into the future is less complex and can more easily avoid the problems of temporal paradox. Early stories tended to focus upon future travel, but writers like Heinlein and Silverberg have influenced a major trend in voyages into the past, which seem, in recent SF, to be more popular than the straightforward future journey.

The fundamental paradox of backward time travel is the Grandfather Paradox, which Larry Niven unfolds in the following manner:

What happens to your character if, via time travel, he kills his grandfather before his grandfather has sired his father? He will never have existed. But then there's nobody to kill his grandfather. You cannot write a time-travel story without making

some decision regarding the grandfather paradox and sticking to it.⁴⁶

One of the pleasures of "Many Mansions" is its implicit reference to the Grandfather Paradox. It tells the story of Alice and Ted who are trapped in an unhappy marriage; both indulge in erotic and murderous fantasies revolving around the past of Ted's grandfather, who is himself involved in fantasies of his own youth.

Carl Sagan has made an interesting comment about the possibilities of backward time travel:

I do not know if travel into the past is possible. The causality problems it would imply make me very skeptical. But there are those who are thinking about it. What are called closed time-like lines -- routes in space-time permitting unrestricted time travel -- appear in some solutions to the general-relativistic field equations. . . . I wonder to what extent general-relativists working on such problems have been influenced by science fiction.⁴⁷

Perhaps that is how Moberly and Jourdain travelled to the Versailles of 1789.

The nature of future travel also becomes a more complex problem as time-travel stories move away from the Newtonian model and explore the implications of Relativity. In 1895, Wells's future was determined by the inevitable onslaught of entropy, as was Campbell's in 1935. P. Schuyler Miller's "As Never Was" allows the past to be changeable, but not the future: "the man who visits the future is not changing it: his visit is a foreordained part of that future."⁴⁸ Miller's multiple time-tracks of the past are similar to one version of future time which has arisen, at least in part, as a result of the Principle of Indeterminacy. This principle re-

vives the possibility of free will in a universe which had all but been destroyed by materialistic determinism or what one critic has termed "a predestined cosmic plot."⁴⁹

Larry Niven has defined multiple time-tracks as

other, parallel lines of history, presumed to be just as real as this one, in which (for instance) Napoleon conquered all of Europe and held it, or Lincoln recovered from that gunshot wound, or Adolf Hitler migrated to America after World War I, became a science-fiction writer, and is now writing this under the pseudonym Larry Niven.⁵⁰

Perhaps the best known treatment in fiction of this theory is Jorge Luis Borges's "The Garden of Forking Paths" (1944). In this story, the protagonist's Chinese grandfather has created a book which is also a labyrinth, a fitting symbol of this view of time. Another character explains to him that

Differing from Newton and Schopenhauer, your ancestor did not think of time as absolute and uniform. He believed in an infinite series of times, in a dizzily growing, ever spreading network of diverging, converging and parallel lines. This web of time -- the strands of which approach one another, bifurcate, intersect or ignore each other through the centuries -- embraces every possibility. We do not exist in most of them. In some you exist and not I, while in others I do, and you do not, and in yet others both of us exist. . . . Time is forever dividing itself toward innumerable futures. . . .⁵¹

The possibilities of free will introduced by the notion of multiple time-tracks has proven attractive to many SF writers. James Blish, for example, rewrote his story "Beep" (1954) to inject this idea into its philosophical framework. The characters in "Beep" are forced to accept the fact of a future which is unique and determined, one in which "there were no alternatives, no fanciful 'branches of time,' no decision-points that might be altered to make the future change."⁵²

Its revised version, The Quincunx of Time (1973), reconsiders the same temporal phenomena to conclude that the future is "only potentially real,"⁵³ and that man can choose which branches of future time to actualize. His characters refuse to make choices, striving to actualize all the events they know might come to be. While these characters reject the power to decide the shape of the future in this way, the two works examined in chapter 4 of this study demonstrate a very different attitude. Marge Piercy's Woman on the Edge of Time (1976) and Gregory Benford's Timescape (1980) both insist that humanity take responsibility for its own future reality.

The idea of multiple time-tracks has also given rise to parallel- and alternate-world stories, such as Philip K. Dick's The Man in the High Castle (1962), which rests on the assumption that, in some other universe, Germany and Japan won World War II. While not themselves concerned with time travel, these stories are considered offshoots of the time-travel motif. Scholes and Rabkin contend that

The alternate time stream at its most serious raises questions about history and progress that are not so accessible to any other fictional form. Above all, this form emphasizes the way that the actual events of history have shaped cultural values which we sometimes take to be absolute.⁵⁴

Works of this kind, therefore, are useful in revealing certain cultural myths as the fictions they really are.

The postulation of an open-ended future is directly concerned with the question of man's free will. Parallel- and alternate-world stories can thus also be read as symbolic

treatments of the multiplicity of possibilities extending from any one moment in time, of "the dizzying vision of the infinite possibilities of time. . . ."55

Niven points to the connection between these infinite possibilities and free will in his discussion of "the wish-fulfillment aspect of time travel;"56 he asserts that determinism precludes what he sees as the central element of the motif, which is related to our desire to control the inexorable movements of time. This fantasy of power is very obvious in time-travel fiction: both Mark Twain's Hank Morgan and Wells's Time Traveller are figures of enhanced power because of their abilities in the past and in the future. L. Sprague De Camp's Lest Darkness Fall (1939) owes much to A Connecticut Yankee, but it is the product of a more optimistic time and/or writer and has a very different outcome. De Camp's hero travels to sixth-century Rome, where he is able to change the course of history, averting the Dark Ages. Lest Darkness Fall is also, then, an alternate-world story, because, in our universe, the Dark Ages are an historical fact. A Connecticut Yankee, in its own way, also describes an alternate universe: the England into which Hank Morgan is precipitated has a literary but not an historical reality, emerging as it does from the pages of Malory's Morte Darthur.

By the nineteen-sixties, optimism about the success of time travel becomes more cautious, as SF's middle period draws to a close. Silverberg's Up the Line (1969) recounts

the adventures of a renegade Time Courier, whose attempts to interfere with history result in his own extinction. Silverberg has for many years demonstrated a particular interest in time travel and Up the Line is replete with its theories and the exploration of its paradoxes.

Influenced at least partially by Up the Line, S. James Jakiel assigned the formulation of time-travel 'laws' as a project in a graduate "Seminar in Science Fiction" at the University College at Buffalo. This project resulted in the development of twelve laws which are interesting as a light approach to the mechanics of time travel. Jakiel's account is accompanied by a list of short stories which either support or contradict each law.⁵⁷ Unfortunately, as one critic has pointed out, several of these laws are "inconsistent with logic, experience and each other," and Jakiel's list of stories upon which they are based is surprisingly scanty. This same critic recommends Niven's "The Theory and Practice of Time Travel" to anyone interested in the mechanics of the motif.⁵⁸

Very few writers have seriously attempted to broach the daunting convolutions of time-travel logistics outside of time-travel fictions such as Up the Line. One of the earliest of these attempts is L. Sprague De Camp's "Language for Time Travelers" (1939), produced in the same year as his classic Lest Darkness Fall. De Camp's essay was soon complemented by Willie Ley's "Geography for Time Travelers" (1940) and C. M. Kornbluth later added his equally practical "Time Travel

and the Law" (1957). Monte Cook's "Tips for Time Travel" (1982) is a light look at some of the logical puzzles posed by time travel and Lee F. Werth's "On Again, Off Again" (1982) is a lengthy discussion about time and time travel, thinly disguised as fiction. One of the most interesting essays to approach time travel on the philosophical level is David Lewis's "The Paradoxes of Time Travel" (1976), which grapples with the Grandfather Paradox and other major aspects of the concept.

Niven's "The Theory and Practice of Time Travel" discusses the predominance of backward-in-time stories. He claims that "the prime purpose of time travel is to change the past; and the prime danger is that the Traveler might change the past." It is for this reason that he considers the Grandfather Paradox a basic concern in time-travel logistics.⁵⁹ A survey of time-travel narratives does indeed seem to indicate a preponderance of travel into the past, whether from the fictional present, such as in Behold the Man or from the future, as in Silverberg's The Masks of Time (1968), in which a traveler from the future precipitates the world of 1999 into a fever of apocalyptic furor. Of these two types, the former is far more typical. Travelers from the past, like travelers from the future, are rare; they tend to be Rip Van Winkle types who have slept, or otherwise been preserved, for centuries. It is usually assumed that 'real' time travel does not exist in the past.

All of this certainly supports Niven's theory about time

travel as wish-fulfillment, which he lightly encapsulates as "Please, God, make it didn't happen. . . ."60 It is this aspect which is certainly the impulse behind Benford's Timescape. The other popular feature of backward-in-time travel, of course, is its scope for paradox-building, for the kind of convoluted causal sequences which, if not of any great literary merit, provide endless entertainment for writers and readers alike. Future time travel tends to be a more straightforward enterprise, as epitomized by The Time Machine, although the idea of multiple futures has increased the complexity of recent future-travel stories. Piercy's Woman on the Edge of Time considers the existence of at least two possible futures, and emphasizes the importance of choices made in the present for the shape of the future.

Kurt Vonnegut, Jr.'s Slaughterhouse-Five is a particularly thoughtful time-travel narrative, which indicates that history, both past and future, is a fait accompli. The story proper opens with an abruptness comparable to that of Kafka's Metamorphosis: "Listen: Billy Pilgrim has come unstuck in time." In an endless series of time shifts, Billy lives and relives his past and his future, because "only on Earth is there any talk of free will." In an Einsteinian universe, however, time's arrow is not always the final word. The philosophical aliens from the planet Tralfamadore, who seem to express Vonnegut's view of reality, constantly assert its fluidity and relativity.

The Tralfamadoreans can look at all the different moments. . . . They can see how permanent all the

moments are, and they can look at any moment that interests them. It is just an illusion we have here on Earth that one moment follows another one, like beads on a string, and that once a moment is gone it is gone forever.⁶¹

As Tom Woodman points out, Slaughterhouse-Five

utilizes quasi-scientific concepts to explore the difference between our earthly sense of time and an eternal perspective. . . . The cosmic viewpoint . . . encourages quietism and determinism, which Vonnegut seems half to urge and half to condemn.⁶²

According to Scholes and Rabkin, in this novel, "the sequential, mechanistic relationship between cause and effect does not seem to hold."⁶³ Thus, once again, it is Heisenberg's Principle of Indeterminacy to which much of the world-view of the Tralfamadorians may be attributed.

The Einsteinian universe certainly offers more scope for free will and freedom of action than does Newton's machine. One of the clearest expressions of this belief is Silverberg's "In Entropy's Jaws" (1971), which Andrew Gordon has analyzed at some length in his essay, "Silverberg's Time Machine." Gordon considers this story to be "a twentieth-century myth about the shift from a Newtonian universe to an Einsteinian space-time continuum."⁶⁴ Like Billy Pilgrim, Silverberg's John Skein has come loose in time, falling into time 'fugues' of the past and the future. Like Vonnegut, Silverberg does not answer the question about free will and determinism, but he seems more optimistic than otherwise. "In Entropy's Jaws" suggests that Skein "can defy the imaginary forces of determinism." As his understanding grows, "he defies entropy. Thus he breaks the chain."⁶⁵ As

Gordon suggests in his analysis, "chaos can be a trap . . . but can also be liberating: if time is random, then it is up to all of us to become time travelers to pattern it as we wish,"⁶⁶ even if only in the pages of literary fictions.

Silverberg's near obsession with time travel arises from his conviction that

the only workable time machine ever invented is the science-fiction story. No other mechanism yet devised has the same efficient capacity to transport subjects to the distant reaches of the space-time continuum. . . . Of all the basic themes in science fiction, I think that of voyaging in time is the most fundamental, the closest to the heart of the matter. . . . And the stories of robots and space ships and mutants and all the rest of the classic concepts /provide/ various fragments of the future -- but the stories of travel in time /give/ me the future itself. . . .⁶⁷

It is important to remember, however, that time-travel stories, like all of science fiction, are, at bottom, concerned with present reality, no matter how far into the past or future they may take us. Even the most unlikely tales are ultimately reflections upon ourselves and our contemporary reality. A.A. Mendilow comments upon this idea in Time and the Novel: "The work of every novelist, whether it treats of the contemporary situation or leads one to escape from it into an ivory tower, is explicitly or implicitly a social commentary on the time in which it is written."⁶⁸ Robert Bloch was aware of this when he wrote the introduction to Harlan Ellison's "The Prowler in the City at the Edge of the World" (1967). This disturbing story about Jack the Ripper displaces an historical character from the writer's past to a far-distant future. As Bloch explains, "beneath the crude and

shocking allusions to Eros and Thanatos is the meaningful portrayal of the Man Obsessed, the Violent Man whose transition from the past to the future leaves us with a deeper insight into the Violent Man of today." ⁶⁹ The most unlikely juxtapositions, the most grotesque displacements which result from the use of the time-travel motif, always bring the reader back to the present and to empirical reality; the best of these works tap the cognitive potential of science fiction to the fullest.

In the following two chapters, four significant works of time travel will be analyzed at length, in order to examine the function of the motif in greater detail. A selected bibliography of time-travel narratives is provided at the end of this study.

Notes

¹Stanislaw Lem, "The Time-Travel Story and Related Matters of SF Structuring," in Science Fiction: A Collection of Critical Essays, trans. Thomas H. Hoisington and Darko Suvin, ed. Mark Rose (Englewood Cliffs, N.J.: Prentice-Hall, 1976), p. 85. According to Lem, the other major motifs are the ideas "of constructing a robot, of cosmic contact, of cosmic invasion, and of ultimate catastrophe for the human species."

²Gary K. Wolfe, The Known and the Unknown: The Iconography of Science Fiction (Kent, Oh.: Kent State University Press, 1979), p. 18.

³Darko Suvin, Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre (New Haven: Yale University Press, 1979), pp. 89, 71.

⁴H. Bruce Franklin, Future Perfect: American Science Fiction of the Nineteenth Century (1966; rev. ed. New York: Oxford University Press, 1978), p. 365.

⁵"Compounded Interest" is based upon an idea in The Time Machine, facetiously offered by one of the Time Traveller's skeptical friends during their discussion about the possibilities of time travel: "One might invest all one's money, leave it to accumulate at interest, and hurry on ahead!" See The Time Machine, in The Works of H.G. Wells, The Atlantic Edition, Vol. I (New York: Charles Scribner's Sons, 1924), p. 9. Reynolds's protagonist attempts much the same ploy by traveling into the past.

⁶Larry Niven, "The Theory and Practice of Time Travel," in his All the Myriad Ways (1971; rpt. New York: Ballantine Books, 1981), p. 113.

⁷Donald C. Williams, "The Myth of Passage," in The Philosophy of Time: A Collection of Essays, ed. Richard M. Gale (Garden City, New York: Doubleday-Anchor, 1967), p. 105.

⁸A.M. Philips, "Time-Travel Happens!" in Famous Science-Fiction Stories: Adventures in Time and Space, ed. Raymond J. Healey and J. Francis McComas (1946; rpt. New York: The Modern Library, 1957), pp. 676-686.

⁹ Stanislaw Lem, "On the Structural Analysis of Science Fiction," trans. Franz Rottensteiner and Bruce R. Gillespie, Science-Fiction Studies, 1 (Spring 1973), 29.

¹⁰ Robert Scholes and Eric S. Rabkin, Science Fiction: History, Science, Vision (New York: Oxford University Press, 1977), p. 178.

¹¹ "On the Structural Analysis of Science Fiction," 29.

¹² "The Theory and Practice of Time Travel," p. 120.

¹³ Robert Scholes, Structural Fabulation: An Essay on Fiction of the Future (Notre Dame, Indiana: Notre Dame University Press, 1975), p. 29.

¹⁴ For one of the worst time-travel stories ever written, see John Norman's Time Slave (1975), a distasteful combination of sexual bondage and fascistic political attitudes which manages to insult almost every kind of reader except those who enjoy rather juvenile erotic/sadistic superman fantasies.

¹⁵ Structural Fabulation, p. 7.

¹⁶ Michael Moorcock, Introduction, Traps in Time, ed. Moorcock (Harmondsworth, Middlesex: Penguin Books, 1968), p. 9.

¹⁷ "An Anacronism, or Missing One's Coach," Dublin University Magazine, June 1838, p. 706. H. Bruce Franklin, in his study of nineteenth-century American science fiction, mistakenly situates this story, under the title "Missing One's Coach: An Anachronism," in the Edinburgh Review of 1838. See Future Perfect, p. 377.

¹⁸ Fritz Leiber, "Time and Nth Dimensions," in The Visual Encyclopedia of Science Fiction, ed. Brian Ash (New York: Harmony Books, 1977), p. 145.

¹⁹ Jan Pinkerton, "Backward Time Travel, Alternate Universes, and Edward Everett Hale," Extrapolation, 20 (Summer 1979), 170, 168.

²⁰ Sam Moskowitz, "Lost Giant of American Science Fiction -- A Biographical Perspective," in The Crystal Man: Landmark Science Fiction by Edward Page Mitchell, ed. Moskowitz (Garden City, New York: Doubleday, 1973), pp. lxi-lxii.

²¹ Isaac Asimov, Charles G. Waugh and Martin Greenberg, ed., Isaac Asimov Presents the Best Science Fiction of the 19th Century (New York: Beaufort Books, 1981), p. 114.

- ²² Science Fiction: History, Science, Vision, p. 176.
- ²³ Future Perfect, p. 269.
- ²⁴ Andrew Gordon, "Silverberg's Time Machine," Extrapolation, 23 (Winter 1983), 346.
- ²⁵ Stephen Kern, The Culture of Time and Space, 1880-1918 (Cambridge, Mass.: Harvard University Press, 1983), p. 94.
- ²⁶ Edward Bellamy, Looking Backward, 2000-1887 (New York: The Modern Library, 1951), p. 35.
- ²⁷ John W. Campbell, "Twilight," in The Road to Science Fiction #2: From Wells to Heinlein, ed. James Gunn (New York: New American Library, 1979), p. 271.
- ²⁸ Don A. Stuart, "Night," in Where Do We Go From Here?; ed. Isaac Asimov (Greenwich, Conn.: Fawcett Crest, 1971), p. 53.
- ²⁹ Mark Rose, Alien Encounters: Anatomy of Science Fiction (Cambridge, Mass.: Harvard University Press, 1981), p. 99.
- ³⁰ Robert Silverberg, "When We Went to See the End of the World," in his Unfamiliar Territory (New York: Berkley Books, 1973), p. 143.
- ³¹ Patrick Parrinder, Science Fiction: Its Criticism and Teaching (New York: Methuen, 1980), p. 100.
- ³² Olaf Stapledon, Last and First Men (Harmondsworth, Middlesex: Penguin Books, 1963), p. 241.
- ³³ J.O. Bailey, Pilgrims Through Space and Time: Trends and Patterns in Scientific and Utopian Fiction (1947; rpt. Westport, Conn.: Greenwood Press, 1972), p. 314.
- ³⁴ Robert H. Canary, "Science Fiction as Fictive History," Extrapolation, 16 (Winter 1974), 84.
- ³⁵ "Science Fiction as Fictive History," 85.
- ³⁶ Last and First Men, p. 305.
- ³⁷ Preface, Last and First Men, p. 12.
- ³⁸ Isaac Asimov, The End of Eternity, in The Far Ends of Time and Earth: The Collected Fiction of Isaac Asimov, Vol. I (Garden City, New York: Doubleday, 1979), pp. 538, 533.
- ³⁹ Alien Encounters, p. 106.

⁴⁰ James Blish, The Triumph of Time (New York: Avon, 1958), pp. 16, 135.

⁴¹ The Known and the Unknown, pp. 46, 47.

⁴² "The Time-Travel Story and Related Matters of SF Structuring," p. 75.

⁴³ Alien Encounters, p. 109.

⁴⁴ Last and First Men, p. 242.

⁴⁵ Scholes and Rabkin, Science Fiction: History, Science, Vision, p. 176.

⁴⁶ Larry Niven, "The Words in Science Fiction," in The Craft of Science Fiction, ed. Reginald Bretnor (New York: Harper and Row, 1976), p. 181.

⁴⁷ Carl Sagan, Broca's Brain: Reflections on the Romance of Science (New York: Ballantine Books, 1980), p. 172.

⁴⁸ P. Schuyler Miller, "As Never Was," in Famous Science-Fiction Stories: Adventures in Time and Space, p. 463.

⁴⁹ Tom Woodman, "Science Fiction, Religion and Transcendence," in Science Fiction: A Critical Guide, ed. Patrick Parrinder (New York: Longman, 1979), p. 123.

⁵⁰ "The Words in Science Fiction," p. 181.

⁵¹ Jorge Luis Borges, "The Garden of Forking Paths," in Traps in Time, p. 156.

⁵² James Blish, "Beep," in his Galactic Cluster (London: Granada, 1980), p. 141.

⁵³ James Blish, The Mincunx of Time (1973; rpt. New York: Avon, 1983), p. 103. In this work, one of Blish's characters aptly explains the difficulties of adjusting to the new 'fictions' of reality which the advances of science are constantly imposing upon human consciousness: "Scientists find it difficult to break out of the current /scientific/ paradigm. The informed layman, and even more the man on the street, is usually stuck in the previous one. Thus in Einstein's lifetime, there was a widespread belief that his ideas were just fanciful foolishness and that it was Newton who really had the straight goods" (p. 107).

⁵⁴ Science Fiction: History, Science, Vision, p. 177.

⁵⁵ Rose, Alien Encounters, p. 119.

- 56 "The Theory and Practice of Time Travel," p. 120.
- 57 S. James Jakiel and Rosandra E. Levinthal, "The Laws of Time Travel," Extrapolation, 21 (Summer 1980), 130-138.
- 58 Gordon B. Chamberlain, "Reaction Time," Extrapolation, 23 (Fall 1982), 298-303.
- 59 "The Theory and Practice of Time Travel," p. 111.
- 60 "The Theory and Practice of Time Travel," p. 111.
- 61 Kurt Vonnegut, Jr., Slaughterhouse-Five, or The Children's Crusade (New York: Dell, 1969), pp. 20, 74, 23.
- 62 "Science Fiction, Religion and Transcendence," p. 123. 'Tralfamadore,' it may be noted, is an anagram for 'or fatal dream,' which would seem to indicate a warning against the very determinism that Vonnegut seems to support.
- 63 Science Fiction: History, Science, Vision, p. 129.
- 64 "Silverberg's Time Machine," 345. It is interesting to note that relative time is a central element in the seven books of Edgar Rice Burroughs's Pellucidar series, which began in 1914 with At the Earth's Core. This was an early and unexpected eruption of the new physics into ERB's determinedly naive scientific-romantic universe.
- 65 Robert Silverberg, "In Entropy's Jaws," in his Unfamiliar Territory, p. 196.
- 66 "Silverberg's Time Machine," 360.
- 67 Robert Silverberg, Introduction, Trips in Time: Nine Stories of Science Fiction, ed. Silverberg (New York: Thomas Nelson, 1977), pp. 9-10.
- 68 A.A. Mendilow, Time and the Novel (New York: Peter Nevill, 1952), p. 88.
- 69 Robert Bloch, Introduction, "The Prowler in the City at the Edge of the World," by Harlan Ellison, in Ellison et al, Partners in Wonder (New York: Pyramid Books, 1975), p. 107.

Chapter Three

The Eclipse of Time: A Connecticut Yankee in King Arthur's Court and The Time Machine

"They say life is a dream, a
precious poor dream at times --."
(H.G. Wells, The Time Machine)

1

This chapter will examine the function of the time-travel motif in two nineteenth-century novels, Mark Twain's A Connecticut Yankee in King Arthur's Court (1889) and H.G. Wells's The Time Machine (1895). The choice of these two works seems obvious when one considers their impact and stature. A Connecticut Yankee may well be the first work of any length to explore seriously the significance and consequences of backward-in-time travel, while The Time Machine firmly established Wells's pseudo-scientific invention among the ranks of science fiction's major 'icons.'

One of the reasons for the continuing popularity of The Time Machine is its rather strict adherence to some of the more easily identifiable generic formulae of science fiction. Wells's scientific romances tend to be the results of fairly straightforward extrapolation and to follow the method prescribed by Wells himself in 1924:

[Science fiction is] the method of bringing some

fantastically possible or impossible thing into a commonplace group of people, and working out their reactions with the completest gravity and reasonableness. . . .¹

And in 1934 he wrote that

In all this type of story the living interest lies in their non-fantastic elements and not in the invention itself. . . . The thing that makes such imaginations interesting is their translation into commonplace terms and a rigid exclusion of other marvels from the story. Then it becomes human.²

It may be argued that A Connecticut Yankee is fantasy rather than science fiction. After all, Hank Morgan's arrival in King Arthur's England is not accomplished by means of any scientific or pseudo-scientific technology, nor is his return. Certainly the Yankee's methods of time-travelling are somewhat more difficult to accept than Wells's impressive time-bicycle. Neither a blow from a crossbar nor the spell of a legendary magician is an orthodox SF device. It is the human element which is lacking.

Mark Twain's time-travel methods are more like the marvels of romance than the science of science fiction. But once Hank's travels are done, his story is all-too-painfully realistic, returning Mark Twain to the fold of SF orthodoxy. Moreover, his pre-occupation with the problems posed by developing technology is one which is central to the genre. While his classic may be unacceptable to some SF purists, it may certainly be considered an important work of proto-science fiction, that is to say, of science fiction struggling for form at a time when the generic rulebooks had not yet been written.

Both A Connecticut Yankee and The Time Machine are directly involved with the philosophical fabric of their historical milieus and both are reactions to what are perceived as weaknesses in that fabric. Both Mark Twain and Wells found in time travel a tool for expressing their reactions in literary form and thereby produced works of enduring value and interest.

Robert Heinlein's comment on these two works in his prefatory note to "All You Zombies²" has frequently been cited:

Mark Twain invented the time-travel story. Six years later H.G. Wells perfected it and revealed its paradoxes. Between them, they left little for late-comers to do. . . .³

As one of these late-comers, Heinlein may have been prone to a certain exaggeration, but Mark Twain and Wells between them definitely shaped a motif which appeared almost fully matured in their works and which achieved an instant and enduring popularity.

A useful way to approach these two works is to consider their function as "social parables." As Patrick Parrinder explains,

Whatever their other literary characteristics, a large portion of SF novels have something to say about the issues of knowledge and power. They tend to demand with a peculiar insistence to be read, in part, as social parables.⁴

The juxtaposition of eras, social mores, and human behaviour which can be facilitated by the time-travel story makes this kind of science fiction particularly conducive to the writing of social parables. To consider A Connecticut Yankee as a

parable of power and The Time Machine as a parable of knowledge, then, is one obvious way to begin this analysis, although these designations are a matter of emphasis only and do not presume to contain all the complexities of either work.

As social parables, the individual adventures of the protagonists of each of these novels serve to reflect upon their contemporary social realities. Hank Morgan's aggressive acquisition of power through technological advantage holds up a mirror, albeit a distorted one, to the unthinking development of industrialized America; the Time Traveller's search for knowledge reflects upon the lack of self-awareness of Victorian England.

In each work, it is the writer's use of the time-travel motif which provides the impetus for these adventures. More importantly, it also provides the necessary distance from which to defamiliarize the writer's particular social context, giving fresh impact to the real subject of his work. In the words of Gary Wolfe, time travel is the "structural pivot"⁵ of each work, enabling the nineteenth-century Yankee to impose himself upon sixth-century Britain and the Victorian scientist to invade the world of 802,701.

David Ketterer has isolated the element of "power fantasy" in science fiction, especially through his examinations of the works of Mark Twain. As a result of A Connecticut Yankee, Ketterer suggests that "Mark Twain should be credited with originating the 'theme' of power fantasy in science

fiction." So pervasive is this aspect of science fiction that Ketterer considers it almost "a generic characteristic."⁶

In the previous chapter, the connection between time travel and wish-fulfillment was discussed, in that the ability to travel in time is both the source of and the expression of great power. It is one of the ways in which literature has explored our wish to control the processes of time and history. In Mark Twain's 'fantasy,' Hank Morgan's journey into the past results in his establishment as the Boss, the most powerful man in the (then) world. Mark Twain's particular approach, however, reveals this kind of power to be destructive, ultimately turning on and defeating Hank himself.

Perhaps the most effectively dire image of this potential danger is embodied in Hank's secret factories, which are hidden in the pastoral landscape of the older world. Hank inadvertently provides the key with which the reader may interpret the real nature of "the machine in the garden."⁷

Unsuspected by this dark land, I had the civilization of the nineteenth century booming under its very nose! . . . There it was, as sure a fact, and as substantial a fact as any serene volcano, standing innocent with its smokeless summit in the blue sky and giving no sign of the rising hell in its bowels.

The grim threat of this image is fulfilled by the end of Hank's adventures: the volcano must erupt and the power of nineteenth-century technology must destroy. A Connecticut Yankee is filled with explosions and eruptions; Twain constantly returns to the image of the volcano. It appears ap-

appropriately in the name of Britain's first newspaper, the Camelot Weekly Hosannah and Literary Volcano (p. 303); Merlin's tower explodes "with a vast volcanic fountain of fire" (p. 105); Morgan Le Fay is "a Vesuvius" (p. 210).⁹ These are only a few of the instances that prepare the reader for the final apocalypse and the revelation that power destroys and that absolute power destroys absolutely. Mark Twain's apocalypse is the fitting culmination of all the previous upheavals in Hank's career -- violent, bloody, and absurd.

The finale of The Time Machine, however, is relatively tranquil, more sad than angry, the result of an inevitable cosmic process rather than of inevitable human nature. The Time Traveller is no Hank Morgan. His journey is a voluntary one and his goal is knowledge rather than raw power. Like Faust, however, he pays a high price for that knowledge, as he first witnesses the inexorable decline of the human race and then finds himself confronted by the death of his world.

Wells also uses the image of the garden and, indeed, of the machine in the garden in his parable of knowledge. The Time Traveller's machine transports him to "what seemed to be a little lawn in a garden, surrounded by rhododendron bushes." But central to that garden is the "colossal figure" of the White Sphinx, whose presence forces upon him the realization of "the full temerity of [his] voyage."¹⁰ Once again, the image of the garden is false and misleading. The confron-

tation of the scientist on his wonderful machine with the mythical symbol of mystery and "the assurance of immanent death"¹¹ is a warning that the acquisition of knowledge may never enable man to control, or even finally to comprehend, the processes of his universe. Wells's hero is only a spectator at the end of the world. He certainly does not have the scope for action of a Hank Morgan. On the other hand, he is capable of learning from his vision, while Hank deludes himself in dreams of empty grandeur. Parrinder rightly recognizes "the Time Traveller's courage in facing the evidence of mankind's futility and bringing it back to his hearers."¹²

Both these social parables are finally ambivalent in their conclusions. According to Judith Fetterley, when Hank wins his final battle, he also defeats himself; "his destruction of others is also self-destructive." When the Time Traveller learns the ultimate fate of man and his world, he acquires also the limits of knowledge and, consequently, the limits of the powers of science. Fetterley points out that A Connecticut Yankee is "an exorcism of the fantasy of power."¹³ The Time Machine is also an attempt at exorcism, of the kind of fear produced by knowledge without power. As J.P. Vernier has suggested, "the very act of creating the future through an act of the imagination [may be] a way of exorcising that future."¹⁴

Wells's final vision is as futile and absurdist as Mark Twain's, albeit less hysterically personal and more objectively scientific in style and presentation. For both writers

time carries within itself the seeds of man's destruction. Man's existence, as Hank gloomily concludes, is "a pathetic drift between the eternities" (p. 208), and neither brute force nor the kind of power granted by knowledge will enable him to escape the final end. Mark Rose makes a significant point in this context, concerning the title of Wells's novella:

The presence of the machine, the symbol of science and rationality, points to the fable's central concern with power: through science man may be able to dominate time. But what the novel finally reveals is that any such hope is false: not man but time is the master of the universe. Indeed, in the course of the story, the very title develops an ironic second meaning, as we come to see mankind imprisoned in the relentless turning of history, trapped in a diabolic mechanism whose workings lead to death.¹⁵

2

A Connecticut Yankee at King Arthur's Court has frequently been cited as the first real time-travel story.¹⁶

Philip Klass, who writes science fiction as William Tenn, insists that "it is unquestionably the first backward-in-time story where the difference between one period and another is used to significant dramatic purpose." As developed by Mark Twain, this difference is largely one of technological development, a central issue in science fiction. It is also the focus for "the conflict between differing social values"¹⁷ around which the action takes place. These factors alone justify Ketterer's conclusion that Mark Twain's importance as a science-fiction innovator has been "unfairly eclipsed

by his contemporaries, H.G. Wells and Jules Verne."¹⁸

The image of eclipse, appropriately enough, is central to A Connecticut Yankee, as the time traveler from 1879 overshadows the world of 1630. Hank wins his position as the Boss by taking credit for the eclipse which occurs shortly after his arrival. But ironically his threat to "smother the whole world in the dead blackness of midnight" (p. 88) does come true when his whole world is finally smothered in the darkness of illusion and death. This fictional eclipse serves as a metaphor for Mark Twain's own experience of the American dream of technology.

Mark Twain wrote A Connecticut Yankee between 1886 and 1889. From 1880 to 1891, he was involved both emotionally and financially in the development of James W. Paige's typesetting machine, a machine which never really advanced beyond the experimental stage. Mark Twain believed that it would revolutionize the printing world. In reality, this involvement led to his bankruptcy in 1893; the machine itself, after a history of delay and breakdown, was crowded from the market by the more successful Linotype designed by Otto Morgenthaler.

It is not surprising to find that A Connecticut Yankee was inextricably connected in Mark Twain's mind with the Paige typesetter or that his involvement with the machine and its effect upon his psychological state can be traced in the structure of the novel. Justin Kaplan, in his prize-winning biography, Mr. Clemens and Mark Twain, asserts that

the Yankee and the machine were twinned in his mind. Both were tests of a perfectible world in which, contrary to all his insights and experiences, friction and mechanical difficulties were equivalents of ignorance and superstition. Both expressed a secular religion which had as an unexamined article of faith a belief not in eternal life but in perpetual motion.¹⁹

James Cox describes Mark Twain's obsession with the machine in this way:

Never was Twain more enamored of an object, unless it was Olivia Langdon: if she was the goddess he revered, it was the demon who possessed him and on whom he wasted his fortune and almost sacrificed his sanity. . . . It became for him . . . the concrete embodiment, the diagram, from which his mechanistic philosophy and psychology took their inspiration.²⁰

In 1890, in a letter to an unidentified person, Twain admitted his failure with Paige's typesetter:

And I watched over one dear project of mine five years, spent a fortune on it, and failed to make it go -- and the history of that would make a large book in which a million men would see themselves as in a mirror; and they would testify and say, Verily this is not imagination, this fellow has been there -- and after would they cast dust upon their heads, cursing and blaspheming.²¹

The failure of the machine was, for Mark Twain, the failure of nineteenth-century technology as a viable way of life.

It is no wonder then that A Connecticut Yankee developed into something very different from his original "dream of being a knight errant in armor in the middle ages."²² Obviously, over four and a half years of creation, Mark Twain's vision and purpose changed, as his personal experience of the American Gilded Age forced him to reformulate his faith in the triumph of technology toward "an apocalyptic conclusion in which chivalric England and Hank Morgan's American tech-

nology -- failures both, as the author had come to see them -- destroy each other."²³ Unlike The Time Machine which heralded the rise of Wells's literary career, Mark Twain's novel marked the turn for the worse in his; he never recovered from the failure of his emotional and financial investment in America's Gilded Age.

Time travel was for Mark Twain a motif he could use in order to delineate the extent of his disillusionment. It is this device which enables him to create the central tension of A Connecticut Yankee, the constant struggle between the romantic trappings of the chivalric past and the ironic revelation of its true nature as perceived by his jaundiced eye. The entire work is filled with the tension which arises from the confrontation of centuries and social values. Appearances repeatedly mask reality: just as Hank's demonic machines lurk hidden in the pastoral landscape, so the secret movements of the Church are masked by the goodness of its individual members, and Hank's true thirst for power is disguised by his overt intentions to save and to improve slavery-ridden England. Over and over, appearances eclipse reality until the final scene is played out; then it is that the reality of death puts an end to all illusion, even as Hank dies entangled in "the torture of [his] hideous dreams" (p. 493) that were "as real as reality" (p. 492). If, as Cox suggests, the Yankee is "the concrete embodiment of Twain's obsession" with the machine and machine values,²⁴ then his death does indeed represent the end of Mark Twain's entrap-

ment in a kind of illusion. The novel thus becomes a kind of experimental laboratory wherein he could isolate the nineteenth-century values he wished to examine against the values of an earlier age. Ultimately, neither the ideal of Arthurian chivalry nor the pragmatic politics of Hank's manipulations of power could satisfy.

At the heart of the book is the overwhelming sense of Mark Twain's own alienation from his contemporary reality. Thus Hank's alienation from the sixth century is a central metaphor of A Connecticut Yankee: he is the man cut off from his rightful time and place.²⁵ At the same time, he embodies those nineteenth-century qualities which led Mark Twain to his own sense of alienation: the unthinking faith in technology, the unquenchable thirst for power, the delusion that technological values represent Good in the Eternal battle against Evil. Ketterer has suggested that one common feature of apocalyptic literature is the creation of a new world after the destruction of the old one. In the grip of such alienating forces, Mark Twain destroys both the fictional worlds of his novel; there is nothing except the reality of dreams to replace what has been destroyed. His apocalypse is all-encompassing and final. All of reality must perish. "As an image, the eclipse . . . [connotes] not the transformation of realities, but the end of reality, the final apocalypse."²⁶

Parrinder has discussed "the romantic/realist Great Divide" in science-fiction studies.²⁷ While clearly neither

one nor the other, science fiction tends to have a foot in both camps. According to Northrop Frye in his Anatomy of Criticism, romance as a literary mode functions on the level between myth and realism. It is a highly conventionalized narrative form, containing many of the structural elements of myth from which it has been displaced, and it recounts an "idealized sequence of marvellous adventures."²⁸ In The Secular Scripture, Frye explains that "the realistic tendency moves in the direction of the representational, . . . the romantic tendency in the opposite direction, concentrating on the formulaic units of myth and metaphor." In contrast to the romantic sequence of loosely related marvels, realism "pretends that things are happening out of coherent probability" and proceeds to develop according to the logic of cause and effect.²⁹

Because of their relationship to myth, most romances are cyclical in structure; they "exhibit a cyclical movement of descent into a night world and a return to an idyllic world, or to some symbol of it like a marriage. . . ."³⁰ The romantic cycle is comforting, suggesting a successful reintegration into a desirable status quo (note the return of the hero motif in a work such as the Morte Darthur). Outside of romance, however, cyclical movement may also indicate futility and absurdity, the irony of pointless repetition. Frye considers the appearance of cyclical theories of history, for example, to be "a typical phenomenon of the ironic mode."³¹

In its modal tensions, a work such as A Connecticut

Yankee demonstrates the complexity of the science-fiction genre: the form of the novel is clearly romantic, while the attitude toward time and history approaches that of the nineteenth-century realist novel. For Hank Morgan, human time is bounded by the Newtonian absolutes of eternal past and eternal future,³² and man has evolved in a mechanistic and determined fashion. His misanthropic ruminations lead him to the sad conclusion that man is the result of

a procession of ancestors that stretches back a billion years to the Adam-clam or grasshopper or monkey from whom our race has been so tediously and ostentatiously and unprofitably developed. And as for me, all that I can think about in this plodding sad pilgrimage, this pathetic drift between the eternities, is to look out and humbly live a pure and high and blameless life, and save that one microscopic atom in me that is truly me. . .
(p. 208)

Ultimately, of course, Mark Twain refutes Hank's linear interpretation of history and relegates it to the scrap heap with the rest of reality.

The tension between romance and realism in A Connecticut Yankee is created and maintained by Mark Twain's use of irony. This is frequently a central characteristic of science fiction, helping to resolve the modal dichotomy in the genre: irony uses the structure of romance in conjunction with the content of realism, creating a kind of conflict between the emotive and the intellectual levels of the work, while providing a kind of generic synthesis in the nature of science fiction itself. This particular aspect of science fiction can be traced very clearly in Mark Twain's novel as well as in The Time Machine. Parrinder suggests that many modern

science fiction writers consciously use the elements of romance "with ironic intent,"³³ so that the resolution of romance and realism under the blanket of irony is still prevalent in the genre.

Irony, of course, is often the force behind much of the humor in science fiction. In A Connecticut Yankee, for example, the preservation of the Holy Fountain is contingent upon the fact that the monks who tend it must never wash. Ketterer characterizes science-fiction humor as "often wry, tragic, or like black humor, simply expressive of the absurd."³⁴ This is certainly the prevailing mood of Mark Twain's novel and, even in a serious work like The Time Machine, it is Wells's ironic vision which constantly diminishes the Time Traveller whenever he approaches the truly heroic (in the romantic sense). While science fiction as a genre is not prone to overt comedy, the muted strains of irony and black humor are everywhere, as readers of Moorcock, Vonnegut, Silverberg, Dick or Lem will readily attest.

Frye contends that irony "begins in realism and dispassionate observation. But as it does so, it moves steadily toward myth" so that the modes of literature "go around in a circle."³⁵ In A Connecticut Yankee the conventions of romance are distorted in such a way that the underlying irony of the work provides its greatest impact. Structurally, as Frye points out, "the central principle of ironic myth is best approached as a parody of romance: the application of romantic mythical forms to a more realistic content which fits them

in unexpected ways."³⁶ The idea of alienation is often inherent to the ironic world-view. In romance, alienation results from the traps of illusion; the impulse is toward integration and identity.³⁷ In the romance of A Connecticut Yankee, the force of alienation overwhelmingly defeats any hope of Hank's re-integration into his own time or any other. The accepted pattern is broken: Hank dies hopelessly entangled in illusion, the complete ironic anti-hero, twice displaced in time, doubly alienated.³⁸

Frye was one of the first critics to note the relationship of science fiction to the conventional romance form.³⁹ Rarely is the connection so obvious as in A Connecticut Yankee, probably because its setting is so evocative of the ultimate in romantic adventure. The book contains two quest narratives, both of which are inversions of the traditional romantic quest. Framing these two 'romantic' journeys is a third one, the greater 'mythic' quest which Hank has imposed upon himself, the traditional battle of the hero against the forces of Evil, here represented by the Aristocracy and the Church who crush and enslave the common people. This framing quest ends ironically and absurdly at the Battle of the Sand-Belt, which exposes the true nature of that quest, resulting as it does in the death of twenty-five thousand men. Power is the real object of Hank's quest, power which destroys him as he has destroyed others. The entire work is a cycle of journeys and returns which is finally cut short by the impact of Mark Twain's nihilistic interpretation of reality.

Mark Twain's use of time travel reveals his pessimistic world-view, a perspective shaped by his own personal experiences of nineteenth-century America. It also demonstrates his deterministic philosophy which draws the novel inevitably toward its climax, the eruption of apocalyptic destruction and the 'end of time' for his aggressive and self-deluded time traveler. The past to which Hank travels and which he so ingeniously tries to change seals itself behind him without a trace, once again fixed and closed. The only tangible sign of his tremendous adventure is "the round hole through the chain-mail in the left breast" of the armor of Sir Sagramore le Desirous (p. 48). Philip Klass notes that "only Twain had the devilry to begin a first time travel story with a time travel paradox."⁴⁰

It is also worth noting at this point an interesting connection between Hank's role as time traveler and his position as miracle-worker and prophet. In an examination of time and magic, J.T. Fraser draws attention to the fact that

the fascination of 'time travel' is not recent. In every culture and age, persons credited with or accused of the gift of prophecy have been marked for special attention: they have been honored and respected, or threatened and punished.⁴¹

Thus Hank's authority as seer and prophet (a kind of psychic time traveler) is the direct result of his actual temporal displacement, another juxtaposition of the miraculous and the empirical which helps to maintain the essential tension of the novel.

Mark Twain's own particular despair led him to subsume

the book's climax under another all-encompassing ending which, for Ketterer, is foreshadowed by the 'miraculous' eclipse which establishes Hank's position as the Boss: "Twain presents the eclipse or displacement of one heavenly body by another as symbolically analogous, first, to the transposition of epochs which Hank experiences and, second, to Hank's dawning apocalyptic realization that reality itself, whether that of the sixth century or the nineteenth, is an illusion, a

dream."⁴² A Connecticut Yankee is a romance gone wrong, an ironic romance. Its conclusion stands as a perfect expression of that sense of ultimate futility which is the ironic viewpoint. This explains the dichotomy in the nature of the novel, the "modal counterpoint" between romance and realism, between the paradigmatic structure and the syntagmatic content.⁴³

Mark Twain's time-travel story is worked out on the human level of the realist novel. Events unfold in a deterministically inevitable sequence. These events, however, follow the course of the romance whose central adventure is the quest, which also unfolds sequentially in its dialectical oppositions between Good and Evil.⁴⁴ The structural conventions shared by romance and myth usually demand that the classic romance progress in a circular movement, from the initiation of the hero into the quest to his (failed or successful) return at the end.

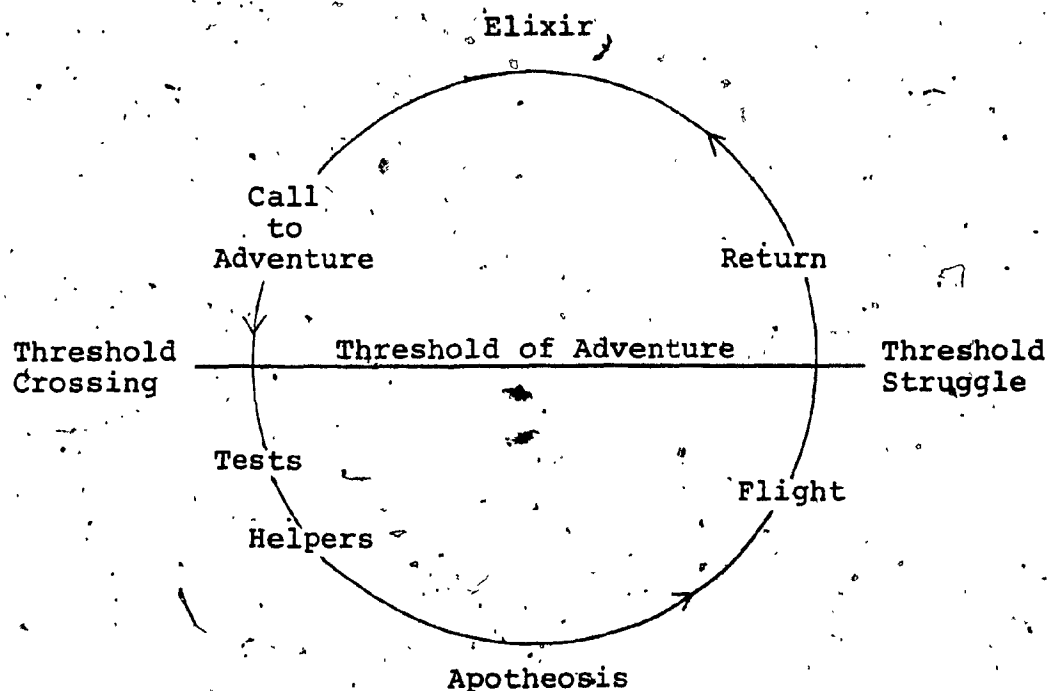
Joseph Campbell has isolated the major structural pattern of myth, the monomyth, in which is found the basic struc-

ture of the romance form:

The standard path of the mythological adventure of the hero is a magnification of the formula represented in the rite of passage: separation -- initiation -- return: which might be named, the nuclear unit of the monomyth.

A hero ventures forth from the world of common day into a region of supernatural wonder: fabulous forces are there encountered and a decisive victory is won; the hero comes back from this mysterious adventure with the power to bestow boons on his fellow men.⁴⁵

The following is a simplified diagram of Campbell's illustration of the narrative elements of the monomyth:⁴⁶



The structure of A Connecticut Yankee bears a striking resemblance to the monomyth, which functions as the deep narrative structure of the work, as it also does in The Time Machine. Deviations from this pattern gain their impact from

the very closeness of the resemblance.

If one sets the sequence of events in A Connecticut Yankee against Campbell's monomyth, the striking dissonances between form and content indicate much about the true nature of the work. This can best be demonstrated by dividing the Yankee's adventures into five large segments, excluding the outer narrative frame which provides Mark Twain with a veneer of credibility for his time-travel story.

The first section includes chapter 1, "Camelot," to chapter 10, "Beginnings of Civilization," and corresponds to the mythic ingredients of the hero's departure from the everyday world and the passing of the first test which threatens the success of his adventure. Hank is precipitated into sixth-century England during a fight with the mythologically-named Hercules. It is significant that his adventures begin with a violent quarrel. His penchant for violence is one of the fatal flaws of this not-very-tragic hero.

Supported by Clarence, Hank performs his first 'miracle,' passing his initial test by seeming to cause a solar eclipse. Through this act he becomes associated with the Sun principle, as are all heroes, but this is a negative association, since he claims responsibility for the fall of darkness, not the creation of light. In this sense, the eclipse foreshadows the final destruction wrought by Hank at the Battle of the Sand-Belt. By the end of this first segment, he is the most powerful man in Arthur's kingdom.

The second section of the novel extends from chapter 11;

"The Yankee in Search of Adventure," to chapter 20; "The Ogre's Castle." Hank, the Boss, sets off on his first cycle of adventures with Sandy, another helper-figure whom he later marries. This sequence is really a parody of the romantic quest, ending at the pigsty on a note of complete farce. Central to this parody, of course, is "the Circe-like force of illusion,"⁴⁷ which underlies the whole work and which emphasizes the tension between the ideal and the actual, between the romantic and the ironic.

The central segment of the novel, from chapter 21, "The Pilgrims," to chapter 26, "The First Newspaper," remains outside of the mythic-quest structure. It contains the details of Hank's restoration of the Holy Fountain, which is as false a miracle as any other he performs. On the other hand, it is the most positive action of his career, a significant restoration of flowing water, traditionally a life-symbol. Thus, ironically perhaps, in spite of the ultimate pessimism of the work, at its center is an act of symbolic replenishment of the source of life.

The next section extends from chapter 27, "The Yankee and the King Travel Incognito," to chapter 39, "The Yankee's Fight with the Knights." It details Hank's second cycle of adventures, his travels in disguise with King Arthur (again the elements of illusion), to study at first hand the plight of the common man under the oppression of Church and Aristocracy. This quest is serious and realistic, affording Mark Twain the opportunity to vent the spleen of his nineteenth-century so-

cial conscience against slavery in particular and tyranny in general.

The last segment of A Connecticut Yankee describes the final adventure of this nineteenth-century hero in tones of blackest irony, from chapter 40, "Three Years Later," to chapter 44, "A Postscript by Clarence." According to the conventions of myth,

When [the hero] arrives at the nadir of the mythological round, he undergoes a supreme ordeal and gains his reward. . . . Intrinsicly it is an expansion of consciousness and therewith of being (illumination, transformation, freedom). The final work is that of return. . . . At the return threshold the transcendent powers must remain behind; the hero re-emerges from the kingdom of dread (return, resurrection). The boon that he brings restores the world (elixir).⁴⁸

The finale to Hank's adventures corresponds to this description in a negatively ironic way. Hank's supreme ordeal is the Battle of the Sand-Belt; the imagery of the preparations for and the progress of that final conflict evokes a sense of chaos, darkness and destruction, of Eden blasted, as Hank's "innocent-looking garden" (p. 474) of missiles is exploded.

I touched a button and shook the bones of England loose from her spine!

In that explosion all our noble civilization-factories went up in the air, and disappeared from the earth. It was a pity, but it was necessary. We could not afford to let the enemy turn our own weapons against us. (pp. 476-478)

The Yankee's expansion of consciousness is only an awareness that he has been defeated by his own triumph, as he and his helpers are trapped, surrounded by masses of rotting corpses. His return to the present, like his voyage to

the past, is not through choice. It occurs through the machinations of Merlin, in the novel's final act of betrayal. His only acquisition is the knowledge that the whole of his efforts has been for nothing. He is found by 'M.T.', a broken and dying man, a sad and splintered reflection of the image of Arthur, the true romantic hero, who will also reawaken after centuries, but in triumph, to renew his ideal quest.

As Hank's mythic journey moves toward its final apocalyptic battle, to final revelation and apotheosis, the completion of the cycle, there is a gigantic anti-climax. Nothing is gained but the awareness that "any apocalyptic transformation, from an Eden in the past, to a utopia in the future, is all myth."⁴⁹ The age of romance is over; the hero cannot return.

The romantic idealism of the form of Hank's adventures is diminished by the ironic realism of their progression toward an absurd climax, toward the nothingness at the heart of the absurdist world-view, to which the only possible climax is death. In this sense, A Connecticut Yankee as ironic romance is a precursor of Heinlein's absurdist time-loop paradoxes and Moorcock's neofotic myth-fixations. All these works display, in their resigned pessimism, a sense of "formal irony, inevitable and just."⁵⁰

All that Mark Twain can do for the Yankee by the end of the novel is to let him die clinging to his illusions. By 1905-1906, with the creation of the Mysterious Stranger

Manuscripts, this denial of reality seems to have come true for Mark Twain as well as for his fictional character, perhaps as the result of the guilt and neurosis which haunted the latter part of his life. In this, the Yankee's experience foreshadows that of his creator's.

Unlike Malory, whose work inspired the writing of A Connecticut Yankee, Mark Twain could not leave his readers with any sense of purpose accomplished or any hope for another chance for his hero after the failed quest. This is the nature of irony, which presents "life in terms of largely unrelieved bondage."⁵¹ In A Connecticut Yankee, the determinist wins over the reformer, the realist over the romantic, the absurdist over the optimist. Mark Twain may have had the eventual disintegration of his own country in mind. Given his view of the results of industrialization, of 'the machine in the garden,' he could come to no other conclusion. In his novel of sixth-century England, the motif of time-travel permits "a going backward in order to look forward."⁵² The look backward is disappointed; the look forward is filled with despair.

Just as time travel is the tool with which Mark Twain could juxtapose the nineteenth century and the sixth, so the use of irony allows him to juxtapose the exigencies of his personal world-view against the achronic cosmological structure of the monomyth. In this way, he has exemplified one of the most fruitful ways in which science fiction draws from romance and myth. In A Connecticut Yankee, the process

of defamiliarization works on a dual level, resulting from the transposition of historical eras and the transformation of literary modes. Mark Twain's imposition of the principles of democracy and industrialization to debunk the 'ideal' world of Arthur's England also serves to hold up those principles for criticism, so that the sixth century helps to unmask the hypocracies of Mark Twain's own world. In the same way, his use of irony serves to estrange and criticize the relevance of the romantic world-view in a post-industrial world, while the presence of the romance elements forces the actual world to appear in a new light as well, one as lurid as the glare of Hank's "electric suns" (p. 485) which illuminate the thousands of dead soldiers who surround his final camp.

3

A Connecticut Yankee is a creation whose soul and body are at war with each other, mirroring the personal conflicts of its creator; it is not certain to what extent Mark Twain himself was aware of the book's basic contradictions. While The Time Machine demonstrates the same tension between romance and realism, the reader senses a quite deliberate strategy on the part of the scientifically-conscious Wells.

In this first of his scientific romances, Wells balances the conflicts between the ideal and the actual, between the pastoral and the technological, between freedom and determinism, as a reflection not only of his private concerns,

but also of the spirit of late-Victorian England. By the end of the nineteenth century, it was a spirit divided between optimism and pessimism, between faith in and fear of the advance of technology, between complacency with the historical process and apprehension at its potential for overwhelming the human race..

The Time Machine is a public statement, "giving imaginative form to many of the fears and pre-occupations of the final years of the nineteenth century."⁵³ While Mark Twain's novel is the private and tormented vision of a victim of his age, Wells's is the very public and objective vision of a social critic, a young writer at the beginning of his literary life, whose ideas were clear and whose focus was specific. As Robert Philmus asserts, "one never loses the awareness that the fantastic state of affairs in Wells's science fiction relates outward to the public world, that it displaces and reflects upon the realities and possibilities of man in society."⁵⁴ Two particular ideas stand out in sharp relief in The Time Machine: the first, that complete faith in science is bound to disappoint and, the second, that unquestioning dependence upon the progress of evolution might also be mistaken.

In 1891, in an essay titled "The Rediscovery of the Unique," Wells makes the following point about the development of scientific knowledge:

Science is a match that man has just got alight.
 . . . It is a curious sensation, now that the preliminary splutter is over and the flame burns up

clear, to see his hands lit and just a glimpse of himself and the patch he stands on visible, and around him, in place of all that human comfort and beauty he anticipated -- darkness still.⁵⁵

This would certainly have provided a fitting introduction to The Time Machine, as it contains one of Wells's most effective images, that of the light threatened by darkness. The Time Traveller journeys into the "vast ignorance" (p. 117) of the dark future, himself representative of the light of reason and science. He is overwhelmed by the "great darkness" (p. 109) which he discovers at the end of time; neither human reason nor knowledge can withstand it. Like Mark Twain, Wells uses the image of the eclipse to prefigure the ultimate catastrophe; unlike Mark Twain, he permits no final escape into the unreality of dreams.

True, upon his return, the Time Traveller examines his laboratory and concludes: "I might have slept there, and the whole thing have been a dream" (p. 111). But only for a moment is he tempted by this evasion of the awful truth. Wells the realist would not deny the reality of the great dark; at most, he would only offer an apology for having brought his readers "out here in the cold" (p. 114).

Light and dark imagery pervades The Time Machine, establishing expectations in the reader which are ultimately and ironically disappointed. The facile moral stance invited by the equation of light and dark with Good and Evil crumbles before the vast amoral movements of the mechanical universe. Both the pastoral Garden aboveground and the

mechanized Underworld, like the beautiful, harmless Eloi and the ugly, carnivorous Morlocks, are finally stripped of their moral equivalences and revealed as equal though opposite results of natural forces upon which mankind may not impose its artificial ethical standards. The ironic image of the little light struggling against the overpowering darkness serves finally to depress both the scientific and moral pretensions of mankind.

Irony pervades the critical strategy of The Time Machine, just as romance provides its narrative structure. On this level, Mark Twain and Wells have created literary cousins. It is, however, the very different visions of these two writers which result in the very different characteristics of their narrative progeny.

The Time Traveller, Everyman as scientist, like the Yankee is precipitated into a world of adventure and wonder. The object of his quest, however, is not power but knowledge. Ketterer had identified the Time Traveller with Oedipus: "The presence of the Sphinx suggests that, like Oedipus, the Time Traveller must solve a riddle," and the answer, as it was for Oedipus, is "man." Ketterer points out that "both stories lead to moments of appalled recognition,"⁵⁶ and the knowledge gained by both Oedipus and the Time Traveller is destructive in the extreme. Not only does this support an approach to The Time Machine as a parable of knowledge, but it also recalls Larry Niven's statement that the element of fatalism in a time-travel narrative lends it a

quality "reminiscent of Oedipus Rex; when well done it has the flavor of a man heroically battling against Fate -- and losing."⁵⁷ Like Oedipus, the Time Traveller is caught in a determined web of circumstance which his knowledge only makes more painful.

Although the Time Traveller seeks knowledge, not power, a case can be made for their being the same, since the power of technology results from the discoveries of science. It is Hank's technological awareness which gives him power in pre-industrial England, while it is the Time Traveller's knowledge which gives him mastery over the movements of time. According to Darko Suvin, "power is the final arbiter, fate, or nemesis in science fiction,"⁵⁸ and certainly The Time Machine is about the power of science on the one hand and the power of cosmic evolution on the other.

Even as the limits of science provided Wells with literary ammunition, so did the question of evolution. In 1894, in "The Extinction of Man," Wells wrote that "in the case of any other predominant animal the world has ever seen, . . . the hour of its complete ascendancy has been the eve of its complete overthrow."⁵⁹ So much for the myth of progress. Thus it is that the Time Traveller, the inventor par excellence, is forced to witness the inevitable decline of mankind and of his world, in spite of the wondrous power which has brought him to that very edge of existence.

Wells's own experience and background helped to form many of the ideas which recur in his scientific romances.

As Mark Hillegas explains, "to understand the darkness and pessimism of the early stories and scientific romances, we must remember that they were written against the background of grave social injustice and economic distress, socialist agitation and labor unrest."⁶⁰ As a member of the lower middle-class, Wells felt himself a victim of the class system for the first part of his life and he struggled to 'rise above' the social milieu into which he had been born. That struggle was a spur to the social criticism which is the explicit theme of The Time Machine, the Marxist-influenced warning that the present class system would lead to disaster. According to Wells, however, that disaster would not take the form of a class revolution, but of the steady decline of all classes.

This idea of devolution was the legacy of T.H. Huxley, Wells's major influence at the Normal School of Science in London. Huxley adapted Darwinian evolutionary theory to develop a much more negative world-view than had previously been held. In the face of the inescapable process of entropy, Huxley's outlook was pessimistic.⁶¹ He also repudiated the belief that evolution guarantees improvement. The devolution of man and the idea of the entropic universe are central to The Time Machine and represent the core of Wells's approach to the nature of time and the processes of history, at least at this stage of his career. Huxley also taught that evolution is morally neutral; "men must create their own cultivated garden of moral order within an amoral universe."⁶²

This particular dictum may well have influenced Wells's deliberate and ironic debunking of the ethical beliefs of his Time Traveller, revealing them as the fictions they are, fictions particular to the Victorian intellectual.

Like Mark Twain, Wells believed himself to exist in a rigidly determined universe. His Time Traveller contemplates "the slow inevitable drift of [the] movements [of the stars] out of the unknown past into the unknown future" (p. 79). His science-fictional future is extrapolated through the logic of cause-and-effect evolutionary theory based upon his own nineteenth-century present. His time machine travels along a linear time-line, one along which "our consciousness moves intermittently in one direction . . . from the beginning to the end of our lives" (p. 4).

Wells's belief in the existence of this unique and absolute time-line allowed him to develop his pseudo-scientific theory of time as the fourth dimension. Both past and future are real and fixed, ensuring that the Traveller will always be able to return along the same path and enabling him to set forth on that path again in his final journey. The heat-death of the universe is also an inevitability, predicted by the science of the times and contributing to the "cosmic pessimism" which is so much a part of The Time Machine and, on a larger scale, of the end of the Victorian period. According to Mark Hillegas, "it is Huxley's cosmic pessimism which gives meaning and permanence to this first anti-utopia of the modern mechanical and scientific age."⁶³

In spite of the fact that Wells has sometimes been claimed as a kind of proto-relativist,⁶⁴ due to his speculations about time as the fourth dimension, his use of time travel demonstrates his adherence to the Newtonian universe-model which is predetermined, linear and sequential. The second law of thermodynamics supports this belief in the linear nature of time, since "the association of entropy increase with time's arrow is in no sense circular; rather, it both tells us something about what will happen to natural systems in time, and about what the time order must be for a series of states of a system."⁶⁵

In his sequel to The Time Machine, David J. Lake reinforces the Wellsian approach to time theory quite explicitly. While The Man Who Loved Morlocks (1981) does not measure up to its original in either style or inspiration, it is of interest for its elucidation of several opinions about the nature of time popular to the Victorian era. Lake has his version of the Time Traveller conclude that

What is once done is not to be undone or prevented by previous interference. This was not due to any defect of my machine: it followed from the nature itself of Time and causation. And it must be so: otherwise one would have the most ludicrous paradoxes.

Lake's Traveller also refutes the possibilities of travelling into the past "because going back in Time entails circular causation." Future time travel is acceptable "because we do that all the time: at sixty seconds to the minute."⁶⁶ Although Wells's Time Traveller is able to go backward in time, he only does so in order to return to his own present, never

to visit his own past. Lake has developed this idea to imply the impossibility of backward-in-time travel into one's own past while not precluding a return from a journey into the future.

Wells's chief liberty with contemporary time theory lies in his use of time travel itself, although as long as the Traveller is moving into the future, he is merely accelerating the temporal journey which we are all making as we move from today toward tomorrow. His return, however, is much more a strain upon orthodox theory and the presence of the two white flowers from the future in the Traveller's present may certainly constitute a temporal paradox.

On the literary level, however, these flowers are justified by their symbolic value. Wells himself was caught between his anxiety for the future and his hope that mankind might yet act to avert catastrophe. As J.P. Vernier suggests, "the fact that evolution meant a constant progress toward death seems to have struck Wells as something at once inescapable and unacceptable."⁶⁷ Thus he permits the Traveller to keep Weena's flowers. According to Philmus, they signify that "the future is real, possibly catastrophic, but not beyond redemption. . . ."⁶⁸ In the same way, the mystery of the Sphinx is never resolved, and the ultimate fate of the Time Traveller, representative of his species, is left open to speculation. While the final apocalypse seems inevitable, the direction of the human race within its allotted span of time might yet be salvaged. Perhaps, as J.O. Bailey suggests

in his discussion of cyclical future histories, "it is possible for us to sign a pact with Fate for progress in our time."⁶⁹

Certainly there is little other indication of hope offered in the book as a whole. Wells's premise seems to be that Victorian England has launched itself upon a course of almost inevitable disaster and that, whether or not such a disaster is averted, mankind is certainly faced with "that remote and awful twilight" (p. 110) of his world. As it does for J.G. Ballard, the "terminal beach" of the final vision represents for Wells both the beginning and the end of life on earth. This suggests on the surface a cyclical view of history, but for both Ballard and Wells, once the circle is completed, there will be no repetition of the cycle. As Mark Rose explains,

history in The Time Machine becomes a parabolic curve of rise and fall. . . . Meaning is attributed to time not only by absorbing the idea of time into the protagonist-antagonist structure of romantic narrative but also by projecting a spatial pattern onto history. The shape of history becomes the meaning of history.⁷⁰

For Wells, the course of life does indeed follow the seasonal progressions of nature in an apparently cyclical fashion; these seasons, however, will never be renewed, at least not in the experience of our solar system. In 802,701, the Time Traveller experiences the autumn of his world, languid and sedated; the demonic vision of the terminal beach shows him the ultimate winter, bitterly cold and "all bloody under the eternal sunset" (p. 108). Soon even this

lurid light begins to fall as the eclipse which symbolizes the end of time for life on earth begins to overwhelm the scene. Winter is the end, the heat-death, the apocalypse; the world is fated to run down toward its final extinction. Wells's narrator is left to conclude: "If that is so, it remains for us to live as though it were not so" (p. 117).

Like the Yankee's, the Time Traveller's experience raises him to the stature of a prophet, bringing visions of the future back to his present. In this case, however, he is a Cassandra; his prophecies must be ignored to preserve the peace of mind of his listeners. The Time Machine ends with the suggestion that man will be forced to construct acceptable fictions in order to come to terms with the uncaring and relentless nature of his universe.

The very term 'scientific romance' indicates the dual nature of Wells's time-travel story. Structurally, it is clearly a version of the romantic quest and has otherwise been identified in such terms as "ironic myth" and "ironic romance."⁷¹ Kenneth Newell considers it "one of the most successful examples of [the] merger of romance and realism."⁷² As in A Connecticut Yankee, its narrative sequence both parallels and diverges from that of Campbell's monomyth in significant ways.

In The Time Machine, the Traveller's identification with his own species and time is established in the first two chapters. By chapter 3, he has undertaken his descent into the 'underworld' of the future. Appropriately, he describes

time travel as a falling sensation, "of a helpless headlong motion" (p. 23), like "the feeling of prolonged falling" (p. 26). In this version of the romance, he even meets the "shadow presence that guards the passage,"⁷³ in the form of the White Sphinx who watches over the garden of the last of mankind much as God watched over the original Eden.⁷⁴

Unknown to the Time Traveller, it is the Sphinx that symbolically contains the knowledge which is his goal. Thus it is both the beginning and the end of his quest. It is no accident that his secondary quest, for his stolen time machine, leads him back to the Sphinx nor that he must enter the Statue itself to retrieve his vehicle. In chapter 5, the Traveller confronts the Morlocks and rescues Weena, who becomes the helper-figure in this future myth. Like Clarence, she pays a high price for her loyalty to the hero. During the search for his machine, the Traveller descends into a real underworld in chapter 6, exploring the caverns of the Morlocks, where "great shapes like big machines rose out of the dimness, and cast grotesque shadows, in which dim spectral Morlocks sheltered from the glare of his lit match" (p. 70). His confrontation with the forces of Evil is once again as unresolved as his initial meeting with the Sphinx. Unsuccessful, he returns from the underworld.

At first, the Traveller believes that his 'supreme ordeal' occurs in chapter 9, in the battle which results in the death of Weena, the forest fire, and the destruction of many of the Morlocks. The terms of his struggle are appropriately

grim; for the Traveller, it was a "nightmare" (p. 98) and the surviving Morlocks are "damned souls" (p. 99) on whom he can now afford to take pity. Having succeeded in this climactic battle, he then proceeds to wrest his machine from inside the pedestal of the Sphinx and is free to return to his own world, having also apparently gained the "expansion of consciousness"⁷⁵ which is promised to the victorious hero. He now recognizes the Eloi and the Morlocks for what they really are and has finally admitted to himself the gruesome truth of their symbiotic relationship.

However, the supreme ordeal for this ironic hero is still to come. He seeks knowledge and knowledge he will have, all of it, whether he wants it or not. It is at this point and because of the story's overwhelmingly ironic perspective that Wells breaks the romantic pattern and has his hero continue the journey rather than return immediately to his starting point. The Traveller's two leaps into the unimaginable future provide him with the ultimate "expansion of consciousness." This is certainly an apt description of the kind of apocalyptic awareness granted to him in the far future.

Wells's vision of the end of the world reinforces the mythic character of The Time Machine and actually draws the work beyond the area of romance, which tends to function on a more human scale. In the final sequences of the Traveller's journey, Wells moves from extrapolation into myth-making and the power of these passages ranks him among the most effec-

tive of modern apocalyptic writers. David Hughes ascribes both the scope and the ironic impact of Wells's vision to the fact that he here abandons his determined realism: "the perspective starts at the human viewpoint and removes without warning to the non-human,"⁷⁶ that is, from the diminishing level of ironic romance to the magnification of myth.

Overcome by this glimpse of the fate of his world, the Traveller, like Prometheus, must pay for the knowledge he has wrenched from the depths of time. Unable to return permanently to his own time, he must set out again on the mythic journey, a Wandering Jew on a time machine cursed with an eternal restlessness. As in Twain's novel, the irony of the narrative is in conflict with its romantic structure. In The Time Machine, the circular pattern of the hero's romantic quest is not only completed but renewed. But juxtaposed against the ongoing sequence of the romance is the bleakly finalized cycle of the Traveller's world at the end of its round of birth and death.

Patrick Parrinder has also identified the Time Traveller as a Prometheus-figure, bringing knowledge of the future back to the present in the hope that such a boon "could transform man's sense of the meaning and possibilities of his existence."⁷⁷ However, because he is an ironic hero, this illumination lighting up the darkness of time proves not only fruitless but actually conducive to despair. The truth in this instance is vastly more harmful than ignorance.

In much the same way, the Yankee is punished for play-

ing Prometheus's role, manipulating the powers of the industrial age in an attempt to re-shape the past. Ketterer refers to Hank's efforts as "bringing to the Middle Ages the fires of the nineteenth century."⁷⁸ For both the Yankee and the Time Traveller, the fires of reason, knowledge and power devour everything in their paths. One thinks of the Traveller's inadvertent forest fire which provides the novel with one of its most demonic scenes. This fire certainly indicates the double nature of the powers of science, which can both enhance and preserve, but which are also apt to endanger and destroy in spite of the intentions behind them.

In The Time Machine, the sense of irony continually undermines the romantic structure in order to establish the work's thematic tensions. As in A Connecticut Yankee, the structure of romance must bear the burden of a determinedly pessimistic view of time and the specific romantic elements of the narrative are constantly undercut by the irony of the actual events. Shlomith Rimmon-Kenan has indicated that romance and irony display "related plot-patterns," their differences hinging upon which of "two directions the story can subsequently take."⁷⁹ Both Mark Twain and Wells have provided examples of how these two modes may be merged for specific effect, Wells more successfully because more consciously. What both writers have achieved through the use of "modal counterpoints" indicates the affinity of science fiction for the elements of both romance and realism.⁸⁰

Like the Yankee, Wells's hero finds himself in a battle

against Evil in his support of the Eloi against the Morlocks. While his intentions are patently honorable, the terms of the conflict are rendered meaningless. Wells wrenches the Traveller out of the area of moral evaluations, precipitating him into a cosmic situation in which Good and Evil are no longer viable frames of reference, but are overwhelmed by Necessity.

The dichotomy between romance and ironic realism created by Wells in The Time Machine remains unresolved at the end of the work. The heroism of the Traveller in his scientific quest for knowledge is genuine. This results in the greater irony as his quest is successfully completed. Over and over he is forced to re-evaluate the terms of the future, extrapolating theory after theory to explain the world of 802,701 as he perceives it. Each new discovery which forces a fresh evaluation diminishes his status as romantic hero, until he is left with the realization that the terms of the heroic battle are false. Wells's ironic undermining prevents the heroic quest from achieving its deserved stature, at least according to the conventions of romance. On the other hand, the efforts of the Traveller to come to terms with the cosmic irony do display a certain heroism, even if it is only that of an ordinary individual bravely facing an extraordinary situation.

The Time Machine is a very deliberate ironic romance, committed to the kind of realism which Wells required to help suspend the natural disbelief of his audience and to faithfully adhere to the scientific thinking of the nineteenth

century. The very strategy of logical extrapolation which is so characteristic of Wells's science fiction is based upon the nineteenth-century world-view. As Parrinder notes, "it reflects the basic premise of science, which is that all things can in principle be known because they are subject to 'natural law.'"⁸¹ Using the scientific method of his day, Wells created a vision of the end of the world which aptly captures the fin de siècle spirit of the times, the dark side of the Victorian world-view.

Herbert Sussman observes that Wells was "the first scientifically trained writer of the machine age [for whom] the machine becomes the symbol of the specifically scientific mind, and the scientific romances [become] fables illustrating the inadequacy of pure reason divorced from an intuitive morality."⁸² Unlike many of his contemporaries, Wells did not look to the past for an answer to the dilemma of his age. Where Morris and Ruskin dreamed of a pastoral pre-industrial utopia, Wells's vision is aimed firmly toward the future. The pastoral garden in The Time Machine, like Mark Twain's garden of old England, is a sham. The Eloi, the fruit of that garden, are "mere fatted cattle" (p. 81), their beauty the last autumnal flickering of a degenerated humanity. In them Wells created one embodiment of the Victorian apprehension of decadence,⁸³ elsewhere demonstrated in, for example, Tennyson's *Lotos Eaters* and Wilde's *Dorian Gray*.

The point of view of Wells's hero is that of the late-Victorian intellectual. Through his eyes, we are made aware

of the nineteenth-century mind adjusting to a series of discoveries that shake the very foundations of Victorian complacency, a technique Wells would use again in his later and far less successful time-travel story, When the Sleeper Wakes (1899).⁸⁴ The Time Traveller is also the modern anti-hero caught up in "the facile ironies of an endlessly turning cycle."⁸⁵ Like Heinlein's time travelers, he seems doomed to repeat his journey and is finally lost in a spiral which points toward nothingness, the cosmic end of time, the ultimate expression of entropy. While Mark Twain breaks the vicious circle of time by denying its very existence, Wells transforms that circle into an entropic spiral culminating in death. More so even than the Yankee, but like the narrator of the last of Mark Twain's Mysterious Stranger Manuscripts, the Time Traveller begins to resemble the alienated modern protagonist, adrift in futility. Having attained that which he sought, he becomes the victim of a cosmic catch-22.

Parrinder argues that the Traveller achieves heroic stature by undertaking his final journey into time.⁸⁶ Under the circumstances, he is more likely the victim of the same Necessity which impels his universe. It is the nature of irony to examine the traps into which men inadvertently fall; it is not often within the scope of the ironic process to permit of any escape from these traps. There may also be another logic at work in The Time Machine which demands the disappearance of the Traveller. Suvin suggests that the

process of accelerating devolution logically ends at "zero, or non-existence."⁸⁷ In other words, the disappearance of the central character is a kind of prefiguration of the disappearance of all life at the end of the cosmic round. Philmus links the Traveller's disappearance to the establishment of the reality of his vision: "The demand that his vision be literally true . . . requires the Traveller to be no more real than it is; and his return to the future fulfills this demand."⁸⁸

The inability of the Time Traveller to return permanently to his own time completes the process of alienation initiated by his first journey. If romance traditionally moves toward integration; ironic romance frequently depicts the opposite movement, from identification to alienation. No one seems more a man of his time than the Traveller before he sets out; scientist and inventor, he enjoys a secure position in his secure world. The further he travels into the future and the more he realizes the consequences of the present, the more estranged he must become from that present. Like Mark Twain, Wells sees time travel in terms of separation, trauma and complete and inevitable alienation.

In his use of irony to undermine traditional Victorian attitudes, Wells was also part of a mainstream literary trend which includes the works of writers such as Tennyson and Thomas Hardy, for whom "the idea of progress had altogether lost its authority, [while] enough of the concept still remained to provide occasional irony, point of contrast, or

even theme."⁸⁹ In the time-travel story, Wells found what Sussman has termed "a new form for an old argument;"⁹⁰ while his concerns are typical of his age, his narrative strategy is the precursor of a new literary genre whose impact was only beginning to be felt at the end of the century. Wells's apocalyptic concern is typical of his time but, like his central motif, it continues to be a major theme of science fiction today, "whether presented literally or as a metaphor for major change."⁹¹ In both A Connecticut Yankee and The Time Machine the apocalypse is a real event; for Wells especially the end is the actual end of the world, a real death. Both works display facets of the anti-utopian vision, the conviction that the myth of progress is a false myth, that the consequences of the present will be a future which mankind must fear.

Time travel becomes for Wells a fictional strategy with which to address his concerns for the present through the juxtaposition of the nineteenth-century man of science against his own sadly degenerated future. That future setting provides the distance from which the reader is invited to consider the present as the seed of a potential catastrophe. Wells, however, in his refusal to reconcile the conflicts in his novel, allows the reader to decide for himself whether such a future may be averted, even if only temporarily. Rather than destroy all time and all reality as Mark Twain was driven to do, Wells leaves his narrator contemplating the two white flowers left behind by his Time

Traveller, symbols of the "gratitude and . . . mutual tenderness [which] still lived on in the heart of man" (p. 118). Once again, a ray of light illumines the surrounding darkness; the reader is invited to speculate upon the outcome for himself. It is this awareness of the potential of the present which enables Wells to indicate the possibilities of salvation: the White Sphinx poses problems but does not answer them. As will be discussed in the following chapter, this sense of future possibilities has become an increasingly important concept in many modern works of science fiction.

According to Wells's biographers, Norman and Jeanne Mackenzie,

A sense of time, as the dimension against which man's past and future might be measured, and his present complacency judged, was the most original contribution that Wells brought to English fiction. His feeling for the span of time was both biological and cosmic. . . .⁹²

A work whose central motif is based upon the nature of time and whose central theme is a consideration of the consequences of time and evolution could not appeal too strongly to an age so divided between hopes and fears of the future.

4

It is no wonder that The Time Machine has retained its appeal over the last ninety years: "The sense of an age coming to its end and opening out into an unknown future, which Wells expressed in his fantasies, is an integral part of today's background."⁹³ Apocalyptic hopes and fears are as much a staple of the twentieth century as they were of the

nineteenth; "the paradigms of apocalypse continue to lie under our ways of making sense of the world."⁹⁴

Wells's influence upon the development of science fiction exceeds that of any other writer in the field. Hillegas reminds us that Wells "developed or invented such themes as time travel, the destruction of the earth by cosmic accident, the return of mankind to barbarism after the collapse of civilization, the journey to another world in space, the invasion from space, all to comment on life in a mechanical and scientific age."⁹⁵ When one considers those motifs listed by Stanislaw Lem as the major themes of science fiction -- "of travel in time, of constructing a robot, of cosmic contact, of cosmic invasion, and of ultimate catastrophe for the human species"⁹⁶ -- Wells's contribution to the genre becomes absolutely staggering.

In the invention of his time machine, Wells created a work against which all other time-travel narratives are measured. One of the more entertaining results of his novel is Alfred Jarry's essay on "How to Construct a Time Machine" (1899), a convincingly scientific-sounding and absurdly impossible exercise in logical eccentricity. And Jack W. Meiland has designed "A Two-Dimensional Passage Model of Time for Time Travel" (1974) which aims at justifying the possibilities of Wellsian time travel.

The very extent to which some modern writers have sought to avoid the use of time machines in their stories only serves to emphasize the impact of that first machine. In

1981, Fred Saberhagen edited a collection of time-travel stories, challenging the contributors to avoid "Mr. Wells' all too convenient aid."⁹⁷ The back cover of A Spadeful of Spacetime boasts that it "unwrites H.G. Wells," offering "new original ways to bring together the future, past and today -- without Time Machines!" In yet another back-handed compliment, The SF Books of Lists presents "Twelve Ways of Travelling in Time without a Time Machine,"⁹⁸ which lists everything from suspended animation to cyronics, from faster-than-light travel to the accidents of nuclear radiation. Perhaps the most bizarre method occurs in Ray Nelson's appropriately titled "Time Travel for Pedestrians" (1972), in which a combination of drugs and masturbation provides the counterculture's alternative to more orthodox methods.

Mark Twain and H.G. Wells were involved in the development of one of the central conventions of the new genre of science fiction. For Rimmon-Kenan, the value of such conventions is that "they establish a kind of contract between the text and the reader, so that some expectations are rendered plausible, others ruled out, and elements which would seem strange in another context are made intelligible within the genre."⁹⁹ Through their early exploration of the literary potential of the time-travel motif, Mark Twain and Wells established much of the groundwork for one of science fiction's most useful and popular conventions; in the process they virtually invented a new literary approach to the questions and paradoxes of time which have become so much

a part of our modern consciousness.

H. Bruce Franklin has suggested that

The most remarkable thing about the time travel literature of the nineteenth century is that it now, in the twentieth century, represents in itself a kind of time travel for us. To move into past visions of the future or past is to shift our consciousness in time in extraordinary ways.¹⁰⁰

If The Time Machine is still popular today, it can be attributed to its secure place in the ranks of science fiction and to the breadth of Wells's public vision which was untrammelled by the private obsessions which influenced the development of A Connecticut Yankee.

Notes

¹H.G. Wells, Preface, The Works of H.G. Wells, The Atlantic Edition, Vol. I (New York: Charles Scribner's Sons, 1924), p. xxiii.

²H.G. Wells, Preface, Seven Famous Novels by H.G. Wells (New York: Knopf, 1934), n.p.

³Robert Heinlein, Prefatory Note, "All You Zombies--," in The Worlds of Science Fiction, ed. Robert P. Mills (London: Victor Gollancz, 1964), p. 126.

⁴Patrick Parrinder, Science Fiction: Its Criticism and Teaching (New York: Methuen), 1980, p. 87. It should be noted here that Darko Suvin discusses these two issues in his recent bibliographical work, Victorian Science Fiction in the UK: The Discourses of Knowledge and Power (Boston: G.K. Hall, 1983).

⁵Gary K. Wolfe, The Known and the Unknown: The Iconography of Science Fiction (Kent, Ohio: Kent State University Press, 1979), p. 17.

⁶David Ketterer, "Power Fantasy in the 'Science Fiction' of Mark Twain," in Bridges to Fantasy, ed. George E. Slusser, Eric S. Rabkin and Robert Scholes (Carbondale and Edwardsville: Southern Illinois University Press, 1982), pp. 133, 131.

⁷Leo Marx, The Machine in the Garden (New York: Oxford University Press, 1964). Marx's book analyzes the uneasy relationship between the pastoral and the technological which he identifies as part of the nineteenth-century American consciousness.

⁸Mark Twain, A Connecticut Yankee in King Arthur's Court, ed. Bernard L. Stein (Berkeley: University of California Press, 1979), p. 128. All subsequent references to this work appear parenthetically in the text. This is a critical edition which uses Mark Twain's original manuscript as its copy-text and, on the basis of W.W. Greg's theory of copy-text, has adopted as emendations Mark Twain's revisions in the Century magazine excerpt (1889) and in the first American edition of the novel (1889).

⁹ David Ketterer observes that "the work is remarkable for the number of explosions that occur. . . ." See New Worlds for Old: The Apocalyptic Imagination, Science Fiction, and American Literature (Garden City, New York: Anchor-Doubleday, 1974), p. 214.

¹⁰ H.G. Wells, The Time Machine, in The Works of H.G. Wells, The Atlantic Edition, Vol. I (New York: Charles Scribner's Sons, 1924), pp. 26, 27. All subsequent references to this work appear parenthetically in the text. Wells's Sphinx is perhaps the most powerfully evocative image in The Time Machine. In No Enemy But Time, Michael Bishop salutes Wells's work by naming his fictional government's time-travel project 'White Sphinx.'

¹¹ David J. Lake, "The White Sphinx and the Whitened Lemur: Images of Death in The Time Machine," Science-Fiction Studies, 6 (July 1979), 78. Lake's article is a useful analysis of the death symbolism in Wells's use of color in The Time Machine.

¹² Science Fiction: Its Criticism and Teaching, p. 96.

¹³ Judith Fetterley, "Yankee Showman and Reformer: The Character of Mark Twain's Hank Morgan," Texas Studies in Literature and Language, 14 (Winter 1973), 678.

¹⁴ J.P. Vernier, "Evolution as a Literary Theme in H.G. Wells's Science Fiction," in H.G. Wells and Modern Science Fiction, ed. Darko Suvin and Robert M. Philmus (Cranbury, N.J.: Associated University Presses, 1977), p. 87.

¹⁵ Mark Rose, Alien Encounters: Anatomy of Science Fiction (Cambridge, Mass.: Harvard University Press, 1981), pp. 100-101.

¹⁶ See, for example, Philip Klass, "An Innocent in Time: Mark Twain in King Arthur's Court," Extrapolation, 16 (Winter 1974), 29; and David Ketterer, "The 'Science Fiction' of Mark Twain," Mosaic, 16 (Fall 1983), 67.

¹⁷ "An Innocent in Time: Mark Twain in King Arthur's Court," 30, 31.

¹⁸ "The 'Science Fiction' of Mark Twain," 77.

¹⁹ Justin Kaplan, Mr. Clemens and Mark Twain: A Biography (New York: Simon and Schuster, 1966), p. 281.

²⁰ James M. Cox, "A Connecticut Yankee in King Arthur's Court: The Machinery of Self-Preservation," in Mark Twain: A Collection of Critical Essays, ed. Henry Nash Smith (Englewood, N.J.: Prentice-Hall, 1963), pp. 124-125.

²¹The Portable Mark Twain, ed. Bernard DeVoto (New York: The Viking Press, 1946), p. 775.

²²Mark Twain's Notebooks and Journals, Vol. III, ed. Robert Pack Browning, Michael B. Frank and Lin Salamo (Berkeley: University of California Press, 1979), p. 78. Mark Twain jotted down this note in 1884.

²³Kaplan, Mr. Clemens and Mark Twain, p. 294.

²⁴"A Connecticut Yankee in King Arthur's Court: The Machinery of Self-Preservation," p. 125.

²⁵In his discussion of Edward Bellamy's Looking Backward, David Ketterer mentions Julian West's dissatisfaction with "the unhappy nature of his times," that is, with nineteenth-century Boston. His realization that he has slept into the future results in another, although temporary, bout of nauseating alienation, before he finally adjusts to his new reality. Ketterer suggests that, at this point, "West is gripped by the kind of double vision that Twain . . . exploits in A Connecticut Yankee." See New Worlds for Old, pp. 108, 110. In spite of the similarities, Twain did not read Looking Backward until November, 1889, discounting any suggestion that Bellamy's work might have influenced the writing of A Connecticut Yankee. See Mark Twain's Notebooks and Journals, Vol. III, p. 526.

²⁶Ketterer, New Worlds for Old, pp. 13, 232.

²⁷Science Fiction: Its Criticism and Teaching, p. 62. For a useful analysis of the elements of romance and realism in science fiction, see Kenneth B. Newell, "Science Fiction and the Merging of Romance and Realism," Extrapolation, 14 (Winter 1972), 6-12.

²⁸Northrop Frye, Anatomy of Criticism: Four Essays (1957; rpt. Princeton, N.J.: Princeton University Press, 1971), pp. 136-137, 192.

²⁹Northrop Frye, The Secular Scripture: A Study of the Structure of Romance (Cambridge, Mass.: Harvard University Press, 1976), pp. 37, 47.

³⁰Frye, The Secular Scripture, p. 54.

³¹The Anatomy of Criticism, p. 62.

³²See Lincoln Barnett, The Universe and Dr. Einstein (2nd. rev. ed. 1957; rpt. New York: Bantam Books, 1972), p. 46. Before Einstein, time was conceived of as absolute and eternal, "a steady unvarying, inexorable universal . . . flow, streaming from the infinite past to the infinite future."

³³ Science Fiction: Its Criticism and Teaching, p. 57.

³⁴ David Ketterer, "Take-Off to Cosmic Irony: Science-Fiction Humor and the Absurd," in Comic Relief: Humor in Contemporary American Literature, ed. Sarah Blacher Cohen (Chicago: University of Illinois Press, 1978), p. 84.

³⁵ Anatomy of Criticism, p. 42. Robert Scholes criticizes Frye for imposing upon his literary system "some myth of eternal return," suggesting that, like many before him, Frye has been seduced by the security and comfort to be found in the repetition of cycles. See Structuralism in Literature: An Introduction (New Haven: Yale University Press, 1974), p. 123.

³⁶ Anatomy of Criticism, p. 223.

³⁷ Frye, The Secular Scripture, p. 54.

³⁸ Bellamy's Julian West is also the victim of illusion, when, like Hank, he awakens to find himself back in his own time. By this point, his allegiance is to the future and he too succumbs to the horror of the doubly-alienated time traveler. Bellamy, however, once he has achieved his desired narrative effect, allows West to awaken from what was really a dream and to remain safely ensconced in his future utopia.

³⁹ Anatomy of Criticism, p. 49.

⁴⁰ "An Innocent in Time: Mark Twain in King Arthur's Court," 30.

⁴¹ J.T. Fraser, "Comments on Time and the Uncanny," in The Voices of Time: A Cooperative Survey of Man's View of Time as Expressed by the Sciences and the Humanities, ed. Fraser (New York: George Braziller, 1966), p. 253.

⁴² "The 'Science Fiction' of Mark Twain," 68.

⁴³ Anatomy of Criticism, pp. 50-51. In her discussion of surface and deep narrative structures, Shlomith Rimmon-Kenan explains their relationship in this way: "Whereas the surface structure of the story is syntagmatic, i.e., governed by temporal and causal principles, the deep structure is paradigmatic, based on static logical relations among the elements. . . ." See Narrative Fiction: Contemporary Poetics (New York: Methuen, 1983), p. 10.

⁴⁴ Frye, Anatomy of Criticism, p. 187.

⁴⁵ Joseph Campbell, The Hero with a Thousand Faces (2nd ed. 1968; rpt. Princeton, N.J.: Princeton University Press, 1972), p. 30. Campbell informs the reader that he borrowed the term 'monomyth' from James Joyce's Finnegans Wake.

- ⁴⁶The Hero with a Thousand Faces, p. 245.
- ⁴⁷Ketterer, New Worlds for Old, p. 230.
- ⁴⁸Campbell, The Hero with a Thousand Faces, p. 246.
- ⁴⁹Ketterer, New Worlds for Old, p. 236.
- ⁵⁰Michael Moorcock, Behold the Man (1969; rpt. Frogmore, St. Albans, Herts.: Mayflower Books, 1970), p. 112.
- ⁵¹Frye, Anatomy of Criticism, p. 238.
- ⁵²Cox, "A Connecticut Yankee in King Arthur's Court: The Machinery of Self-Preservation," p. 118.
- ⁵³Bernard Bergonzi, "The Time Machine: An Ironic Myth," Critical Quarterly, 2 (Winter 1960), 305.
- ⁵⁴Robert M. Philmus, Into the Unknown: The Evolution of Science Fiction from Francis Godwin to H.G. Wells (Berkeley: University of California Press, 1970), p. 34.
- ⁵⁵H.G. Wells, "The Rediscovery of the Unique," in H.G. Wells: Early Writings in Science and Science Fiction, ed. Robert M. Philmus and David Y. Hughes (Berkeley: University of California Press, 1975), pp. 30-31.
- ⁵⁶David Ketterer, "Oedipus as Time Traveller," Science-Fiction Studies, 9 (Nov. 1982), 340.
- ⁵⁷Larry Niven, "The Theory and Practice of Time Travel," in his All the Myriad Ways (1971; rpt. New York: Ballantine Books, 1981), p. 120.
- ⁵⁸Darko Suvin, "A Grammar of Form and a Criticism of Fact: The Time Machine as a Structural Model for Science Fiction," in H.G. Wells and Modern Science Fiction, p. 110.
- ⁵⁹Cited by Mark R. Hillegas, The Future as Nightmare: H.G. Wells and the Anti-Utopians (Carbondale and Edwardsville: Southern Illinois University Press, 1967), p. 20.
- ⁶⁰The Future as Nightmare, p. 18.
- ⁶¹Hillegas, The Future as Nightmare, pp. 20-21.
- ⁶²Herbert L. Sussman, Victorians and the Machine: The Literary Response to Technology (Cambridge, Mass.: Harvard University Press, 1968), p. 166.
- ⁶³The Future as Nightmare, p. 30.

⁶⁴ See, for example, Mileč Capek, "Time in Relativity Theory: Arguments for a Philosophy of Becoming," in The Voices of Time, p. 436.

⁶⁵ Richard Schlegel, "Time and Thermodynamics," in The Voices of Time, p. 506.

⁶⁶ David J. Lake, The Man Who Loved Morlocks: A Sequel to 'The Time Machine' as Narrated by the Time Traveller (Melbourne: Hyland House, 1981), pp. 27, 127. Lake's is by no means the only work to take its inspiration from The Time Machine. Egon Friedell wrote his Die Reise mit der Zeitmaschine (1946) as a sequel to Wells's work, translated in 1972 as The Return of the Time Machine. Christopher Priest's The Space Machine (1976) owes its title to Wells's novella and its plot to his The War of the Worlds (1898), while the 1979 film Time After Time has a young H.G. Wells tracking Jack the Ripper through time from Victorian London to contemporary San Francisco.

⁶⁷ "Evolution as a Literary Theme in H.G. Wells's Science Fiction," p. 81.

⁶⁸ Robert M. Philmus, "Wells and Borges and the Labyrinths of Time," Science-Fiction Studies, 1 (Fall 1974), 242.

⁶⁹ J.O. Bailey, Pilgrims Through Space and Time: Trends and Patterns in Scientific and Utopian Fiction (1947; rpt. Westport, Conn.: Greenwood Press, 1972), p. 314.

⁷⁰ Alien Encounters, p. 107.

⁷¹ See Bergonzi, "The Time Machine: An Ironic Myth," 293-305; and David Y. Hughes, "H.G. Wells: Ironic Romancer," Extrapolation, 6 (Summer 1965), 32-38.

⁷² "Science Fiction and the Merging of Romance and Realism," 7.

⁷³ Campbell, The Hero with a Thousand Faces, p. 245.

⁷⁴ It is worth noting that Edward Bellamy also mentions the mystery of the Sphinx. His hero refers to the labor question as "the Sphinx's riddle of the nineteenth century." See Looking Backward, 2000-1887 (New York: The Modern Library, 1951), p. 35. In his optimism, however, Bellamy believed that the riddle would inevitably be solved; for Wells, the looming white figure remains symbolic of the unresolved dilemma. Philmus suggests that this may have been a deliberate criticism of Bellamy on the part of the more realistically-inclined Wells. See "Wells's Sphinx and Edward Bellamy," Science-Fiction Studies, 10 (July 1983), 256-257.

⁷⁵The Hero with a Thousand Faces, p. 246.

⁷⁶Hughes, "H.G. Wells: Ironic Romancer," 32.

⁷⁷Science Fiction: Its Criticism and Teaching, p. 94.

⁷⁸New Worlds for Old, p. 217.

⁷⁹Narrative Fiction, pp. 22-23.

⁸⁰In his study of Hawthorne and Melville, Richard Brodhead might have been describing the literary strategies of A Connecticut Yankee and The Time Machine: "Instead of trying to subsume varied material into a unifying and homogeneous narrative mode [Hawthorne and Melville] compose novels by bringing together and placing alongside of one another different kinds of fictions. These authors are fundamentally unwilling to delegate to any one style of vision or organization the exclusive right to represent their world. As a result they generate in their works a conflict of fictions, and the reality of their imagined world, rather than lying in anyone of these fictions, comes into existence in their interaction." See Hawthorne, Melville, and the Novel (Chicago: University of Chicago Press, 1976), p. 20.

⁸¹Science Fiction: Its Criticism and Teaching, p. 97.

⁸²Victorians and the Machine, p. 163.

⁸³Bernard Bergonzi, The Early H.G. Wells: A Study of the Scientific Romances (Toronto: University of Toronto Press, 1961), pp. 48-49.

⁸⁴Sussman, Victorians and the Machine, p. 182. Not only is When the Sleeper Wakes a less interesting novel, it also regresses to a pre-technological method of time travel. Wells's protagonist, Graham, is one of those travelers who sleep for centuries and who have no control over their movements through time. The real impact of Wells's 1895 machine is that, for the first time in the history of the motif, the Time Traveller is able to direct his own temporal voyage. Another of Wells's works which concentrates on time is "The New Accelerator" (1901), which recounts the invention of a drug which accelerates the rate of living of those who use it. This humorous story examines in a light-hearted way the difference between public and private time which was of concern at this point in the history of ideas. R.A. Lafferty's "Slow Tuesday Night" (1965) is an even more frenetic extension of the same concept.

⁸⁵Frye, Anatomy of Criticism, p. 184.

⁸⁶Science Fiction: Its Criticism and Teaching, p. 96.

87 "A Grammar of Form and a Criticism of Fact: The Time Machine as a Structural Model for Science Fiction," p. 100.

88 Into the Unknown, p. 77.

89 Jerome H. Buckley, The Triumph of Time: A Study of the Victorian Concepts of Time, History, Progress and Decadence (Cambridge, Mass.: The Belknap Press of Harvard University Press, 1966), p. 63.

90 Victorians and the Machine, p. 173.

91 Ketterer, "The 'Science Fiction' of Mark Twain," 62.

92 Norman and Jeanne Mackenzie, H.G. Wells: A Biography (New York: Simon and Schuster, 1973), p. 121.

93 J.P. Vernier, "Evolution as a Literary Theme in H.G. Wells's Science Fiction," p. 86.

94 Frank Kermode, The Sense of an Ending: Studies in the Theory of Fiction (1966; rpt. New York: Oxford University Press, 1975), p. 28.

95 The Future as Nightmare, p. 12.

96 Stanislaw Lem, "The Time-Travel Story and Related Matters of SF Structuring," in Science Fiction: A Collection of Critical Essays, trans. Thomas H. Hoisington and Darko Suvin, ed. Mark Rose (Englewood Cliffs, N.J.: Prentice-Hall, 1976), p. 85.

97 Fred Saberhagen, Introduction, A Spadeful of Space-time, ed. Saberhagen (New York: Ace Books, 1981), p. 1.

98 Maxim Jakubowski and Malcolm Edwards, The SF Book of Lists (New York: Berkley Books, 1983), pp. 28-29.

99 Narrative Fiction, p. 125.

100 H. Bruce Franklin, Future Perfect: American Science Fiction of the Nineteenth Century (1966; rev. ed. New York: Oxford University Press, 1978), p. 365.

Chapter Four

Making the Future:

Woman on the Edge of Time and Timescape

"We were making the future . . .
and hardly any of us troubled
to think what future we were
making. And here it is!"
(H.G. Wells, The Sleeper Awakes)

1

This final chapter will examine two recent and significant science-fiction works in order to analyze the function of the time-travel motif in the latter part of the twentieth century. Woman on the Edge of Time (1976) is the work of Marge Piercy, an American poet and novelist. Her delineation of a future utopia is part of a resurgence of utopian writing in modern SF; it is also part of a growing body of feminist science fiction produced since the nineteen-sixties.

Gregory Benford's Timescape won the Nebula award for best science-fiction novel of 1980. It is a book about science written by a scientist; Benford is a professor of physics at the University of California and his work is part of a long tradition of SF produced by scientists, ranging from Isaac Asimov and Arthur C. Clarke to Stanislaw Lem.¹

Piercy and Benford have used time travel as the "structural pivot" around which to construct serious works which, like A Connecticut Yankee and The Time Machine, may approp-

riately be termed 'social parables.' Patrick Parrinder's distinction between parables of power and parables of knowledge is once again a useful criterion for the examination of these modern time-travel narratives. Woman on the Edge of Time can easily be interpreted as essentially a parable of power which portrays the brutality and repression of the American social/political/economic system. The central image of this angry work is war: the protagonist is enlisted to combat the overwhelming misuse of power in an oppressive society. In contrast, the main focus of Timescape is science; its story is about the struggle for knowledge and for the increase of human wisdom through the integrity of science. Like Piercy, Benford emphasizes social issues and his concern is for human freedom and moral action. Each writer describes a struggle which, whatever the differences, at bottom is the same: to help shape a future which is potential in the present but which is by no means guaranteed of existence. Insofar as both works are directed toward future possibilities they are works of optimism and faith in human progress, but their lack of assurance about what may come to be distinguishes them from the more facile complacency of the science fiction of the nineteen-forties and -fifties.

Piercy's protagonist, Consuelo Ramos, is a victim of what might best be termed 'the System,' whose power overwhelms those who do not or cannot live according to its social and economic values. Connie represents everything which the System despises and routinely annihilates: "herself with

a police record and a psychiatric record, a fat Chicana, aged thirty-seven without a man, without her own child, without the right clothes, with her plastic pocketbook cracked on the side and held together with tape." Within the parameters of her present reality, she has no place in the System. Piercy characterizes her as "a prisoner of war"² and one strand of the narrative follows her incarceration in an asylum for the criminally insane where she is eventually destroyed.

Benford's characters are much more at home in 'the corridors of power.' Like Wells's Time Traveller, they are scientists and politicians who have vested interests in the status quo. Gordon Bernstein, around whom the central conflicts of the narrative are woven, is an up-and-coming young physicist, talented and ambitious, whose future seems assured. His struggle is less personally threatening than Connie's but it is similarly desperate. Unlike the Time Traveller, Gordon's knowledge of the future requires action on the part of the political and scientific establishment and he must convince both himself and his colleagues of the reality of his communication through time. While Piercy writes about literal revolution, Benford is concerned with a revolution of ideas.

Like the works of Mark Twain and Wells, these novels are reflections upon and criticisms of their contemporary social reality. Unlike the writers of the nineteenth century, however, Piercy and Benford insist upon the necessity of human action to avert foreseeable social catastrophe. Their com-

mittment is to the near future, to the next few hundred years whose seeds are already being sown in the present. These modern works evince a more positive view of apocalypse, since it holds out hope for the generation of a new and better future.

Like Mark Twain, Piercy has produced a very personal work, the result of her own painful experiences of life in modern America; like Wells, Benford writes with a cooler, more public voice. It is interesting to note Piercy's intense focus upon her single protagonist in contrast to Benford's more diffused story-line and his depiction of several points of view. Both authors, however, in differing styles and with differing emphases, are equally committed to the creation of a viable future for the human race.

Piercy uses time travel as the means to juxtapose her present dystopian reality against the future utopia of Mattapoissett in 2137. While keeping the shortcomings of the System before her readers through her development of the main story-line, she is also able to delineate her response to it in the form of a future which contains the structures and values she perceives as lacking in the present. As a scientist, Benford has reduced time travel to the more plausible transmission of messages from the future to the past. His future, centered in England in 1998, is an ecological disaster, a warning of what may yet occur if steps are not taken to prevent it. While Piercy uses her central character as the link between present and future, the efforts of

England in 1998 to communicate with the California of 1962 provide Benford with the rationale to develop his narrative on a dual level, describing events simultaneously in both times. Each of these works presents what Casey Fredericks has described as the "literary correlative of Einstein's theory of Relativity."³ Each gives the reader a sense of multiple times and spaces simultaneously existing and inter-relating. Each indicates that there are at least several possible futures potential in the present.

It is this belief in multiple possibilities that is one of the major differences between the science fiction of the nineteenth century and science fiction today. Darko Suvin argues that, "departing from the older rationalism, a modern parable must be open-ended, by analogy to modern cosmology, epistemology and philosophy of science."⁴ In a universe whose past and future are no longer determined, in an age to which time is no longer an absolute and fixed concept, it is easier to believe in the possibilities of free will and effective action, whether for good or ill.

The end result in some recent SF works is a more optimistic treatment of the concept of apocalypse. David Ketterer states that "the ultimate critical negative extension of the word apocalyptic . . . connotes chaos or non-meaning." Both Mark Twain and Wells produced parables exemplifying this negative idea of apocalypse. Mark Twain's vision is unrelievedly nihilistic while the small ray of hope in The Time Machine is like Wells's image of the light of science smothered by the

vast surrounding darkness. But Ketterer also suggests that "the fulfillment of the apocalyptic imagination demands that the destructive chaos give way to a new order,"⁵ and this is indeed the central impetus in both Woman on the Edge of Time and Timescape. Piercy's future utopia is at least a possibility and Benford describes, if not the destruction, at least the displacement, of his dystopian future by an alternate and more positive one.

Savin contends that science fiction, to be "significant and truly relevant," must avoid "final solutions," even the solutions of apocalypse.⁶ In the light of modern scientific thought, final solutions are no longer as obvious as they were in the last century, when the laws of evolution and thermodynamics collaborated with the spirit of scientific rationalism to encourage absolute answers. True to the Principle of Indeterminacy, Piercy's parable of power suggests the promise of her new world rising from the ruins of the present patriarchal and ecologically-ignorant present but she makes it clear that an equally negative future also exists in the potential of the present. Her story is about the events of one battle, not of the final outcome of the war; her premise is that "alternate futures are equally or almost equally probable. . ." (p. 197). While Benford describes the actualization of his positive future reality, he leaves his readers aware that the dystopian mirror-image has not been destroyed, only displaced to another and parallel universe.

On the whole, Benford's vision is more positive and his

faith in both science and human nature more secure than Piercy's. To Gregory Markham, the character with whom Benford himself most identifies,⁷ science is "the iron fist of the real, inside the velvet glove of airy mathematics,"⁸ while, to Connie, science is a weapon in the hands of her oppressors and its purpose is "to turn us into machines so that we obey them" (p. 200). In a recent talk at McGill University, Piercy expressed her conviction that "our technology is monstrous because some of our values are monstrous."⁹ These opposing views of science and technology indicate the individual concerns of each writer: Benford's scientists are members of the establishment which controls the powers of science and may therefore concentrate on the search for increased knowledge; Piercy's characters are the victims of technology and consequently view the scientific establishment as the source of oppressive power. Both are optimistic, however, that the honest and open-minded acquisition of knowledge and the proper re-distribution of power may yet lead to mankind's salvation.

Mark Twain's Yankee is trapped in events over which he has lost control and the Time Traveller is helpless to prevent the death of his world. Modern science can no longer determine the movements of the universe, however, and the result is the re-emergence of free will as an active consideration in current scientific and literary world-views. As Fredericks observes, "in modern SF mythology, humanity is a self-creator. The future remains in our own hands, to fail or succeed at.

. . . We are ultimately responsible for our own beliefs and opinions."¹⁰ It is this new responsibility which is affirmed by Piercy and Benford. Power is not of itself evil, and knowledge is no longer paralyzed but is enlisted to direct that power.

This renewed vision of man's place in the universe is demonstrated by the manner in which both Piercy and Benford develop time travel as an effective device. It is important to consider once again the wish-fulfillment aspect of time travel, its use as a metaphor of power. This power proves spurious to both the Yankee and the Time Traveller. Within the philosophy of fatalism, time travel cannot overcome what it has been devised to overcome, man's helplessness in the face of time. Larry Niven rightly observes that "fatalism ruins the wish-fulfillment aspect of time travel. . . . Make it didn't happen."¹¹ The Einsteinian universe invites writers to tap the potential of time travel as a device which can change the past, which can affect the future. The utopian society in Woman on the Edge of Time uses time travel to reach into its past (our present) in order to plant the seeds which will help to ensure its actualization. The decaying future in Timescape uses time travel in a similar way, but for the opposite effect. It ensures that the past will take a new direction, displacing the already-actualized future with a more desirable one. Timescape, in particular, is the literary embodiment of "Make it didn't happen."

As discussed earlier, Niven compares the development of

the fatalistic time-travel story to the inevitability of Greek tragedy: "when well done it has the same flavor of man heroically battling fate-- and losing."¹² While stories like Leiber's "Try and Change the Past" and Heinlein's "By His Bootstraps" lack the stature of Greek drama, they are good examples of this kind of futile struggle against the structures of a determined reality. Piercy and Benford describe a view of reality which refuses to recognize such limitations.

The function of the garden image in these modern works is one indication of this renewed faith in possibilities encouraged by the Einsteinian world-view. For Mark Twain and Wells, the garden is a symbol of illusion, concealing destruction beneath its alluring surface. For Piercy and Benford, it fulfills its Edenic promise. Mattapoissett is a pastoral world, a garden healing over the inhuman landscapes of an earlier technological era. The inhabitants of this new Eden are committed to "handling conflict, promoting cooperation, coming of age, growing a sense of responsibility, getting sick, aging, going mad, dying --" (p. 125). It is significant that insanity is accepted as a sometimes necessary phase in the individual's development, while Connie's contemporary reality imprisons the insane and punishes them like criminals. In this garden, technology is by no means repudiated, but neither is it permitted to overshadow the human spirit.

Benford's garden is the California of 1962, golden and blooming. It is also a garden of scientific growth; at on

point Gordon experiences "a sudden sense that things were converging at this place, this time. The research done here was important. . . . He was grateful to be here" (p. 322). Appropriately, it is this place of sun and ocean, of scientific optimism, that is the target of the message from the dying world of 1998. Unlike Mattapoissett, Benford's garden is a kind of pre-dystopia, threatened by burgeoning technology and urban sprawl. At one construction site, Gordon observes that "the earth was scraped raw and terraced, the trucks climbing over the ruined soil like insects" (p. 17). California is the garden before, not after, the Fall. Unless the future is somehow averted, therefore, it faces ruin. The world of 1998 embodies one possible future for this threatened Eden, a potential victim of political apathy, scientific complacency and ecological carelessness. 1998 has its own garden, spreading like a plague over the oceans of the world, destroying the ocean food chains. This poisonous "diatom bloom" stains the oceans a blood-like red and is "ugly as sin" (p. 96). Humanity in the future is paying for its transgressions against the natural order of its world; the purpose of its message is to preserve the original garden, to prevent its being transformed into the demonic 'bloom' of the world of 1998.¹³ The imagery in Timescape indicates that 1998 is the mirror-image of 1962, distorted almost out of recognition, a warning to the present about the future it is even now creating. Benford's premise is that the garden may still be preserved, that there is still time to prevent the ultimate

betrayal of nature. The potential harmony between science and nature with which Piercy and Benford are concerned echoes a similar vision expressed by the poet Richard Brautigan:

I like to think
 (it has to be!)
 of a cybernetic ecology
 where we are free of our labors
 and joined back to nature,
 returned to our mammal
 brothers and sisters,
 and all watched over
 by machines of loving grace.¹⁴

Mark Twain and Wells used the 'machine in the garden' as the image of the conflict between irreconcilable elements. Like Brautigan, Piercy and Benford affirm that the harmony between science and nature must somehow be established before mankind destroys both itself and its world.

2

Marge Piercy is an American poet and novelist, an active member of the National Organization for Women and a radical feminist. Susan Kress compares her to Doris Lessing in that "she is intensely responsive to the political currents of her time, and like Doris Lessing, her primary concern as a left-wing radical is with the 'individual conscience in its relation with the collective' [Kress cites Lessing here]."¹⁵ Like Lessing, Piercy is a political writer and her focus is the politics of power in contemporary American society.¹⁶ Moreover, like Lessing she is usually identified with 'mainstream' literature. Her only previous foray into science fiction occurs in Dance the Eagle to Sleep (1970), which re-

counts an unsuccessful youth revolution against the 'Establishment.'¹⁷

Both Lessing and Piercy seem to find in science fiction a versatile literary form in which to express their concerns. Robert Scholes suggests that Lessing's move toward science fiction indicates her awareness that "the future is the only lever with which we can hope to nudge the present in a better direction. . . ."¹⁸

Woman on the Edge of Time also contains a significant parallel to Lessing's initial move in the direction of science fiction; like Briefing for a Descent into Hell (1971), Piercy's novel concerns a protagonist who, at least officially, is mad. Both works contain a certain ambiguity as to their generic nature; a case might be made for their being realist novels about schizophrenic delusions rather than SF novels about fantastic but fictionally real events.¹⁹ If Connie is insane, then Mattapoissett becomes the vision of a diseased mind and time travel the delusion of a powerless madwoman. Celia Betsky claims that "Piercy projects the ambiguity of whether reality or imagination is at work; she penetrates the relationship between science fiction and delusion."²⁰ More to the point, perhaps, is Margaret Atwood's observation that to accept Connie's insanity "undercuts the entire work," since, if the work is actually an exercise in social realism, then the System is somehow justified and there is no longer any impact to her suffering or to the development of her illusory utopia.²¹ It is far more satisfying to read Woman on the Edge of Time as science fiction which uses time travel as

a literary device to juxtapose the horrors and repressions of Connie's society against the pastoral future utopia whose existence is conditional upon her present.

It is fitting that a work whose very nature is ambiguous should contain this further uncertainty about the outcome of Connie's war. As she is informed by Luciente, her first contact with the ~~future~~ and the most vividly developed of the Mattapoissett characters, her present is a particularly delicate moment, a kind of crossroads: "Maybe [we exist]. Yours is a crux-time. Alternate futures co-exist. Probabilities clash and possibilities wink out forever" (p. 177).

As a writer committed to personal responsibility, Piercy has shaped a situation in which the choices made by individuals like Connie will have a direct bearing upon the shape of future history. Connie poisons the doctors who are experimenting with an operation to control patients' behaviour through brain implants. The reader is led to hope that their deaths will prevent this particular technological horror from proceeding any further. Thus Connie has single-handedly struck a major blow in the war for the future.²²

Piercy draws her lines of ideological opposition very clearly in nearly unrelieved shades of black and white. While this gives the book a relatively simplistic center of conflict, her intention is to concretize a passionate and political attitude. She obviously considers the present situation too desperate for subtle delineations of the gray areas. In this sense, Woman on the Edge of Time is closer to parable than to

realist novel; it recounts the romantic battle between Good and Evil. While there might exist a certain ambiguity between reality and imagination in the interpretation of the narrative, Piercy's personal position is sharp and inarguable.

Connie is given a brief glimpse of one negative alternative future to which she accidentally projects herself. This particular timestream embodies Piercy's vision of the logical extension of everything evil in the present: it is severely sexually-stereotyped, ecologically-ruined, geared to the comfort of the rich and to technological development at the expense of the human spirit. Combined with her experiences of the present, Connie's visit to this timestream compels her to a conscious commitment to Mattapoissett's struggle for actualization. It is this commitment which leads inevitably to her own 'guerilla' action in the present.

Piercy's double narrative-line supports the ambiguity of both interpretation and outcome, with the result that Woman on the Edge of Time is a work of considerable structural integrity. In the present, Connie's attempts to fight the System have led to her imprisonment in the Rockover State Psychiatric Hospital. The dramatic tension in the book is sustained by the fact that she has been chosen as one of the experimental guinea-pigs for the brain-implant operation. Piercy suggests that this particular use of technology is a first step toward the abhorrent alternative future against which the fate of her utopia is balanced. This present narrative-line is grimly realistic and has been compared to the

asylum society of Ken Kesey's One Flew Over the Cuckoo's Nest (1962).²³

Running parallel to the asylum sequences is the story of Connie's growing involvement with the people and the culture of Mattapoisett in 2137. In sharp contrast to Benford, Piercy makes only the most superficial attempt to validate the time-travel method used by Luciente's people to reach their past, a method which they eventually teach Connie. Piercy is more interested in time travel as a metaphor for the ability to be receptive to other times and other cultures. For her time travelers, it is a method of mental projection whose purpose is to "speak to those who listen" (p. 196). It is not surprising in Piercy's novel to find that, as Luciente informs Connie, "most we've reached are females, and many of those in mental hospitals and prisons. We find people whose minds open for an instant, but at the first sign of real contact, they shrink in terror" (p. 196).

Connie's exploration of Mattapoisett serves two purposes: it educates her into a new consciousness of the evils of her own present while strengthening her own sense of self, and it enables Piercy to develop the details of her utopian vision, of a pastoral, androgynous, co-operative society which rejects urban development and prizes individual growth. Connie is the pivotal character who ties these two times and places together, so that the narrative unfolds simultaneously on both levels.

Like Mark Twain's use of the past both to defamiliarize

the present and to comment upon it, Piercy's future is both a reflection and a criticism of her own present. This juxtaposition gains impact through her creation of parallel elements in her work: all the central characters, for instance, have their counterparts in the future, "mirror images,"²⁴ whose altered reflections seem to point to the wasted potential of the sad lives in Connie's present. Through this mirroring device, Piercy further formalizes the dichotomies which are at the heart of her novel.

Luciente, the woman who first contacts Connie from Mattapoissett and who is responsible for 'recruiting' her into the larger struggle, is Connie's own alter ego, the strong, intelligent, effective scientist/artist which she might have become under more favorable circumstances. She herself recognizes her connection with Luciente whom she comes to see as "a fraction of her mind, as a voice of an alternate self, talking to her in the night" (p. 252). In the same way, her friends in the asylum who are distorted and stunted by the System's efforts to force conformity upon them exist in Mattapoissett in potential, as promises of what could be but which may never be. The sad young suicide, Skip, for example, exists also as Jackrabbit, the joyous and respected artist. Even their deaths significantly balance each other in Piercy's carefully structured parable: Skip dies to escape an unbearable situation and his death is a waste; Jackrabbit is a willing casualty in the battle against Evil and his death fulfills a worthwhile life.

The self-proclaimed witch, Sybil, red-haired and passionate, a fighter even within the confined world of the asylum, might have been Diana, a healer who is respected and loved for her 'magic,' not punished for her soaring eccentricities. Diana's symbol is the moon, her affinities mysterious and mystical, her power great. There is no place for her counterpart in a scientifically-oriented and male-dominated culture. These parallels pervade the novel: Connie's lost daughter, Angelina, and Luciente's loving Dawn; her dead lover, Claud, and the massive and comforting Bee; the cold-eyed doctors and psychiatrists at Rockover and the human and caring healers and helpers of Mattapoissett. While their mission is to see illness through and to guide it back to health, Connie's doctors seem committed to destroying what they cannot understand or control. Here is her summation of the three leading 'villains' at Rockover:

Dr. Morgan admired and envied Dr. Redding, as Dr. Redding envied but did not admire Dr. Argent. Dr. Morgan was a nervous sneak who clung to the rules on the job, who loved procedures and methodology and other such words. Dr. Redding loved power and the feeling of success. He said Dr. Argent liked too much to be a man about town. She had no idea what Dr. Argent might have loved, but he was nervous now at the brink of retirement to carry off some final prize. Redding had an ulcer, Argent had a heart condition, and Morgan lied to his wife about where he spent his evenings. (p. 306)

Certainly the well-being of their patients is the least of their concerns, as they play power-politics for high stakes in the scientific community. In Piercy's universe, they are evil and their deaths are as justified as any in the conflicts of traditional romance.

The dualistic nature of Woman on the Edge of Time is sustained also by the opposing movements of the two narrative lines: there is a falling movement traced through Connie's experiences in her own time and culminating in her final personal defeat by the System, and a rising movement developed as Connie herself develops as a human being, climaxing in her final act of war, an act of violence she considers necessary to counteract the violence threatening to guarantee the unspeakable future dystopia. As for Hank Morgan, apocalypse for Connie is double-edged: the moment of her triumph is also the moment of her defeat. Piercy ends the novel with a 'transcription' of records indicating Connie's disappearance into the state hospital system. Unlike Mark Twain in relation to Hank Morgan, however, Piercy leaves her readers the final impression that Connie has fallen in a good fight and that her victory overshadows her defeat. Her apocalyptic destruction of the representatives of the 'underworld' may help to ensure the reality of the new garden-world.

Like the Yankee and the Time Traveller, Connie has been identified as a Prometheus-figure, on the basis of this moment of simultaneous triumph and downfall. Nadia Khouri argues that

It is this totalizing vision of cultural continuity, of the openness of history, of the survival of the group beyond the individual, of the individual's essential role in the life of the group, of the victory of life over death which /turns/ Woman on the Edge of Time into an optimistic tragedy. Being in every respect a Promethean novel, it yet inverts the sequence of the Promethean myth: here Prometheus bound and Prometheus stealing fire from heaven to

give it to man are telescoped in the same movement. It is in the chains of Consuelo, the Promethean heroine, that the act of unchaining inscribes itself, and utopian becoming evolves from tragedy.²⁵

Piercy cannot save her Promethean heroine but she does leave the reader with the hope that the particular strand of technological evil represented by Drs. Morgan, Redding and Argent has been permanently weakened and the dystopian future that much more unlikely to come into existence.

While the structure of Woman on the Edge of Time is very different from the circular patterning of Mark Twain and H.G. Wells, it contains several elements usually associated with the romance mode. Piercy's protagonist has descended into a "night world" and there does indeed exist an "idyllic world" as counterbalance.²⁶ Connie is involved in the eternal conflict between Good and Evil. The evocation of the heroic battle and of hope for the future are qualities linked to the conventional romance. In contrast to the romantic flavor of the book, Piercy avoids the traditionally cyclical patterns of romance and structures her work in a fundamentally linear fashion.

The elements of separation -- initiation -- return, which Joseph Campbell identifies as the basis of the monomythic structure, do not apply to this modern, more 'realistic' SF romance. While the image of the rite of passage is important to the spirit of the work, Piercy is unable to project such a pattern onto the life of a victim of the patriarchal/technological dystopia. Joanna Russ points out that, as a rule, "feminist utopias offer an alternative model of female puberty,

one which allows the girl to move into a full and free adulthood."²⁷ While such a sequence does indeed take place in Mattapoissett, this successful maturation process will never be achieved by Connie. The System does not allow its victims to become "full and free" adults, nor is it willing to share its power with such adults. Piercy consistently emphasizes that Connie's culture represses growth and refuses adult status to all but a chosen few. In the asylum, staff address patients as if they were children and Connie herself thinks of the hospital routine as a "strange twilight childhood . . . with its advancements and demotions, . . . its dreary air of grade school" (p. 83). "As long as the System refuses to acknowledge her maturity, just so long can it refuse her the ultimate recognition of that maturity, her freedom. In this sense, Piercy equates power with freedom, and the issue of the freedom of the individual to choose and to act is at the center of her work.

For Connie, there is no freedom and no opportunity for growth in the present. Nor can she escape to Mattapoissett which she can visit for only brief periods at a time. After her operation, she is unable to project herself into the future at all, as the device implanted in her brain dampens her telepathic ability to 'receive' communications from the utopian future.

Piercy inverts the usual romantic movement from the idyllic world of integration to the alienation of the underworld: Connie already exists in Frye's 'nightworld.' Her

visits to the future are limited and eventually she is unable to return at all, so that she remains trapped in the demonic present, alienated both from her own world and from the future where she belongs. As discussed in chapter 3, the impulse in romance is toward integration and identity; alienation results from illusion. For Piercy as for Wells, alienation increases with the increased awareness of reality, of the truth revealed.

Connie's own particular 'rite of passage' might be structured as follows: separation -- initiation -- further separation -- annihilation. It is a sequence which develops linearly, without any hope of a personal return or reintegration into the society of which she has never been an accepted member. The 'expansion of consciousness' generated by her visits to Mattapoissett, like the similar experience of the Time Traveller in the far future, serves only to alienate her still further from her own time. This sense of alienation impels her to take action against those she now clearly sees are her enemies, which action in turn leads to her inevitable destruction by the very powers who began the process of alienation.

This is not the cyclical sequence of the romance mode but the logical, cause-and-effect development of realism. Indeed Piercy's depiction of Connie's life in the asylum "is rendered in excruciating, grotty, Zolaesque detail, pill by deadening pill, meal by cardboard meal, ordeal by ordeal, and as a rendition of what life in a New York bin is like for those without money or influence it is totally convincing and

depressing."²⁸

Frye has argued that cyclical theories of history are also "a typical phenomenon of the ironic mode."²⁹ This is the pattern of ironically distorted romance evident in A Connecticut Yankee and The Time Machine. Not only the circular structure but also the idealized content are characteristic of romance; Mark Twain and Wells use the structure but replace idealism with ironic pessimism. Piercy's science fiction, on the other hand, presents the details and sequential development of the realist structure but replaces irony and pessimism with a romantic idealism. Connie is a romantic hero; she is the Prometheus-figure of mythology; her quest is a noble one and her conflict is against the forces of Evil. This is what makes Woman on the Edge of Time a work of 'romantic realism' in contrast to the 'ironic romances' of Mark Twain and Wells.

Darko Suvin has argued that cyclical cosmologies are, ultimately, closed systems. In modern science fiction, as in the works of Mark Twain and Wells, the cycles of romance frequently shift into "anti-utopian" exercises in futility and absurdity.³⁰ This is why Suvin discourages the positing of 'final solutions.' Piercy's linear and open-ended structure reflects exactly this refusal to prophecy any final outcome in the battle between Good and Evil, even though her ultimate position is optimistic and idealistic.

Another quality traditionally associated with realism is demonstrated in Piercy's development of Connie as a fictional character of great complexity. Her very individuality under-

cuts her standing as a romantic hero-type, while increasing the naturalistic tone of her adventures.³¹ Her quest is simultaneously personal and public: she fights for herself and for the future, with an equal commitment to both. Piercy has abandoned the determined structure of romance and produced a work which epitomizes the other side of the romantic/realist connection in science fiction, a kind of romantic realism which is becoming more popular among SF writers since the nineteen-sixties. In A Connecticut Yankee and The Time Machine, the emphasis is upon romance as structure, imbued with the spirit of a negative realism. In a work such as Woman on the Edge of Time, the emphasis has shifted to the patterns of realism, with a romantic and idealized spirit underlying the more obvious naturalism.

Scott Sanders insists that modern science fiction is "about the disappearance of character."³² More tentatively, Patrick Parrinder admits that "characterization in science fiction tends to be formulaic."³³ Piercy's detailed treatment of Connie's character belies both these attitudes and exemplifies the growth of realism in recent science fiction. Even as she surrounds her protagonist with the symbols of mass technology and describes the System's process of turning Connie into a mindless and obedient machine, Piercy does not permit her work to be about the disappearance of character, because the modern utopian impulse is a refusal to accept the death of the human spirit or the destruction of the individual. As Nadia Khouri suggests, "it is precisely where every possibility

for counteraction seems to be annihilated, where the hegemony of multiple powers seems to lead to nothing but utter submission, that the contact with a utopian world is by necessity established."³⁴ George Orwell and Aldous Huxley warned of the development of future dystopias arising from their contemporary realities; for Piercy contemporary reality is already dystopic and this present dystopia compels her to depict her version of a better future. In this sense, her science fiction is a plea for the reappearance of character, for a re-evaluation of the worth of the individual.³⁵

According to Suvin, utopian works, "the sociopolitical variant of the radically different peoples and locations of SF, are the sociopolitical subgenre of SF."³⁶ Works such as Ursula K. Le Guin's The Dispossessed (1974) and Samuel R. Delany's Triton (1976) exemplify this "sociopolitical subgenre." Woman on the Edge of Time is a part of this revival of interest in utopia, which includes many feminist works. Both Joanna Russ and Margaret Miller have discussed feminist utopias, including such works as Charlotte Perkins Gilman's Herland (1915) and Russ's own The Female Man (1975).³⁷ These utopias tend to be quite dissimilar to the tougher, more aggressive societies of pre-sixties SF. They are "a rejection of those novels about the future that tend to emphasize technological progress at the expense of human values."³⁸ Russ characterizes the societies of these new utopias as "classless, without government, ecologically-minded, with a strong feeling for the natural world, quasi-tribal and quasi-

family in structure. . . ."39 Mattapoissett is certainly a long way in space, time and ideology from Asimov's Foundation and its ilk.

Kress suggests that the utopian form is becoming popular in feminist SF because "only in some carefully imagined future or on some other planet does it seem possible to create 'positive' images of women."⁴⁰ Certainly neither the past nor the present seem to have much to offer in this respect. Beverly Friend's analysis of three time-travel novels by feminist writers, all of whom send their protagonists into the past, demonstrates their agreement "that contemporary woman is not educated to survive, that she is helpless, perhaps even more helpless, than her predecessors. . . . Men understand how the world is run; women do not."⁴¹ In Phyllis Eisenstein's Shadow of Earth (1979), the protagonist even compares herself, slightly, to Hank Morgan:

As a Connecticut Yankee in King Arthur's Court, she was a failure. Without a fortuitous eclipse, without the pocket lighter that invariably overwhelmed scores of ignorant natives in as many adventure novels, and -- more important -- without the basic knowledge to construct tools with which to build better tools, she was helpless. She realized how empty her mind was, how ineffectual she was without the technology she had always taken for granted.⁴²

The same kind of failure is described in Marlys Millhiser's The Mirror (1978) and Octavia Butler's Kindred (1979). James Tiptree, Jr. (Alice Sheldon) has suggested another alternative to the dystopic present. In "The Women Men Don't See" (1973), a mother and daughter choose to leave for an unknown planet with their alien visitors rather than to remain aliens on

their own planet.

Piercy's utopia must exist in the future, if at all. For women like Connie, single, poor and foreign, there have never yet been times or places on earth where they are not the aliens, the victims. Like Bellamy's Julian West, Connie is doubly alienated, from her own time and from the future she cannot keep, but unlike West her nightmares of present dystopia are not merely dreams.

According to Piercy/herself, utopia "issues from pain."⁴³ She writes of her growing awareness of the lack of

a sense of possibilities, of alternate universes of social discourse, of other assumptions about what was good or primary, having and raising children, being together, living and dying. There was little satisfaction for me in the forms offered, yet there seemed no space but death or madness outside the forms.⁴⁴

Thus Connie is left with literally nothing but death or madness in her efforts to live "outside the forms." But Mattapoisett as a science-fictional construct can provide an alternative to Piercy's vision of the dystopian present. Science fiction provides a rationale for the construction of a time and place outside the forms, an experimental laboratory in which to test her own solutions. Time travel is the device which allows her to relate this utopia to her present, to link present and future together, to delineate their simultaneous literary realities.

The central pain of Woman on the Edge of Time is that of alienation, not the existential anguish of man separated from his universe, but the less complex and perhaps sharper agony

of disjunction from one's own society. Like Tiptree's women, Connie has both lived among aliens and been herself the alien. Like the Time Traveller, her acquisition of knowledge proves only painful to her, ironically so, since the future is filled with promise; but it is a promise which will never be fulfilled for her. Unlike the Time Traveller, however, her new awareness does compel her to action.

Piercy's concern is with the force of illusion, a concern shared by Mark Twain and Wells, but it is not Connie's self-deception which leads to her downfall. Rather she is the victim of the deceptions of a System which tries to fit her into its own versions of reality. From this viewpoint, Connie's story is a quest which ends successfully as she lives to re-assert her own interpretation of what is true and real. Her official insanity is a plot device used by Piercy to develop this opposition between her reality and the System's; the aim of the asylum is to "turn us into machines so we obey them" (p. 200). In this kind of reality-distortion, the victims are expected to cooperate in their victimization. Connie's psychiatrist continually pressures her to admit that the operation is for her own benefit; during therapy sessions "when what she said didn't fit their fixed ideas, they went on as if it did" (p. 92). Piercy implies that it is the System which is deluded; its interpretation of reality, like its versions of the future, is both dangerous and false.

In the beginning, Connie is ready enough to accept the official version of reality; she constantly questions her own

sanity and reality of Luciente and Mattapoissett. Gradually, however, she comes to believe in the validity of her own emotions and in the world of the future. Her denial of the System's hierarchy of values and its distorted fictions frees her to act: "War, she thought. I'm at war. No more fantasies, no more hopes. War" (p. 338). Her enemies are "all the flacks of power who had pushed her back and turned her off and locked her up and medicated her and tranquilized her and punished her and condemned her" (p. 336). After her execution of what Piercy obviously perceives as war criminals, she realizes that "at least once I fought and won" (p. 375). According to Pamela Annas,

What Connie has learned, if we accept that she is sane and her society is not, is her place in history. She has learned that past, present, and future exist inside each individual and that each individual has to take responsibility for the future and act. Passivity leads to someone else shaping a future which may be lethal to all you hold sacred -- such as human freedom.⁴⁵

It is significant that Connie mistakes Luciente for a man when they first meet. Immersed in the fictions of her oppressors, she cannot recognize a woman who moves "with that air of brisk unselfconscious authority Connie associated with men" (p. 67). Her final wish for her lost daughter, the result of her new awareness of human potential, is that "she will walk in strength like a man and never sell her body and she will nurse her babies like a woman and live in love like a garden. . ." (p. 141), the garden of the promised future.⁴⁶

The concept of androgyny pervades feminist SF since it is an ideal which overcomes false oppositions. As Annas sug-

gests, it is "a metaphor . . . which allows the writer to structure utopian visions that eliminate or transcend contradictions which she sees as crucial."⁴⁷ The most interesting ramification of Piercy's androgynous utopia is her experiment with language, her substitution of the non-sexist "per" for "her" and "him" and "person" for "he" and "she." This defamiliarization of language serves as a very effective device to further estrange the culture of Mattapoissett from Connie's present reality in which language as jargon is a tool of the System. Connie herself is finally reduced to the one hundred or so pages of institutional records which bury her forever as a human being.

The sense of time is another major device used by Piercy to develop the theme of Connie's alienation. In a situation echoing the theories of private and public time, Connie's frustration in the asylum is exacerbated by her subjugation to the public time of her oppressors: in the asylum, "time wormed through her soul" (p. 83). The cycles of security are transformed into the futility of the absurd: "On Ward L-6 everyday smelled the same, looked the same, sounded the same. Patients rotated through their private cycles of day and night, touching and withdrawing, snowed by heavy drugs" (p. 86).

Kress indicates the significance of this 'asylum time':

In Connie's experience, exterior time, present time, is state time, system time, and even -- male time. She has had her present time taken away from her, and by extension her very life -- since life is time.⁴⁸

As a logical extension of the theft of present time, Connie

has also been deprived of her future, in the form of the daughter who has been taken from her for 'child abuse.' In the same way, she is cut off from her past, an urban welfare victim in a world totally alien to the Mexican farm on which she was raised. She constantly reviews her past, seeking to track in it the path to her present situation and to develop her own identity through this examination of past memories. While it is a source of pain, it is her own; she clings to it and becomes stronger through it.

When the past is a public one, however, Piercy acknowledges that it is "as much a matter of belief as the future is."⁴⁹ She is aware of the fictional nature of all historical interpretation, especially for those who have not had an equal share in it. Luciente reminds Connie that

the history you people celebrated -- all kings and presidents and Columbus discovered a conveniently empty country already discovered by a lot of people who happened to be living here -- was just as legendary as Mattapoissett's somewhat garbled version of Connie's own present. (pp. 173-174)

In Woman on the Edge of Time, past and future are equally fictions, one historical and one literary.

Time for Connie is also the pressure of impending apocalypse: in the asylum sequences, she is faced with the operation which will destroy her as a human being, while, in the future, the developing negative reality may also destroy Mattapoissett. It is the cause-and-effect logic of realism which underscores the necessity for action to avoid, if not her own personal defeat, then the destruction of the future utopia. Connie realizes that both her past and her present

will effect the future. Khouri rightly points out that "utopian potential . . . [is] a material force inscribed in the here and now of history, notwithstanding its perplexities and frustrations." Every event in Woman on the Edge of Time "prepares the way for the modification of future events."⁵⁰ This is a recurring theme in the novel, the responsibility of effective human action to shape the world to come. It is an idea at once intimidating and exhilarating; through her avoidance of any final outcome of events, Piercy manages to maintain both apprehension and hope throughout the book.

In Piercy's work, time is finally linked with freedom and control over time is again equated with power. Connie redefines her own power by taking her final stand against the System, by re-asserting her freedom of action in the present. The power of the System is defined in its control over its victims and their private time. As Thomas Cottle and Stephen Klineberg conclude in their study of the psychological functioning of the human time sense:

In the end, the overriding dimension of time in human experience is the dimension of freedom. For freedom implies the right to embrace one's past, one's immediate experiences, and one's prospects as one chooses, all according to an equitable reality. Like the word 'future,' freedom implies possibility. When freedom is denied, therefore, a person's past, present, or future, or all three, may also be denied.⁵¹

For Piercy, this kind of freedom is not yet part of "an equitable reality," although it may become so in the future. Connie is doomed in the present, but Luciente enjoys the full, adult freedom which she cannot reach. Connie is warned, however,

that

You may fail us.

You of your time. You individually may fail to understand us or to struggle in your own life and time. You of your time may fail to struggle together. . . . We must fight to come to exist, to remain in existence, to be the future that happens. (pp. 197-198)

In Piercy's universe, historical Necessity does not unfold the future along an inevitable path, whether of evolution or devolution, as it did for the writers of the last century. She is firmly committed to the freedom of mankind to shape its own future, but such freedom may work for good or for ill. The device of time travel enables her to describe both possibilities, emphasizing but not guaranteeing the utopia which is her own personal goal.

Woman on the Edge of Time is science fiction as political literature, a role for which it is suited because of its ability to explore

possibilities of social change, precisely because it allows ideas to become flesh, abstraction to become concrete, imaginative extrapolation to become aesthetic reality. It allows the writer to create and the reader to experience and recreate a new or transformed world based on a set of assumptions different from those we usually accept.⁵²

As Suvin contends, utopian SF is "social-science fiction."⁵³

The emphasis of utopia is upon the improved world, the desired political reality. Time travel confers a greater impact to the sociopolitical message of Piercy's work: by keeping the present before the reader, she increases the desirability of her future world; by developing the picture of her future 'garden', she strengthens her criticism of the pres-

ent. Acclaimed as "a splendid book in the tradition of nineteenth-century utopias,"⁵⁴ Woman on the Edge of Time nevertheless takes the conventional utopia one step further. As a rule, empirical reality in the utopian work either sets the reader immediately in the new world or else uses the old world as a frame, as a point of departure and return from the utopian locus. Piercy never allows the reader to lose sight of the present reality. She uses time travel to develop both worlds simultaneously, linked by Connie as the time traveler.

3

Gregory Benford has written a time-travel novel without a time traveler. His two space-times, California in 1962 and England in 1998, are joined not by any human link but by micro-particles which travel backward in time and so can be used to communicate with the past. As defined by Peter Nicholls in his Encyclopedia of Science Fiction, "the tachyon is a faster-than-light particle invented not so much because theoretical physicists had reason to suspect its existence as because there seemed no absolute reason why it should not exist." Among its other qualities, "it would appear in some circumstances to go backward in time, and . . . it suggests a more rational basis on which time-travel stories could be written."⁵⁵

Benford is a full-time physicist based at the University of California who has also done research work in England. These are the two landscapes he so realistically portrays in

Timescape, contrasting the excitement of the science 'hooom' at La Jolla in the sixties with the decay of the research facilities at the Cavendish Laboratory at the University of Cambridge in the nineties. Timescape is pervaded by such details of historical realism. It contains passing references to actual events such as the Teller-Oppenheimer controversy over weapons development in America. Its cast of characters includes historical figures such as Freeman Dyson, while the Kennedy years form the political background of the California narrative. The device of time travel by means of tachyons is embedded in a wealth of scientific details which are as factually rendered as is possible in a work of fiction. All of this indicates Benford's ambition to produce "novels which are basically science fiction but can do something that will entice the ordinary intelligent reader who has never read any science fiction."⁵⁶ The result is one of the more intelligent and naturalistic novels about time travel to appear to date.

The main premise of Timescape is relatively simple: the world of 1998 is faced with ecological ruin; the only effective action left is communication with the past in order to warn an earlier humanity against the technological developments which have led to this future catastrophe. In this way, the future hopes to change the past -- to 'make it didn't happen.' Benford's narrative structure develops on a dual level, relating two parallel sequences of events, one centered around the time-travel experiments at the Cavendish Laboratory

in 1998 and the other around their interference in Gordon Bernstein's steady-state experiment at La Jolla in 1962. It is this unexpected interference which leads Gordon to investigate and eventually to decipher the messages from the future.

The movements of these two story-lines resemble the structure of Woman on the Edge of Time to a marked degree. The downward trend of the 1998 narrative of a world sinking into chaos is in direct opposition to the rising action of the 1962 narrative of a world saving itself from a similar fate and developing in a more promising direction. Implicit in these two movements is the existence of our own empirical present which might very well take one of these two courses in the near future. It is this implicit reference to the present which assures the relevance of Benford's time-travel narrative as it swings from the older European world of weary decay back to the 'new world' of America in the sixties.

Both Benford and Piercy are concerned with the shape of the immediate future and this helps to explain their depiction of a linear time development which is unlike the cyclical historical theories of many far-future fictions such as Stapledon's Last and First Men and Blish's The Triumph of Time. Robert Scholes suggests that the impact of near-future science-fiction works owes much to the fact that they "deny that they are discontinuous, while nevertheless shocking us by their differences from the world that -- whether we claim to like it or not -- we are presently functioning in reasonably well. . . ."57

This sense of continuity with the present helps to give near-future works their greater intensity, leaving the reader with a sense that there is no time to lose, that immediate action is imperative to shape the future in a desirable direction. The ideas of free will and of human responsibility are thus more likely to be demonstrated in such works, rather than in far-future histories which often portray humanity's entanglement in cosmic movements which are destined to repeat themselves endlessly in spite of human attempts to divert them.

Just as time travel is the device which links Benford's two fictional realities, so the sense of time is used to indicate a major difference between them. 1998 is a world on the edge of apocalypse, not the awesome and far-future heat-death of Wells's universe but the far more immediate and infinitely more ignoble running down of the eco-system, a kind of progressive world-death which has been caused by human apathy and stupidity. In this world of shortages, riots and "reality-avoidance therapy" (p. 200), time has run out. The "diatom bloom" spreading over the oceans is a vast time-keeper winding down to zero. In the face of the inevitable, fighting an already lost battle, a few scientists make one last attempt to redeem the past, aware that they themselves are probably doomed.

In seeming contrast to this distorted mirror-image, Benford's California is a world in which "there was always time tomorrow" (p. 43). It is the Edenic garden unaware of the fact that it is already beginning to wither. For

California too time is running out, because the technology which has ruined the future is already at work in this present. In this sense, Timescape is about the lack of time, about the dangers of ignorance and complacency which spell death when events are allowed to follow the path of least resistance. 1998 is a world which Wells's Sleeper would have recognized, aware of how it has spent its future now that it is too late to reclaim it. 1962, on the other hand, can yet be warned of the danger and can change the course of its own future. The question posed to the reader is whether we in the empirical present will realize our own danger in time. 1998 is a grim warning of what we too might face in the near future if no effort is made to control 'the machine in the garden.'

In each of his fictional realities, Benford uses the ocean as the symbol of time. It is the insatiable red stain covering the oceans of 1998 which heralds the apocalypse, in the form of the final depletion of natural resources. It is the incessant beating of the waves against the shore in California which implies the impending doom of this newer world.⁵⁸ When Gordon, around whom the 1962 narrative develops, comforts himself that "waves could not batter down a coastline overnight" (p. 131), he is falling into the kind of near-sightedness against which Benford is warning his readers. The very title of the book suggests this threat of time's insatiability and of the efforts of the future world to escape its power -- 'time escape.'

In an interview with Charles Platt, Benford explains that

I tend to use ocean images, because I grew up near the ocean and it has a lot of ramifications for me. . . . The analogy between space, as an ocean, and the voyages of exploration which inaugurated modern times, is not lost on me. . . .⁵⁹

This analogy between space and the ocean appears in such earlier works as his In the Ocean of Night (1977) which centers around the American space program in the near future. In Timescape, Benford has shifted his focus from space to time, and once again it is the ocean image which serves as metaphor for this aspect of man's universe.

In Timescape, time also takes on the role of the alien. In Benford's earlier works, the motif of the alien is a central one, recurring in, for example, "If the Stars are Gods," a collaboration with Gordon Eklund which won the Nebula award in 1975, In the Ocean of Night, and The Stars in Shroud (1978). In a study of this motif in Benford's science fiction, David Samuelson suggests that "a crash of some sort is imminent, perhaps always implicit in his conception of technological society, and the alien theme represents in part a desire to escape that crash."⁶⁰ As a scientist, Benford expresses great confidence in the powers of technology but his ambivalence arises from the awareness that this technology is a human tool, wielded by the weaknesses as well as the strengths of human nature. His alien cultures tend to be greater and wiser than mankind, representing a possible direction for human evolution.

In Timescape, however, there are no aliens or spaceships. Indeed, so successfully does Benford delineate the mundane realities of 1998 and its near-similarity to our own present that his rare and passing references to radical differences, such as the "overalled chimps" which have been genetically altered to do society's heavy labor (p. 153), appear as intrusions in the landscape rather than the routine wonders of conventional science-fiction adventures.⁶¹

In Benford's opinion,

the alien doesn't have to be some extraterrestrial life form. Every person on this planet is undergoing a continuous encounter with the incredibly strange world our technology is creating for us just around the corner. It is alien.⁶²

In Timescape, he has moved his 'alien encounters' into human territory and the book has an even greater impact, perhaps, because of this move.

It is the forces in man's own universe which have become alien to him, the more so as he observes them with his new-found awareness and shapes them to his own ends. Even as the scientists of 1998 pursue their communication with the past, the real nature of time remains a mystery to them: "the equations of physics are all time-symmetric. That's one of the riddles of modern physics. How is it that we perceive time passing, and yet all the equations of physics say that time can run either way, forward or backward?" (p. 70). The question about what will happen to their own world if they succeed in changing the past is another one they are unable to answer until the actual experiment has taken place. Benford's solution

takes into account the favorite paradox of the time-travel motif. Back in California, Gordon's final conclusion is that

When a paradox loop was set up, the universe split into two new universes. If the loop was of the simple killing-your-grandfather type, then there would result one universe where the grandfather lived and the grandson disappeared. The grandson reappeared in a second universe, having travelled back in time, where he shot his grandfather and lived out his life, passing through the years which were forever altered by his act. No one in either universe thought the world was paradoxical. (p. 358)

Thus neither the future nor the past are aware of any apocalyptic changes in their realities. 1998 continues its slide into final disaster, part of an alternate universe forever cut off from the new future by which it has been displaced. 1962 develops as if its future has always been determined, unaware for the most part of the apocalyptic moment which has shifted its direction for all time. Only the occasional detail keeps the reader aware that it is no longer our own reality, notably the fact that John Kennedy survives the 1963 assassination attempt but by 1974 has been replaced by a President Scranton.

Benford introduces Timescape with the hope that "if the reader emerges with the conviction that time represents a fundamental riddle in modern physics, this book will have served its purpose" (n.p.).⁶³ His epigraphs include conflicting statements by Newton and Einstein about the nature of time. One of his future scientists writes that "defining just what time is in this problem will drive you to drink, if you're not a mathematician --, maybe if you are, too" (p. 107). Ultimately, the powers of human science are all-too-limited in the face of

the immensities of the impersonal universe. Benford seems to share Wells's vision of the uncaring, implacable movements of time, an alien force which is yet an integral fact of human existence. It is only his belief in the efficacy of human endeavor which distinguishes his 'scientific romance' from Wells's earlier work. Like The Time Machine, Timescape transcends the level of the human and widens its scope to present a final vision which incorporates the vast and alien forces of the universe:

Time and space were themselves players /In the cosmic drama/, vast lands engulfing the /human/ figures, a weave of future and past. There was no riverrun of years. The abiding loops of causality ran both forward and back. The timescape rippled with waves, roiled and flexed, a great beast in the dark sea. (p. 366)⁶⁴

This is not the "remote and awful twilight" of Wells's apocalypse.⁶⁵ Rather it is a vision of renewal, an apocalyptic realization of ultimate harmony and integration through which Benford overcomes the seeming alienation between man and his universe. It is this cosmic vision which is the positive aspect of Benford's title: if time is a force whose movements we must seek to escape, it is also the ocean, the timescape, in which the multiple realities of this universe and perhaps of others are formed.

In his linear unfolding of each narrative sequence, his careful detailing of ordinary life, and his certainty that the future is being determined in the present, Benford, like Piercy, has emphasized the realist side of the romantic/realist connection in science fiction. For the most part, he

avoids the metaphors of romance. On the human level, Timescape is not about the eternal conflict between Good and Evil, not even on the illusory level of A Connecticut Yankee and The Time Machine. His characters are like the Time Traveller after his realization that moral judgments no longer apply. Time is alien but it is not evil. If the world is heading toward catastrophe, all of mankind is to blame. There are no unregenerate villains at whom one can point an accusing finger. Neither the efforts of John Renfrew and Gregory Markham to send their message into the past nor Gordon Bernstein's struggle to ascertain its credibility constitute the heroic battle against the forces of the underworld. Rather these very human and individual characters battle human apathy, stubbornness and self-interest, weaknesses which they share with the rest of humanity.

Benford's apprehension is that it is these human imperfections which will allow the world to wear out and that time will take its toll of our refusal to act. As Markham realizes, "debts mount. . . . And as he read that evening of the spreading [diatom] bloom, it seemed a vast one was coming due" (p. 159). Timescape is about the gray areas of the human heart which Hank Morgan, in his thirst for power, refuses to acknowledge and which Connie cannot afford to consider in her powerlessness. These are the same gray areas which the Time Traveller in his quest for knowledge is forced to accept and which Benford's characters, to preserve the integrity of their scientific endeavors, must also accept. While Benford is

clearly warning the reader that time is running out, he is still committed to an exploration of the more subtle, more commonplace realities of human life. Timescape, like Woman on the Edge of Time, is a work of 'romantic realism' rather than of 'ironic romance.' The quest upon which his characters are embarked is a noble one, heroic in scope, but they themselves are all-too-human and do not presume to anything beyond the status of mortal men.

One of the methods used by Benford to maintain the element of the human in the midst of this struggle to save a world is to provide the details of the domestic background against which the greater drama is played out. This device also serves to reinforce the modern scientific concept of multiple, relative realities, all of which are equally valid in their diversity. For this reason, the domestic concerns and conflicts of Marjorie Renfrew as she tries to come to terms with the disappearance of her sedately middle-class lifestyle are rendered as sympathetically as are her husband's efforts to direct the forces of the microuniverse. While the fate of the future hinges upon Gordon's desperate attempts to decipher Renfrew's message, so does his career at the university, a far more mundane concern which nevertheless looms even larger in its immediate ramifications. Paralleling Gordon's scientific obsessions is the development of his personal life with his lover, Penny, against whose California WASP personality he is forever pitting the comparatively alien attitudes of his New York Jewish background. These are the details of

commonplace realism and Benford presents them with as much care as he does the more scientifically impressive sequences of his parable of knowledge. Everything is part of the transcendent timescape.

Because Benford's faith in humanity's ability to redeem ~~itself~~ is greater than Piercy's, one level of Timescape returns to the pattern of the monomyth, indicating its grounding in the optimism of the romance in spite of its stylistic realism. In Gordon's experiences, the reader can trace Campbell's pattern of separation -- initiation -- return, although the path is more obscure than in the conventional romance. Gordon's affinities to the cultural and scientific life of California are already tenuous, even before his experimental results widen the breach between himself and his colleagues. An 'alien' from New York, a Jew in the land of WASPs, Gordon's concern is to integrate himself into what is virtually a new life and to repudiate the "claustrophobic . . . ambience" (p. 57) of his past. For him, California is the real garden of promise, both in his personal life and in his career.

Through his growing alienation from his friends and colleagues, who cannot seriously consider anything as unorthodox as a message from another world, Gordon gradually comes to find his own strength and becomes his own person. After a particularly stressful session with his superior, who desires nothing so much as a return to conventional, acceptable experimental results, "he hitched his thumbs in his belt and

gazed out at the California insect engineering and felt good, pretty damn good" (p. 165). Ultimately, his faith in his own results and in the integrity of his work is vindicated by the scientific community and he is assured of his place as a respected physicist. The return to the 'idyllic world' which Piercy cannot grant her protagonist is Benford's reward to a scientist who has kept the faith of his science.

In spite of the parallels, the monomythic pattern in Benford's universe of multiple spaces and times is not quite the simple cycle of traditional romance. The world into which Gordon is re-integrated after refusing to give in to the self-deception which would have smoothed his way, is not quite the same one from which he was originally threatened with expulsion. Somewhere in the course of his work there has occurred a split in the timescape and his future is no longer what it would have been before the quietly apocalyptic displacement of the 'old' world of 1998. As if to symbolize this new life, Benford discloses that Gordon's second wife is from New York. In the midst of his new-found integration into the scientific community, he has also re-integrated the parts of his personal past from which he had once tried to separate himself.

In a sadly inverted parallel to Gordon's successful rite of passage into his new world, Benford traces the growing alienation of the British politician, Ian Peterson, whose despair and frustration in the growing chaos of 1998 drive him to a final retreat into the country, a self-imposed exile

where he waits for the end of his world. If the 'new world' of California breeds community and hope, the dying 'underworld' of 1998 offers only separation and alienation. Even the larger animals are becoming extinct, so that "mankind would be alone with the rats and the cockroaches. Worse, perhaps, he would be alone with himself" (p. 263).

In a sense, the only character who escapes the future armageddon is Benford himself, in the guise of Gregory Markham, the American physicist who is Benford's fictional persona.⁶⁶ Markham dies in a plane crash in 1998 but reappears as a young man in the new 'past' of 1974, in effect resurrected into a new life in an alternate timestream. David Ketterer has suggested that "the effect of such a process of recycling is to deny, circumvent, or in some way short circuit the linear, organic, and ultimately entropic process of history."⁶⁷ As a scientist, Benford may repudiate the cyclical time-theories of an earlier era, but Markham's resurrection does seem to demonstrate an attraction to the myth of the 'eternal return.'

In much the same way as The Time Machine, Timescape is a 'scientific romance,' a romance of science. Parrinder observes that science has always been a dominating factor in the development of science fiction:

The period of ascendancy of the scientific outlook -- an ideology justifying scientific research as intrinsic to the nature and purpose of human existence -- began with the technological triumphs and the erosion of traditional religious beliefs caused by the Industrial revolution. The growth of science fiction as a separate genre would be unthinkable

without this ascendancy. Up to the present, SF has continued to be moulded and shaped by scientific thought, even in its moments of rebellion against it.⁶⁸

Echoing much the same view, Benford himself writes that

In the nineteenth century, perhaps for the first time, science became a more valid way of explaining our perception of agreed-upon reality than does religion or myth -- two elements which, used at face value in fiction, yield fantasy. In sf science often appears as a symbol of the new canvas: the universe as impersonal, not man-centered.⁶⁹

Wells was one of the first to paint upon that new canvas, creating the image of a vast, uncaring universe in which man is only a helpless spectator. His apocalyptic vision approaches the level of myth in its awesome magnitude, its estrangement from everything human. In the same tradition, Benford's image of the timescape is mythic in its dimensions, but in his universe humanity has a role to play in the cosmic drama. Wells's romance concludes that human science will be overwhelmed by the workings of the cosmic machine. Benford's romance is less ironic and more positive: although dwarfed by the immensities of the timescape, human science can prevail and mankind can renew itself in the face of the impersonal universe.

For Benford, science is not only the foundation of the contemporary world-view, but also the tool with which men can engage their universe. He has referred to it as "a life"⁷⁰ and, not surprisingly, his main characters are also men to whom science is a whole life. John Renfrew, Gregory Markham and Gordon Bernstein are heroes in the same way that the Time Traveller is heroic: they face the immense darkness of the

unknown and penetrate it to whatever degree possible. It is the efforts of these men which salvage the future and Benford's implication is that the honest and open-minded life of science is a never-ending but worthwhile quest.

In contrast, already in 1962, "science equals engineering equals consumer yummys" (p. 112) and by 1998, science has been rendered impotent in the struggle to defer apocalypse. Peterson, the cynical but intelligent politician, observes that "we narrowed the compass of science until nobody saw anything but the approved problems, the conventional wisdom. To save money, we stifled imagination and verve" (p. 213). The character who most represents this anti-scientific mentality in 1962 and who therefore most closely resembles the traditional villain is Isaac Lakin, Gordon's supervisor at the university. He is guilty of exactly this sin when he tries to discourage Gordon's efforts to interpret the tachyon signals because they threaten to disrupt already established scientific theory. By implication, it is men like Lakin who are at least partially responsible for the future catastrophe. Complacent and self-satisfied, he has lost sight of the truth of science and is concerned only with convenience and convention.

Benford's faith in the efficacy of science illuminates the details of realism in this SF parable. Behind the naturalism of the two narrative sequences is yet another version of the myth of Prometheus, the role shared by Benford's scientists as they force knowledge upon a complacent and un-

believing humanity which will be saved in spite of itself. It is at this mythic level of romance that Timescape points to the future possibility of a successful movement from the underworld to a renewed Eden.

In his analysis of the time-travel motif, Stanislaw Lem criticizes works which are "as it were a priori vitiated by pessimism, in the sense that anything that may happen will be for the worse." He argues that

Cognitive optimism is, first of all, a thoroughly non-ludic premise, in the creation of SF. The result is often extremely cheap, artistically as well as intellectually, but its principle is good. According to this principle, there is only one remedy for imperfect knowledge; better knowledge, because more varied knowledge.⁷¹

This is the premise of Timescape, an optimism based upon the belief that science is a positive factor in human life, that a life of science is one which can contribute much to the course of mankind's future.

Balanced against this optimism, however, is Benford's awareness that science is only one interpretation of the real, another fiction by which we define our reality. When Gordon is pressured to prove his theories about the communication from 1998, he realizes that "everybody was asking him for the eternal, fixed Truth, and he had none for sale" (p. 166). According to Benford,

the habit of mind that the scientist should have is that you know you haven't got the full answer, you know your model is wrong in some regard. It would be unthinkable that we now had, say, an understanding of all the basic laws of physics. That habit of mind, -- of partial solutions, and remaining somewhat skeptical even of highly valued theories --

doesn't come through in science fiction because everybody's trying to put the lid on problems, and tie it all up neatly at the end.⁷²

Timescape does not tie up quite so neatly at the end. None of the characters in the past are certain about what exactly has occurred to the future because of the tachyon time-travel experiments, although Gordon's speculations about alternate universes seem a reasonable hypothesis. And the future dystopia does not fade out of reality; it is merely dislocated into another space-time continuum. The characters whose efforts have salvaged the past have not themselves been saved and this casts a certain shadow of irony over the entire work. Renfrew must still endure the slow death of his world as must the millions of men and women of his timestream. Even as Timescape closes on the vision of a renewed future, the dying world of 1998 continues to wind down in its own space-time limbo, as inarguable a reality as its replacement.

Nor is there any guarantee that the path of the newly created future will not also take a wrong turning and mankind repeat the same mistakes again or find new ways to destroy its environment. The continuing reality of 1998 points to the imperilled state of our own empirical present; like Piercy, Benford warns that salvation is never assured and that the shape of the near future is always contingent upon our actions in the here and now. On a less desperate but no less intense note, Timescape insists that humanity take responsibility for its own future history. In his vision of the timescape Benford affirms the existence of multiple and diverse realities and,

like Piercy, he is unwilling to indicate the existence of final solutions in humanity's future development.

The powers of science are limited because of the limitations of human nature. As Lincoln Barnett explains,

in the evolution of scientific thought, one fact has become increasingly clear: there is no mystery of the physical world which does not point to a mystery beyond itself. . . . For man is enchained by the very condition of his being, his finiteness and involvement in nature.⁷³

When men like Isaac Lakin refuse to consider new hypotheses which threaten the foundations of previous knowledge, it is because, in Frank Kermode's terms, they have allowed their theories to become personal myths. They are ignorant of the true nature of science as a human activity, as a contemporary fiction which defines a consensus reality. As such, it must be flexible enough to encompass the new discoveries which compel continuous redefinitions. When science is approached in this way, it may help in the renewal of humanity itself, and the 'machine in the garden' may yet become, in Richard Brautigan's words, one "of loving grace."

Benford is a scientist who believes in the importance of science fiction as a literary genre. In his opinion,

People don't read sf to learn about thermodynamics or quantum theory, any more than people read historical novels to learn history. One of the great strengths of the field, though, is its ability to incorporate the landscape of modern science, with all its grandeur and philosophical import, in a way conventional fiction cannot.⁷⁴

This is the kind of science fiction which Benford has produced in Timescape, a work which encourages speculation about the nature of time, about man's role in his universe and about the

science and technology with which he is shaping his future.

In its own way, Timescape is as much a utopian work as is

Woman on the Edge of Time. As Parrinder explains,

Utopia /is/ seen as a medium for the subjective longings of the human race; science, for its objective investigations of nature. . . . Yet science itself is a utopian activity to the extent that it aims to better the lot of mankind.⁷⁵

At the conclusion of the Yankee's adventures in time, Mark Twain repudiates the very reality of the phenomenal world; reduced to the status of dream, life is a meaningless illusion. In contrast, the Wellsian vision affirms empirical reality but, while the Time Traveller sets out again on his voyage into time, he does so with the knowledge that even ceaseless striving will not defer the end. These are the alienating visions of ironic romance, expressions of the fin de siècle apprehensions of a century awaiting the coming apocalypse.

In Woman on the Edge of Time and Timescape, these apprehensions of apocalypse are offset by a new, though tempered, optimism which affirms the possibilities of progress in time. Piercy offers the hope of a future utopia; the defeat of her protagonist does not deny the potential of the group and the death of the individual does not negate the continuation of the community. Benford also portrays human endeavor in the face of death. While his future dystopia cannot avert its own doom, it strives instead to help another alternate future to

become actualized. These time-travel narratives affirm the human potential to create meaningful works which live on after their creators. In this way, they demonstrate the link between the individual and the group, between the present and the future, between our actions in the here-and-now and the shape of the world to come.

Darko Suvin distinguishes between "myth as world-view" and "myth as formal pattern."⁷⁶ An examination of the adaptations of these formal patterns of myth in specific literary works is an aid to interpreting the themes and ideas developed within their narrative structures. Thus the inversions of the mythic quest which appear in A Connecticut Yankee and The Time Machine suggest the bleak and absurdist viewpoint of the ironic romance. In the same way, the transformations of the monomyth in Woman on the Edge of Time and Timescape demonstrate the more optimistic world-view of romantic realism.

Stephen Earl Kagle has identified what he terms a "societal quest" pattern in many recent works of science fiction. When compared to the traditional development of the monomyth, it demonstrates some significant differences and similarities which can help to provide a context for the time-travel works of Piercy and Benford:

In the societal quest, the "call" is internal and is usually made imperative by the decay of the old order /the present dystopic America; the dying world of 1998/. The quest is entered upon not by physical or even spiritual movement but by a discovery or an action which changes the conditions according to which society has operated /The brain-implant operation; the irresistible spread of the 'diatom bloom'/. From this point on the pattern of

action is determined. If the action which has been initiated originally is correct /time travel from Mattapoissett to Connie's present; the tachyon communication from 1998 to 1962/, the success of the quest is assured /renewed hope for the actualization of utopia; the creation of a new alternate future/; if the initial choice is wrong, the quest is doomed. The result of a successful quest is the metamorphosis of society itself. There are no boons for the questor to bestow, for all society is directly affected by the quest.⁷⁷

In this context, Woman on the Edge of Time and Timescape may be viewed as quest narratives which emphasize the communal over the individually heroic quest, while still retaining some of the elements of the traditional romance. As Kagle observes, "a questing society may increase the possibilities for a variety of individual heroism." Thus Connie Ramos and Gordon Bernstein are embarked on journeys whose goals are both personal and social. This communal element, this faith in the efficacy of cooperative action, is a major distinction between time-travel works of writers like Mark Twain and H.G. Wells and the more recent novels of Marge Piercy and Gregory Benford. It is a distinction which helps to explain the new-found optimism which appears in these later works. As Kagle writes,

one thing which we may learn is that the 'cosmic optimism' which was so severely strained in the 19th century did not die with the dawning of the 20th. Man still desires to believe in the existence of a solution to his problems.⁷⁸

The use of the time-travel motif as source of effective action also indicates this new optimism, an outlook at once more cautious than the aggressively domineering world-view of the forties and fifties but less bleak than the fatalistic

outlook of the end of the last century. In its depiction of multiple and diverse realities, of linear time-sequences which are nevertheless not limited to an indivisible and absolute time-line, this kind of science fiction is a literature of the relative universe, of the return of free will to human endeavor, and of hope for the shape of things to come.

Notes

¹Maxim Jakubowski and Malcolm Edwards list twenty SF writers who are also scientists. See The SF Book of Lists (New York: Berkley Books, 1983), pp. 214-216.

²Marge Piercy, Woman on the Edge of Time (Greenwich, Conn.: Fawcett Crest, 1976), pp. 30, 328. All subsequent references to this work will appear parenthetically in the text.

³Casey Fredericks, The Future of Eternity: Mythologies of Science Fiction and Fantasy (Bloomington: Indiana University Press, 1982), p. 26. Another method of demonstrating this simultaneity of different times appears in Michael Moorcock's Behold the Man and Michael Bishop's No Enemy But Time. Both novels describe their protagonists' 'present' adventures as time travelers while at the same time developing their past lives as parallel narrative lines. The result is to create the impression of the simultaneity of both the pasts and the presents of these characters as well as of the eras to which they travel.

⁴Darko Suvin, Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre (New Haven: Yale University Press, 1979), p. 30.

⁵David Ketterer, New Worlds for Old: The Apocalyptic Imagination, Science Fiction, and American Literature (Garden City, New York: Anchor-Doubleday, 1974), pp. 10, 14.

⁶Metamorphoses of Science Fiction, p. 83.

⁷Benford writes: "The character Gregory Markham has exactly my biography (except that he didn't write Timescape!). I felt a clear identification with Markham while writing the book. . . . I can remember thinking of Markham as myself." See "Death and the Textual Shadow of the SF Author, Again," Science-Fiction Studies, 9 (Nov. 1982), 341.

⁸Gregory Benford, Timescape (New York: Pocket Books, 1980), p. 149. All subsequent references to this work will appear parenthetically in the text.

⁹Marge Piercy, Lecture, McGill University, Montreal, 7 March 1984. It is worth noting that Wells, in such works as

The Invisible Man (1987), was also concerned about depicting "the view of a technological society governed by man's irrationality and directing the discoveries of reason toward irrational ends." See Robert M. Philmus, Into the Unknown: The Evolution of Science Fiction from Francis Godwin to H.G. Wells (Berkeley: University of California Press, 1970), p. 107.

¹⁰The Future of Eternity, p. 176.

¹¹Larry Niven, "The Theory and Practice of Time Travel," in his All the Myriad Ways (1971; rpt. New York: Ballantine Books, 1981), p. 120.

¹²"The Theory and Practice of Time Travel," p. 120.

¹³The 'diatom bloom' destroying the oceans of 1998 recall the 'red weed' with which the Martians begin to cover England in Wells's The War of the Worlds (1898).

¹⁴Richard Brautigan, "All Watched Over by Machines of Loving Grace," in his The Pill versus the Springhill Mine Disaster (New York: Dell, 1968), p. 1.

¹⁵Susan Kress, "In and Out of Time: The Form of Marge Piercy's Novels," in Future Females: A Critical Anthology, ed. Marleen S. Barr (Bowling Green, Ohio: Bowling Green State University Popular Press, 1981), p. 109.

¹⁶Like her prose, Piercy's poetry is ultimately a political statement. In "In the men's room(s)," she advises:
Yes, keep your eyes on the hands, let the voice go
buzzing.

Economy is the bone, politics is the flesh,
watch who they beat and who they eat,
watch who they relieve themselves on, watch who
they own.

The rest is decoration.

See her To Be of Use (New York: Doubleday, 1973), p. 8.

¹⁷Bulent Somay suggests that the utopian society of Woman on the Edge of Time is based upon an assumption of the victory of the protest movements in Dance the Eagle to Sleep. See "Toward an Open-Ended Utopia," Science-Fiction Studies, 11 (March 1984), 30. Since the revolution in the latter novel was a failure, one could interpret this as another indication of Piercy's use of alternate realities.

¹⁸Robert Scholes, Structural Fabulation: An Essay on the Fiction of the Future (Notre Dame, Indiana: University of Notre Dame Press, 1975), p. 24.

¹⁹Among full-time SF writers, James Blish has created this same interpretative ambiguity in both "The Testament of Andros" (1953) and The Frozen Year (1957). It appears also in Fritz

Leiber's "The Secret Songs" (1962) and in Barry Malzberg's Beyond Apollo (1972).

²⁰Celia Betsky, "Books Considered," The New Republic, 9 Oct. 1976, p. 39.

²¹Margaret Atwood, "An Unfashionable Sensibility," The Nation, 4 Dec. 1976, p. 601.

²²Bulent Somay criticizes Piercy's ending for its simplistic solution and for the fact that "a single technological innovation . . . stands between humanity and utopia, . . . a barrier which lacks social, cultural and economic dimensions." See "Toward an Open-Ended Utopia," 31. He would perhaps prefer the more realistic action of a group struggle, but while this may be a weakness in the credibility of the plot, Piercy's emphasis is on the conflict between Good and Evil and her theme of individual responsibility renders this kind of plot device almost inevitable, certainly in key with the rest of the book's development.

²³See Betsky, "Books Considered," p. 39 and "Towards an Open-Ended Utopia," 30.

²⁴Piercy, Lecture, McGill University.

²⁵Nadia Khouri, "The Dialectics of Power: Utopia in the Science Fiction of Le Guin, Jeury and Piercy," Science-Fiction Studies, 7 (March 1980), 58-59.

²⁶Northrop Frye, The Secular Scripture: A Study of the Structure of Romance (Cambridge, Mass.: Harvard University Press, 1976), p. 54.

²⁷Joanna Russ, "Recent Feminist Utopias," in Future Females, p. 80.

²⁸Atwood, "An Unfashionable Sensibility," p. 601.

²⁹Northrop Frye, Anatomy of Criticism: Four Essays (1957; rpt. Princeton, N.J.: Princeton University Press, 1971), p. 62.

³⁰Metamorphoses of Science Fiction, p. 34.

³¹The Mattapoissett characters tend to be rather flat and stereotypical, but this would seem to be a shortcoming of utopian fiction in general rather than a weakness on the part of the particular work. As Michael Holquist points out in his analysis of utopian fiction, "the intention of the utopist is the polar opposite of the conventional novelist. The former intends the typical, the stylized, the manageable. The difficulties at the heart of, say, a psychological novel are precisely those which the utopist seeks to avoid. People, like everything else in utopia, must be shriven of their idiosyn-

crasies, must be transformed into units that can be manipulated according to a restricted set of laws and presuppositions. . . . When literary critics dismiss as 'mere pawns' the characters in utopian fiction, they simply valorize an objective fact." See "How to Play Utopia: Some Brief Notes on the Distinctiveness of Utopian Fiction," in Science Fiction: A Collection of Critical Essays, ed. Mark Rose (Englewood Cliffs, N.J.: Prentice-Hall, 1976), p. 136.

³² Scott Sanders, "Characterization in Science Fiction: Two Approaches; 1. The Disappearance of Character," in Science Fiction: A Critical Guide, ed. Patrick Parrinder (New York: Longman, 1979), p. 132.

³³ Patrick Parrinder, Science Fiction: Its Criticism and Teaching (New York: Methuen, 1980), p. 58.

³⁴ "The Dialectics of Power: Utopia in the Science Fiction of Le Guin, Jeury and Piercy," 56-57.

³⁵ Parrinder observes that "since the late 1960s there has been a dramatic revival of interest in utopian ideas in the West. At the same time, the ideals of mastery over nature and of the perfection of the social organization have given way, to a large extent, to that of liberation from oppression." See Science Fiction: Its Criticism and Teaching, p. 85. A work such as Asimov's recent addition to his Foundation Trilogy (1951-1953), Foundation's Edge (1983), has a certain anachronistic flavor to it, so replete is it with such middle-period themes as galactic-empire building and scientific wonders. Thirty years after its origin, the dreams of the Foundation seem both out-of-date and unmindful of the more pressing concerns of contemporary society.

³⁶ Metamorphoses of Science Fiction, p. 95.

³⁷ "Recent Feminist Utopias," pp. 71-85; Margaret Miller, "The Ideal Woman in Two Feminist Science-Fiction Utopias," Science-Fiction Studies, 10 (July 1983), 191-198.

³⁸ Susan Kress, "In and Out of Time: The Form of Marge Piercy's Novels," 117.

³⁹ "Recent Feminist Utopias," p. 76.

⁴⁰ "In and Out of Time: The Form of Marge Piercy's Novels," 121.

⁴¹ Beverly Friend, "Time Travel as a Feminist Didactic, in Works by Phyllis Eisenstein, Marlys Millhiser, and Octavia Butler," Extrapolation, 23 (Spring 1982), 55.

⁴² Phyllis Eisenstein, Shadow of Earth (New York: Dell, 1979), p. 142.

⁴³Lecture, McGill University.

⁴⁴Marge Piercy, "In the Fifties: Through the Cracks," Partisan Review, 41 (1974), 208.

⁴⁵Pamela Annas, "New Worlds, New Words: Androgyny in Feminist Science Fiction," Science-Fiction Studies, 5 (July 1978), 155.

⁴⁶Connie's ambitions for her daughter echo an ongoing theme of Piercy's for the fulfillment of the potential of all women. In her poem "The morning half-life blues," she writes:

Girls of the dirty morning, ticketed and spent,
 you will be less at forty than at twenty.
 Your living is a waste product of somebody's mill.
 I would fix you like buds to a city where people
 work
 to make and do things necessary and good,
 where work is real as bread and babies and trees in
 parks
 and you would blossom slowly and ripen to sound
 fruit.

See her Hard Loving (Middletown, Conn.: Wesleyan University Press, 1969), p. 64.

⁴⁷"New Worlds, New Words: Androgyny in Feminist Science Fiction," 146.

⁴⁸"In and Out of Time: The Form of Marge Piercy's Novels," p. 119.

⁴⁹Lecture, McGill University.

⁵⁰"The Dialectics of Power: Utopia in the Science Fiction of Le Guin, Jeury and Piercy," 59, 57.

⁵¹Thomas J. Cottle and Stephen L. Klineberg, The Present of Things Future: Explorations of Time in Human Experience (New York: The Free Press, 1974), p. 256.

⁵²Annas, "New Worlds, New Words: Androgyny in Feminist Science Fiction," 145.

⁵³Metamorphoses of Science Fiction, p. 95.

⁵⁴Russ, "Recent Feminist Utopias," p. 83. Margaret Atwood writes of Piercy's utopia that it "is like a long inner dialogue in which Piercy answers her own questions about how a revised American society would work. The curious thing about serious utopias . . . is that their authors never seem to write more than one of them, perhaps because they are products, finally, of the moral rather than the literary sense." See "An Unfashionable Sensibility," p. 602.

⁵⁵ Peter Nicholls, ed., The Encyclopedia of Science Fiction (New York: Granada, 1979), pp. 591, 592.

⁵⁶ Gregory Benford, Interview by Charles Platt, in Platt's Dream Makers: The Uncommon People Who Write Science Fiction (New York: Berkley Books, 1980), p. 255.

⁵⁷ Structural Fabulation, p. 72.

⁵⁸ Benford makes several references to the fact that the waves eating away at California are "cupping forward out of Asia to break on the bare new land" (365). This might be interpreted as a prophecy that the East will be the 'new world' of the future; just as America is the new world of the recent past and Europe the old world whose future is depleted. Benford admits to his dislike of "the current fashion of European world-weariness." See Platt's Interview with Gregory Benford, p. 257.

⁵⁹ Interview by Charles Platt, p. 253.

⁶⁰ David N. Samuelson, "From Aliens to Alienation: Gregory Benford's Variations on a Theme," Foundation, 7 (1978), 12-13.

⁶¹ Piercy occasionally falls into the same use of intrusive technological detail. In Woman on the Edge of Time, these details, such as the mention of a "space service" (p. 209), for example, or a comment about "the battle of Space Platform Alpha" (p. 250), are jarring notes in the pastoral landscape of Mattapoissett, hints at the existence of an outer-space technology which is never integrated into the rest of the novel.

⁶² "From Aliens to Alienation: Gregory Benford's Variations on a Theme," 6.

⁶³ Benford has explored the problem of time in several earlier works, such as "Timeshards" (1979), which concludes that Henry Ford's dictum that "history is bunk" may be all too true, and "Time Guide" (1979), a pseudo-travel brochure advertising trips into the past and the future: "Group rates to the apocalypse available. Passengers must wear pajamas." See Destinies, 1 (Jan.-Feb. 1979), 246.

⁶⁴ This passage is a repudiation of the kind of time pattern which appears in James Joyce's Finnegans Wake (1939). In Joyce's work, the first sentence -- "riverrun, past Eve and Adam's, from swerve of shore to bend of bay, brings us by commodius vicus /a salute to G.B. Vico/ of recirculation back to Howth Castle and Environs" -- is a continuation of the last -- "A way a lone a last a loved a long the" -- which effect suggests the cyclical movement of time. See

Finnegans Wake (1939; rpt. New York: The Viking Press, 1959), pp. 3, 540. Benford rejects such a pattern in the universe of Timescape, in which the sequence is linear and open-ended.

⁶⁵H.G. Wells, The Time Machine, in The Works of H.G. Wells, The Atlantic Edition, Vol. I (New York: Charles Scribner's Sons, 1924), p. 110.

⁶⁶Timescape is almost an SF roman à clef: Benford appears also as one of the unnamed twins who are Gordon's students in California, where he and his real twin studied in the sixties (see "Death and the Textual Shadow of the SF Author, Again," 341); the publicity-hungry, exobiologist Saul Schriber is a thinly disguised parody of Carl Sagan; a walk-on role is given to David Selig, who appears briefly as an old-classmate of Gordon's while in 'actuality' he is the fictional hero of Robert Silverberg's Dying Inside (1972); and Penny recommends that Gordon read Philip K. Dick's 'latest' novel, The Man in the High Castle (1962). Appropriately enough, Dick's novel is a classic alternate-world story.

⁶⁷David Ketterer, "Death and the Denial of History: The Textual Shadow of the SF Author," Science-Fiction Studies, 9 (July 1982), 228.

⁶⁸Science Fiction: Its Criticism and Teaching, p. 67.

⁶⁹Gregory Benford, "The Secret of SF is Awe," New Scientist, 23/30 Dec. 1976, p. 767. According to Benford, science has two other major roles to play in science fiction: it is "a constraint which forces coherence on fiction" and "a vehicle for verisimilitude" (p. 765).

⁷⁰Gregory Benford, "Teaching Science Fiction: Unique Challenges" (Proceedings of the MLA Special Session, New York, Dec. 1978), ed. John Woodcock, Science-Fiction Studies, 6 (Nov. 1979), 249.

⁷¹Stanislaw Lem, "The Time-Travel Story and Related Matters of SF Structuring," trans. Thomas H. Hoisington and Darko Duvin, Science-Fiction Studies, 1 (1974); rpt. in Science Fiction: A Collection of Critical Essays, ed. Mark Rose (Englewood Cliffs, N.J.: Prentice-Hall, 1976), pp. 86, 88.

⁷²Interview by Charles Platt, pp. 257-258.

⁷³Lincoln Barnett, The Universe and Dr. Einstein, 2nd. rev. ed. (1957; rpt. New York: Bantam Books, 1968), p. 117.

⁷⁴"The Secret of SF is Awe," p. 765.

⁷⁵Science Fiction: Its Criticism and Teaching, p. 79.

⁷⁶Metamorphoses, of Science Fiction, p. 27.

⁷⁷Stephen Earl Kagle, "The Societal Quest," Extrapolation, 12 (May 1971), 81. When Connie criticizes Luciente for her emphasis upon the value of the community, Luciente's response is that "We are born screaming Ow and I! The gift is in growing to care, to connect, to cooperate" (p. 248). It is interesting to note a similar thrust in Ursula K. Le Guin's The Left Hand of Darkness (1969). Le Guin's protagonist, Genly Ai, whose name suggests the isolation of the individual, is ultimately unable to understand the male/female nature of the androgynous Gethenians whose ability to play both sex roles gives them a much broader outlook than his one-sided maleness will ever experience.

⁷⁸"The Societal Quest," 84.

Coda

It was earlier suggested in this study that to read the time-travel literature of the last century is "in itself a kind of time travel for us."¹ What we see in the works of writers like Mark Twain and H.G. Wells are literary metaphors based upon the scientific fictions of their era, an era which is forever in our past. Their visions of apocalypse are attempts at defining a reality whose parameters have become transformed over the last century. Their time travelers journey into a time which is no longer the time of the twentieth century. It is equally probable that the literary time travelers of the next century will experience aspects of the temporal universe radically different from those of our present conceptualizations.

However, the best of these works are based upon a common desire in their attempts to give literary form to that which is by nature ephemeral and formless. These works are efforts to reduce the concept of time to the level of the human. They are expressions of the desire to know time, to come to terms with it at least on the literary level, and to fulfill, at least on this level, our fantasies that it can be controlled. Each of the time-travel narratives examined in this study shares these fundamental qualities, shaped and directed by its

own contemporary time-theory. It is for this reason that the same ideas and themes recur throughout the history of the motif, although continually transformed by the shifting fictions of science and philosophy.

Science fiction as a genre is particularly concerned with the problem of time because of its own constant focus upon past and future scenarios. Darko Suvin draws the following distinctions between myth, fantasy and SF in their approaches to time:

The metaphysical genres shun historical time: myth is located above time, folktale in a conventional grammatical past which is really outside time, and fantasy in the hero's abnormally disturbed, historiographically dislocated present into which intrudes a "black", timeless or another extra-historical time. Inversely, SF shares the omnitemporal horizons of naturalistic literature, ranging through all possible times. Though concentrating on the cognitively plausible futures and their spatial equivalents, it can deal with the present and the past as special cases of a possible historical sequence seen from an estranged point of view -- since any empirical historical point or flow can be thought of as one realization among practically innumerable possibilities.²

Insofar as science fiction portrays possibilities, however farfetched, and is centered around human experiences, however alien to our own, it is committed to the universe of 'real' time and 'real' space, to the degree that these 'realities' may be apprehended by our limited awareness. Insofar as it functions as a literature of cognitive estrangement, it is committed to some recognition of the empirical present no matter how far it ranges in time and space. The time-travel motif is a singularly important one in science fiction for exactly these reasons. When well done, it demands the writ-

er's careful depiction of the time-theory consonant with his empirical present; it can also ensure that the fictional past or future remains linked with that empirical present. Writers like Mark Twain, Wells, Piercy and Benford use time travel to juxtapose the past and future against the present, at once defamiliarizing that present and reflecting upon it from new points of view. Whether time is absolute or multiplex, determined or open-ended, the time-travel motif can invite speculation upon, test the implications of, and suggest approaches to the various notions of time. Those writers who have recognized the significance of time travel as a literary device have frequently produced works which are themselves significant, both as literature and as explorations of one of the most mysterious and overwhelming aspects of human existence.

In the twentieth century, time is more nebulous and complex than it has ever been. Scientific theory has suggested new models which are ever more alien to our human experience. According to Hans Meyerhoff, "the more the experiential nature of time is scattered into meaningless fragments of the present, the greater the threat to the status of the self composed of these fragments, and the more demanding the quest for ransoming those qualities of time in terms of which the human situation (or the individual) might be reconstructed according to a coherent, intelligible, and significant pattern."³

In the final analysis, this is perhaps the greatest

strength of the time-travel narrative today. Without avoiding the complex problems of time in contemporary reality, it yet attempts to indicate coherent patterns within which the human role may retain its significance and impact.

Notes

¹H. Bruce Franklin, Future Perfect: American Science Fiction of the Nineteenth Century (1966; rev. ed. New York: Oxford University Press, 1978), p. 365.

²Darko Suvin, Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre (New Haven: Yale University Press, 1979), pp. 20-21.

³Hans Meyerhoff, Time in Literature (Berkeley: University of California Press, 1955), p. 118.

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